

BARASHADA CILMIGA

ULTRASOUND KA

Dr. CABDIRISAAQ

Axmed Maxamuud

Lahaanshaha dhiganahan

Lahaanshiyaha dhiganahan **Barashada Clmiga Ultrasound ka**, waxaa leh qoraaga qoray oo u huray maskax iyo maal. Lama rogan karo, lama daabacan karo, lamana beddeli karo qeyb ka mid ah ama gebi ahaan, iyada oo aan fasax buuxa laga haysan qoraaga qoray dhiganaha.

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Muqdisho -soomaaliya

Waxaa lagu daabacay

Madbacadda Yalax

Tel: +252615241028

AFEEF

Maqaldame waa Allaah (SWT),waxa aan ka afeefanaya qalad kasta oo iga dhacay, Aniga waxa aan ahay bini'aadam,hadii aad qalad ku aragto inta aad buuggaan akhrineyso waxa aan ka codsan lahaa oo jeclaan lahaa in aad ila so socod siiso si aan u saxo qaladaadka buugga ku jira, waan idinkaga mahad celinaya hadii aad ila wadaagtaan wixii qaladaad ah ee ku aragtaan buuggaan inta aad aqrineysaan mahadsanidiin.

Mahad celin

Waxaa mahad iska leh Allah (SWT) oo nasiiyay nimcooyin badan,nafaray inan mar walbo ku shukrino.waxaa xusid iyo mudnaan iska leh waalidkeyga isoo barbaariyey waliba ila soo maray dhib iyo rafaad badan,una soo dulqaatay duruufaha iyo waayaha adag ee noolasheyda,kuna soo dadaalay heerka maanta aan taaganahay,ila wadaagay dhib iyo dheefba.Allah waxaan u weydiinaya in uu u dambi dhaafa adduun iyo aakhiraba,jannadii firdowsa guri uga dhiso. waxaan u mahad celinaya dhammaan macallimiinteyda iyo qof walbo oo igala qeyb qaataay iina muujiyay farxad,dhiiragalin iyo soodhaweynba.

dhamaantood waxay mudan yihiin inan u mahad celiyo.

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1. Ustaad Daahir Cumar Bare
2. Dr Abdishaahid Abdulkadir Mahamed
3. Cali Yusuf Cali

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Hordhac

Ultrasound: waa erey loo isticmaalo in lagu qeexo soo noq noqoshada codka ka sareeya 20 000 Hertz (Hz),codkaa soo ka baxsan heerka maqalka bini aadamka. Sidaas waxaa ku qeexay WHO haayada caafimaadka aduunka .Baaritaanka ultrasoundka caadiga ah jabaq noqoshadiisu waa 1–30 megahertz (MHz).wax yaabaha soo socda waa heerarka kala duwan ee jabaq noqoshada,ku waasoo loo isticmaalo in lagu baaro qeybaha kala duwan ee jirka.

- 3–5 MHz for abdominal areas (3-5MHz waxaa loo is ticmaalaa uur kun jirta).
- 5–10 MHz for small and superficial parts (5-10MHz waxaa loo isticmaalaa qaybaha sare iyo kuwa yar yar).
- 10–30 MHz for the skin or the eyes(10-30MHz waxaa loo isticmalaa maqarka iyo indhaha).

Nuucyada ultrasound Ka iyo Meelaha Lasaaro.

- 1. Abdominal Ultrasound:** waa ultrasoundka la saaro uur kun jirta sida Beerka(liver),xameetida(Gallbladder),Beerka yarada(spleen),Kaliyaha(Kidneys).
- 2. Pelvic Ultrasound:** waa ultrasoundka lasaaro miskaha/sinaha sida minka (uterus), ugxaansidaha(ovaries),qanjirka borostatada(prostate gland).
- 3. Transvaginal Ultrasound:** waa gudbiye ku xiran qalabka ultrasoundka waxana la galiyaa makaanka is loo xaqijiyo waxyaabaha sababa miska xanuunka.
- 4. Obstetric Ultrasound:** waa ultrasoundka la saro hooyada uurka leh si loo ogado xalada uurjiifka.

Nuucyada sawirada ultrasoundka

4 Nuuc ayaa loo qaadaa sawirada ultrasoundka **1. 2D ultrasound** waxaa loo isticmaala inuu soo saaro 2ba sawir oo laga soo qaaday xubnaha gudaha ku jira sida kalida.

2. 3D ultrasound waxaa loo isticmaala inuu soo saaro 3sawir oo laga soo qaaday xubnaha banaanka ah, sida in lagu ogaado faruuranka uur jiifka(Cleft lip).

3. 4D ultrasound waa 3D ultrasound oo la casriyeeyey(updating) kaa soo lagu kordhiyey inay sawiradu dhaqaqaan.

4. Doppler ultrasound waxaa lagu qii meeyaa qulka dhiiga ku socda xididada.

Ultrasound Transducer Sidoo Kale Waxaa Lagu Magacaabaa Probe: waa qalab soo raara mowjado cod ah ku waa soo ku dhaca unugyada jirka kadibna sameeya jabaq noqosho. Qalabkani sidoo kale wuxu aqbalaa jabaq noqoshada kadibna wuxuu u diraa kumbuyutarka waxana loo isticmaalaa in laga sameeyo sawir lagu magacaabo Sonogram.

Piezoelectric crystals: waa walxo awooda in ay u badalaan shaqada mishinka tamar koronto, waana walxo muhiim u ah ultrasound kasta.

Types Ultrasound Transducer (Nuucyada qalab ka soo saara mowjadaha codka)

- 1. Convex Transducer :** waa qalab soo saara mowjado cod ah marka lasaaro uur kujirta sida Beerka(liver), xameetida(Gallbladder),Beerka yarada(spleen),Kaliyaha(Kidneys).
- 2. linear Transducer :** waa qalab soo saara mowjado cod ah marka lasaaro Qanjirka Tayroodhka & Naasaha.
- 3. EndocavityTransducer :** waa qalab soo saara mowjado cod ah marka lasaaro Makanka & Malawadka.
- 4. Pencil Transducer:** waa qalab soo saara mowjado cod ah marka lasaaro xididada dhiiga.



Controls of the Ultrasound Equipment (sida loo hago qalabka ultrasoundka)

Hagitaanka aas aasiga ah ee loo baahanyahay waqtiga hore eebaaritaanka ultrasoundka waa sida soo socota:



Figure 2.9: Ultrasound equipment showing a wide array of knobs for control of various features. Most ultrasound equipment have a keyboard and a trackball on their consoles.

1. Depth: Batoonkani wuxuu kuu ogalaadaa in la siyaadiyo ama la yareeyo sida loo arkaayo xubinta ama Meesha la baarayo ultrasoundka.
2. Gain: batoonkaan wuxuu siyaadiyaa ama yareeyaa iftiinka xubinta labaarayo ayadoo loo wareejinaayo saacad wareeg ama lid saacad wareeg.
3. Time gain compensation TGC: waxaa lagu habeeyaa iftiinka qotada sawiro qaas ah,qaybta sare ee batoonadaan waxay siyaadiyaan ama yareeyaan iftiinka qaybta dhow Transducer ee gudbiyaha ultrasoundka,qaybta Hoose ee batoonadaan waxay siyaadiyaan ama yareeyaan iftiinka qaybta fog ee gudbiyaha ultrasoundka.

4. Freeze: Batoonkaan waxaa loo isticmaalaa inuu sawirka ku hayo shaashada ultrasoundka kadibna lasameeyo cabirkha xubinta lasaaray ultrasoundka.
5. Track ball: waa baton loo isticmaalo in lagu dhaqdhaqaajiyo xubinta ultrasoundka la saray waxaana la dhigaa Meesha la rabo in lagabilaabo cabirkha.
6. Measurement: waxa lagu cabiraa sawirka saran shashada ultrasoundka markii aad riixdo baton kan, mouse wuxu saaranyahay shaashada kadibna waxad go aan sata Mesha aad dhigi lehed mouse ka kadibna jiid mouse ka ila ad ka gayso Mesha cabirku ku egyahay.



Figure 2.12: Time Gain Compensation (TGC) on an ultrasound consol. The upper and lower knobs adjust brightness in the upper and lower fields respectively (labeled). The overall knob (labeled) adjusts brightness in the whole image.

Cutubka 1aad

**Abdominal ultrasound (kumbuyutarka uur
kujirta)**

Hordhac

Waa habka kaliya oo lagu qaado sawirada ultrasoundka ee la isticmaalo maalin kasta, Daaweynta casriga ah waxay muhiimad siiyey in la balaariyo baaritanka laguna caawiyo xaaladaha deg-dega ah si loo sameeyo qiimeyn aas aasiya iyo in lagula socdo Bukaanada ka cabanaya calaamadaha kala duwan ee uur ku jirta,sida bukaanada ka cabanaya cagarshowga soo dahay ee beerka,bukaanada kansarka qaba iyo bukaanada jugtu uga dhacday uur ku jirta,Qiyaas transducer ku inuu yahay qalab ku xiran ultasoundka ee lasaaro dusha sare ee xubnaha bixinayana iftiin toosh, iftiinkaas oo ogolaanaya in lagu arko xubnaha ku jira gudaha uur kujirta,qalabka ultrasoundku waa mid la heli karo(accessible),aan galin gudaha jirka(non-invasive), aan shoocaac lahayn(non-irradiant),aan qaali ahayn(inexpensive),laguna celcelin karo(repetitive), marka la isticmaalayo qalabka ultrasoundka bukaanku waa inuu Neefta isku celiyaa,dhaqdhaqaqna uu san samayn.

1. The Liver (Beerka)

Beebrku waa xubin shaqadeediisu muhiim tahay una Qaabaysan Nudo is Gudgudbaaya.

Beerka Caadigaa Waa Normoechoic (midab Madow Ah).

Baaritanka Beerku Wuxuu Kabilowdaa in Qofka Loo Seexiyo Dhabarka loona Jan jeeriyo dhinaca Bidix .

Marka Baaritaanka Loo Adegsanaayo Qalabka **Ultrasoundka** Bukaanku Waan inuu Neefta isku Celiyaa Daqiqado. Convex transducer Jabaq noqoshada loo isticmaalo Beerka waa 2-5 Mhz.

Waa in la isticmaalo jabqnoqosho Hoose si loo helo Gudbitaan Wanaagsan.

Marka labaarayo oo gada saree e Beerka waa in la isticmaalaa linear Transducer kaasoo jabaq Noqoshadiisu tahay mid sare 4-8Mhz.

Marka Loo eego Qaybaha Yar yar ee ka Dhex Shaqeeya Beerka Waxaa Loo kala saaraa 8 qaybood

(8 segments) Marka Lafiiriyo Qaab Dhererka Beerka waxaa ka gudba 3 Aroore oo beerku lee yahay

(three hepatic veins). Marka la eego Qaab Baldhaca Beerka waxaa ka gudba labdada Qaybood ee Arooraha Wayn (portal bifurcation) waxaana kala qaybiya qaybaha sare (upper segments) ee Beerka waxayna sameeyaan Qeebta Hoose.

Qeebta dambe (caudate lobe) segment waxay kala qaybisaa labadii Qaybood ee aan Horay usoo sheegnay. Gadaal waxaa ka xiga (Inferior Vena Cava) Harayna Waxaa ka xiga Xajiyaha Arooraha (venous ligament). Qeebta Weyn Ee Bidixda Beerka Waxaa Kujira qaybta yar ee labaad (segment II superiorly) iyo Qaybta Sadexaad ee Hoose (segment III inferiorly).

Qaybta Wayn Ee Midigta Beerka waxaa Mara Arooraha Bidix Ee Beerka (left HV) .

Qaybta yar Ee Afraad waxay Kutaal Inta U dhaxaysa Arooraha Bidix Ee Beerka (left HV) iyo Arooraha Dhexe Ee Beerka (middle HV).

Qaybaha Yar yar Ee 5aad iyo 8aad Waxay u dhxeeyaan Arooraha Dhexe iyo Arooraha Midig Ee Beerka. (middle and the right HV).

Dhinaca Arooraha Midig Waxaa Laga Helaa Qaybaha Yar Yar ee Dambe Sida Qaybta Sare ee 7aad iyo Qaybta Hoose ee 6aad.

1.1 Habka loo Arko Beerka iyo Xubnaha Laxariira:

- Qaybta Wayn Ee Midigta Beerka oo Ka Kooban Qaybaha Yar Yar 7aad iyo 8aad Waxay Xiriir La Lee yihiin Muruqa U dhxeeyaa Feeraha iyo Caloosha (diaphragm).
- Qaybta Yar Ee 6aad waxay xiriir la leedahay Kilida Midig (right kidney).
- Qaybta Wayn Ee Gadaale Waxaa loo Baaraa Habka toosan (sagital section).
- Habka Dadban Xameetida Waxaa Ku Wareegsan Qaybaha Yar Yar Eee 4 aad , 5aad iyo 6aad.

- Habka Dadban Qaybta Sare ee uur Kujirta Waxaa Laga Helaa Qaybaha Yar Yar Ee 5aad , 7aad ,8aad. Waxay Daboolaan inferior Vena cava.



Fig. 2. Normal liver

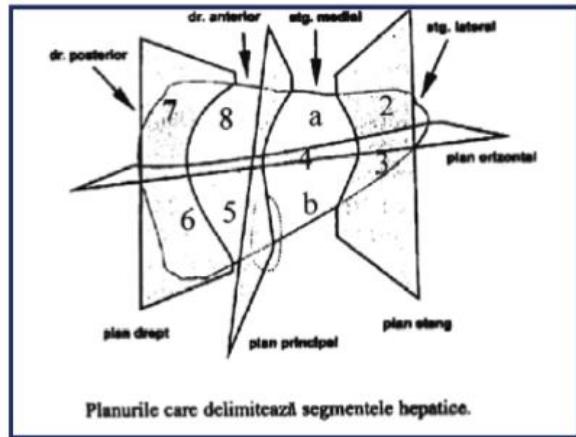


Fig. 9. Liver segmentation

1.2 Acute hepatitis (Cagarshow Cusub ee Kudhaca Beerka)

Waa jiro cusub oo ku Dhacda Beerka Waxayna Caan Kutahay Inuu Siyaado Dheecaanka Loo Yaqaan (Aminotransferases) Qaas Ahaan GPT gu Marka uu 10 Jeer Kabato Sidii Caadiga Ahayd.

Fayrusyada Keena Cagaarshowga Cusub ee Beerka Waxaa Ugu Caaansan Fayrusyada Kudhaca Beerka Waqtiyada Kulul Sida (Fayrusyada keena Cagarshowyada A, B,C iyo E Virus)

Ama Fayrusyo Kale Sida (herpes virus, Epstein-Barr virus or cytomegalus virus).

Waxaa Kaloo Keeni Kara Cagaarshowga Cusub Ee Beerka Cabida Alkolada iyo Daawooyinka Dadku Ku sumoobo toxic drugs (Paracetamol, Halotan, etc).

Ultrasoundku ma muujiyo Cagaarshowga Cusub ee Beerka .

Qofka Qaba Cagaarshowga Cusub markii lasaaro Ultrasoundka Dhamaan Beerkiisu Waa Caadi.

80% Dadka Qaba Cagaarshowga Cusub ee Beerka Waxaa Lagu Arkaa **Ultrasounka** Barar Kujira Xameetida (gallbladder wall edema) waxaana Sababa Albumiinka oo Yaraada

(hypoalbuminemia) inta badan waxaa lagu Arkaa Dadka Da'da Yar (young person).

Mararka Qaarkood Waxaa La Arkaa xanuun beerka Kubaahsan oo ay sababtay Biyo Kujira Beerka (hepatic edema) iyo Beerka yarada oo waynaatay (splenomegaly).

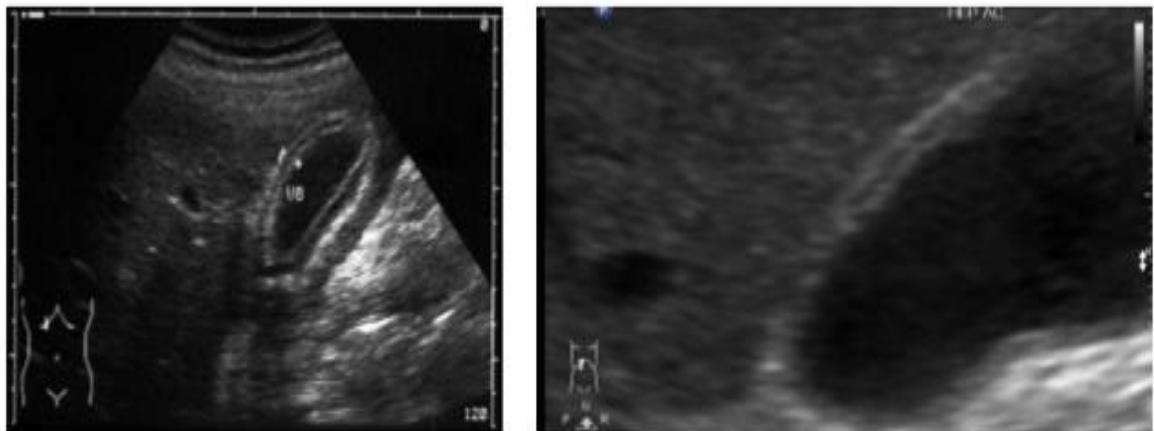


Fig. 1. Thickened and doubled wall in acute hepatitis

1.3. Chronic hepatitis (Cagaarshow Dahay)

Waa Cudur Daahay oo Keena Caabuq Ku dhaca Beerka Wuxxuna Soomuuqdaa ugu Yaraan Mudo 6bilood Ah, asagoon lahayn Raysasho Ayna Lasocdaan Dhimashada iyo Yaraan shada Unugyada Beerka.

Cagaarshowga Soo Daahay eek u dhaca Beerka waxaa lagu arkaa Burbur Kudhaca unugyada Beerka

(cytolysis syndrome).

Baritaanka **Ultrasounka** Masheego wax Calaamad oo Lagu yaqaan Cagaarshowga Soo Daahay,

50% Dadka Qaba Cagarshowga Soo Daahay Calaamada Lagu Yaqaan Waa Beerka Yarada oo Waynaata (splenomegaly up to 13-14 cm). **Ultrasoundka** Uur kujirtu Masheego Cadaymo Rasmi Ah ee Kusaabsan Cagaarshowga Soo Daahay, sidaa

Darteed **Ultrasoundka** Wxaa Loo isticmaalaa in Lagu Doorto Meesha Cadka Beerka Lagasoo Jaraayo (hepatic biopsy) Si Baartaan Caafimaad Loogu sameeyo Waan in Lala Socda Dadka Qaba Cagarshowga 6bilood oo kasta. Baaritaanka **Ultrasoundka** ee Cagaarshowga Soo Daahay waa mid xaddidan (limited value) Kaliya Wuxuu Sheegaa Beerka Yarada oo Waynaata iyo Xajiyaa yaasha Beerka Iyo Qaybta Saree e Xiidmaha oo Bararta (splenomegaly and hepato-duodenal ligament adenopathies).

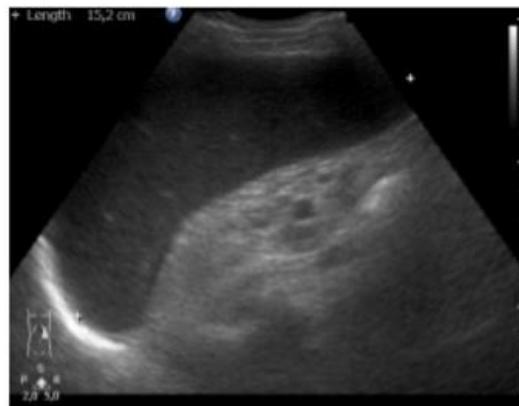


Fig. 2. Splenomegaly in a patient with chronic hepatitis C (longitudinal diameter 15 cm)

1.4 Hepatic steatosis (Beer Xayroow)

Beer Xayrowga Waxaa Lagu Qeexaa Baruur Ka Buuxsantay Beerka oo Kabadan 10%.

Waxyaabaha ugu waa wayn (main causes) ee sababa Beer xayrowga waxaa Kamid Ah :

- A. Muda dheer oo la cabo Alkolada (alcoholic steatohepatitis – ASH syndrome)
- B. Cayilka Badan (obesity)
- C. Sonkorow (diabetes)
- D. Dufanka Badan dyslipidemia (non-alcoholic steatohepatitis – NASH syndrome).

Waxaa Kaloo Beer Xayrowga Sababi Kara Cagaarshowga Nuuca C (hepatitis C virus).

90% **Ultrasoundka** Waxaa Si Fudud oo Xaqiiqa Loogu ogaan Karaa Beer Xayrowga.

Ultrasoundku wuxuu Muujiyaa Beerka oo Cadan Kujiro "bright liver" Marka Lababar dhigo Ama Loo eego Unugyada Kalida.

Nuucyada Beer Xayrowga :

- A. Beerxayrowga Fudud (mild steatosis)
- B. Beerxayrowga meel Dhexaadkaa (moderate steatosis)
- C. Beerxayrowga aadka u Daran (severe steatosis).

Marka La Adegsado Qalabka **Ultrasoundka** Unugyada Beerka Waxaa Kasoo Muuqda Jabaqyo Kala Duwan sida

A. fatty-free Baruurta aan xadidnayn ee Beerka waxay muujisaa Humag madow (hypoechoic areas).

B. focal steatosis Barta Beer Xayrowga waxay Muujisaa Humaag Cadaan Ah (hyperechoic).

Conclusion (Gabangabo)

Ultrasoundka waa Habka Ugu Wanagsan ee lagu Ogaado Beerxayrowga (non-invasive technique). Sidoo Kale Ultrasoundka Waxaa Si Sahlan loogu Xaqijinkaraa Bar Xayrowga Beerka (focal hepatic steatosis) iyo Baruurta aan Xadidnayn ee Beerka (fatty free).



Fig. 11. Fatty-free area in the right lobe



Fig. 12. Fatty-free are in the left lobe

1.5 Liver cirrhosis

Waa Heerka Ugu Dambeeyaa cudurada Daaha ee Beerka Ku Dhaca, Kuwaas oo Ku bilowda Bubur iyo isbedelo Ku dhaca Unugyada Beerka Kadibna Waxaa Ka Dhasha Kuus kuusyo Ka samaysan unugyada Beerka oo Dhintay.

Waxyaabaha keena Dhimashada unugyada Beerka 90% Waxaa Masuul Ka Ah Cabidda Alkolada , Cagarshowga B & C. Kiisaska Qaarkoodna Waxaa Keena Difaaca Qofka OO si Qaldan U burburiya Unugyada Beerka.

Burburka Unugyada Beerka Marka La Adegsado Qalabka **Ultrasoundka** waxaa Lagu Arkaa Biyo Kujira Xuubka Sare ee Caloosha (ascites).

A. Caudate lobe hypertrophy (Qaybta Dambe ee Beerka oo Weynaata).

B. splenomegaly (Beerka Yarada oo Weynaata)

C. ascites (Xuubka Saree e Caloosha oo Biyo Galaan).

A. Caudate lobe hypertrophy (Qaybta Dambe ee Beerka oo Weynaata) iyo qaybta Yar ee Koowaad ee Kujir Qaybta Weyn ee Gadaale oo Beerka Waa ay Waynaataa inta uu jiro burburka beerka,

B. splenomegaly (Beerka Yarada oo Weynaata) 80% Kiisaska Qaba Burburka beerka (liver cirrhosis) Beerkayaradu way kawaynaataa 12cm marka loo cabrio Dhererka, Bukaanada Qaba Weynaashada Beerka Yarada waxay aad uga daran yihin Kuwa Qaba Cagaarshowga soo Daahay,Waynaashada Beerkayaradu waxay kabadata 15cm,

Marka Beerka Yarahu uu Kaweynaato (Splenomegaly) 18 ama 20cm waxay Sababtaa Cudurada Kudhaca Dhiiga Sida :

A. Xinjirowga Dhiiga oo Xumaada (thrombocytopenia<100,000/mm³).

B. Unugyada Cadcad oo Yaraada (leucopenia < 3000/mm³) .

C. Unuyada Cascas oo hoos u dhaca (anemia).

C. ascites (Xuubka Saree e Caloosha oo Biyo Galaan).

Ultrasounka Waa aaladda Ugu Muhiimsan ee Lagu ogaado Inay biyo kujiraan xuubka sare ee caloosha (Ascites) biyahaasna waxaa inta badan lagu arkaa Bukaanka Qaba Burburka Beerka (decompensated cirrhosis), **Ultrasoundka** Waxaa Lagu Ogaadaa

(volume of ascites) Muga Biyaha Kujira Xuubka Sare ee caloosha iyo in lagu qiimeeyo xilliga uu Qaadanayo Daawooyin Kaadi badiyaasha ah (diuretic therapy),

(ascites volume) Muaga Biyaha ku jira xuubka sare ee caloosha waxaa loo qaybiyaa 4 Nuuc:

A. inta uguyar Muga Biyaha Biyaha ku jira xubka sare ee caloosha(minimal ascites 1-2kg).

B. Muga Biyaha yar ee kujira xuubka sare ee caloosha waxay gaaran (3-4 kg).

C. Muga Biyaha dhexe ee gala xubka sare ee caloosha wuxu Gaaraa(moderate ascites 7-8 kg)

D. Biyaha ugu Badan ee Gala xuubka Sare ee caloosha Waxay gaaraan (10-15 kg).

Muuqaalka **Ultrasounka** ee Biyaha kujira xuubka sare ee caloosha wuxuu u muuqdaa Sawir madow (anechoic image).



Fig. 24. Moderate perihepatic ascites
Intestinal loops “float” in the ascites



Fig. 25. Large ascites in the Douglas space



Fig. 14. Normal caudate lobe (31 mm) in liver cirrhosis



Fig. 15. Enlarged caudate lobe (39 mm) in liver cirrhosis

Cutubka 2aad.

**Abdominal ultrasound in the diagnosis focal liver
lesions – fluid lesions**

**Ultrasoundka uurjirta Waxaa Lagu Baaraa Nabrahay Kuus Kuusan
Iyo Biyaha Kujira Beerka.**

Ultrasound ka uur Kujirta Waa Habka koowaad ee sawirka looga Qaado Dadka Ka cabanaya Xanuunada Sida Jug ku dhacday uur ku jirta (abdominal trauma) Taasoo keenta Nabro Kuus kuusan oo lagu Arko Beerka, Sidoo kale **Ultrasound** ku Wuxuu Sheegaa Biyo Gala Tubooyinka Beerka (biliary cysts) iyo Biyaha Ay keenaan Gooryaanada ku dhaca Beerka.

Qaybta soo Socota Waxaan Uga Hadli Doonaa Nabraha Kuuskusan oo Biyuhu Kujiran ee Beerka (focal liver fluid lesions) sida

A. Biyo Fudud oo kujira Beerka (simple hepatic cyst).

B. Biyo Badan oo kujira Beerka (polycystic liver).

C. Gooryaanka biyaha Beerka(Hydatid hepatic cysts)

D. Maal Kujirta Beerka (liver abscess).

A. Biyo Fudud oo kujira Beerka (simple hepatic cyst).

3% dadka loo sameeyey Baaritaanka Ultrasoundka waxaa Biyo Fudud oo ku jira lagu arkaa Beerka, Biyahaas oo Aysan Sababin Ku dulnoole (non-parasitic), Wax Calaamad ah Malahan Biyaha Fudud ee kujira beerka, Kiisas Aadn uyar ayaa lagu Arkaa calaamadaha soo socda

A. Raaxa La,aan (discomfort) B. Xanuun Kajira Dhinaca Sare ee midig kaasoo Ay Sababeen Biyo Badan oo Kujira Dhinaca Midig, Marka La Adegsado **Ultrasoundka** Biyaha Kujira Beerka Waxay u muuqdaan Si caadiya, Nabraha Yar yar ee Madow Laguma Arko Ultrasoundka Sababtoo ah Waxaa Ku wareegsan Lakab Nudo Ah (epithelial layer), Biyaha Kujira Beerka Waxay U qaabaysanyihiin Qaab Wareeg ah (round) ama Qaab Ukumeed (oval).

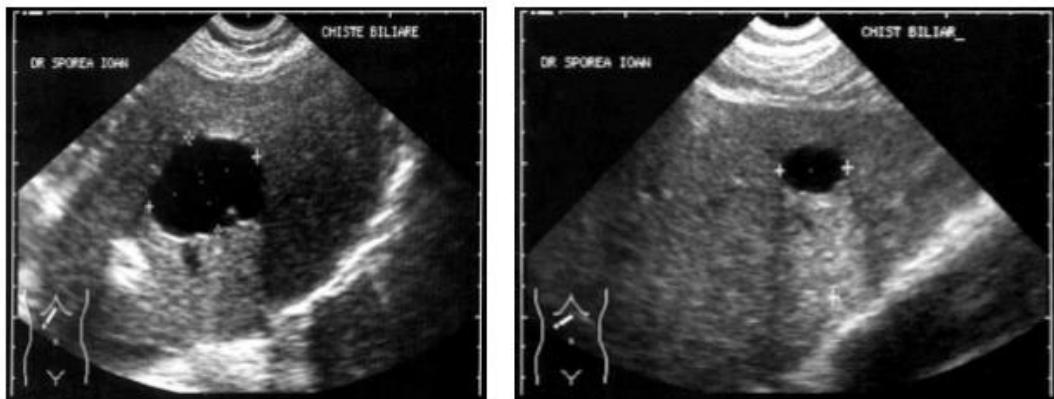


Fig. 1 and Fig. 2. Simple liver cyst: anechoic lesion with thin wall and posterior enhancement

B. Biyo Badan oo kujira Beerka (polycystic liver).

Waa Cudur lagu Dhasho kaas oo can ku ah Biyo Meelo kala duwan uga jira Beerka kuwasoo Ay lasocdaan Biyo badan oo kilyaha meelo kala duwan uga jira, Cudurada lagu dhasho waxaa la iskugu Gudbiyaa dhaxal muuqda(dominant autosomal transmission),intabaden Cuduradaas waxaa lagu ogaadaa **Ultrasound** Joogto Ah,Dadka Qaba cuduradaas wax calaamada(asymptomatic) laguma Arko, **Muuqaalka Ultrasoundku** waxuu si sax ah u sheegaa in biyo badani ku jiraan Beerka kuwaasoo u muuqda Qaab Wareeg ah (round) ama Qaab Ukumeed (oval). Ultrasounka caalamiga ha wuxuu si dhamaystiran u sheegaa in biyaha ku jira Beerka Ay u muuqdaan Mugdi Ama Madow(anechoic) Unugyada Beer Kuna Waxay u muuqdaan caadi, Hadii Aysan Biyo badani ku jirin kilyaha Biyaha kujira beerka wax dhib ah malaha,Isla waqtigaasna wax calaamad shaqagab beerka ah majiraan(no signs of liver failure) Biyaha badan ee kujira beerka Wax daaweyn ah uma baahna (does not require treatment),Haddii kiisaska Qaar Lagu Arko calaamado soo muuqda oo Cadaadiska Biyahu ay Bateen Biyaha Ayaa Meesha Lasara iyadoo La adeegsanaayo Hagida **ultrasounka** iyo (fine needle aspiration)cirbadaha cabirkoodu yahay 0.6-0.7mm.



Fig. 10. Polycystic liver



Fig. 11. Polycystic liver

C. Gooryaanka biyaha Beerka(Hydatid hepatic cysts)

Waa biyo Gooryaameed uu sababay gooryaanka loo yaqaaan (*Echinococcus granulosus*),

Habka Gooryaanku u Galo Jirka Waa: Ukunta Gooryaanka oo si lama filaan ah Dadku u laqaan,taasi oo kusoo Gudubta Gacmaha oo wasaqaysan(dirty hands) iyo Cudaarta aan si fiican loo dhaqin (incompletely washed vegetables) kadibna Ukunta Gooryaanku waxay u gubtaa xiidmaha iyo xididdada waa weyn ee dhiigga sidaas ayeyna ku gaartaa beerka, Meesha Uguweyn ee Gooryaankaasi Dego waa Beerka boqol kiiba 60% kiiska la arkay(in approximately 60% of the cases).waxaana soo raaca Sanbabaha boqol kiiba 20%(approximately 20%). Gooryaanka Biyaha Beerka Wax calamat ah malahan laakiin Gooryaan Biyoodkaan wuxuu keeni karaa Dhibaatooyin aad udaran Sida xasaasiyad daran (anaphylactic shock) Biyihii Gooryaanka oo dilaaca(cyst rupture) kadibna gala Tubooyinka Beerka iyo xameetida sidaas ayeyna ku xiraan Tubooyinkaas waxaana kadhasha Midabka Jaalada Ah (jaundice).

Muuqaalka **Ultrasounka** ee biyaha gooryaanku keenay kala duwanaantoodu waxay ku xiran tahay inta biyahasi jireen,

Ultrasounka iyo Nuucyada Biyaha Gooryaanka: Marka La adeegsado Qalabka Ultrasoundka Biyaha Gooryaanka ee ku jira beerka waxaa loo kala qaybiyaa **5** Qaybood:

- A.** biyaha Gooryaanku Waxay u muuqdaan Madow(anechoic) marka la adeegsado aalada **Ultrasoundka** .
- B.** **Ultrasoundku** wuxuu muujiyaa in biyaha Gooryaanku Kabaxaan xuubka weyn ee gooryaanka.
- C.** biyaha gooryaanku way kala goo go an yihiin ayagoo leh muuqaalo kala duwan.
- D.** Nudaha Gooryaanku waxay u muuqdaan qaab kooladoo kale ah taasoo ay keentay Biyihii gooryaanka oo yaraaday kadibna Gooryaanadii waxay isku badaleen Adke(solid).
- E.** gooryaan Biyood yadii hore waxay isku badali jireen dhagax , **Ultrasoundku** wuxuu soo muujin jiray derbi gooryaan oo cad (hyperechoic), gooryaankaas oo qaybta gadaale ku sameeyey Hoos , Hooskaas waxaa loo yaqaaan "the shell sign".



Fig. 15. Hydatid cyst with detached proliferous membrane



Fig. 16. Hydatid matrix

D. Maal Kujirta Beerka (liver abscess).

Waa maal ku aruurtay Gudaha hoose ee beerka, Calaamadaha lagu arko bukaanka ay beerka malaxdu uga jirto waa Qandho iyo Jarays. Marka la isticmaalo **Ultrasoundka** caalamiga ah waxaa lagu arkaa wax kuusan oo madow waxaana laga yaaba in kuus kuus kaasi madow gadaal ku sameeyaan(posterior enhancement), Malaxda beerka kujirtaa ma wada saamayso Beerka oo dhan, Malaxda beerku waxay noqon kartaa mid badan (multiple), Mid isku xirxiran(communicating) iyo mid aan intaasba ahayn.

SonoVue waa Walax laga isticmaalo Xididka taasoo muujinaysa in sawirada **ultrasounku** si fiican u muuqdaan, Ultrasoundka waxaa lagu kala saaraa cudurada , markii lawaayo calaamad sax ah.

Ultrasounku Wuxuu Malaxda beerka kujirta ka saaraa ama kaduwaa Cudurada soo socda:Dhiig ka buuxsama Beeka (liver hematoma),Buro ku jirta Beerka(liver tumors),Nuuca 2aad ee gooryaan biyoodka beerka(type II hepatic hydatid cyst), Marka Larabo in lasoo saaro malaxda Ku jirta Beerka,Baaritaanka(the diagnostic) iyo Daawaynta(therapeutic) Waxaa haga Qalabka **Ulrasoundka**,kadib cirbad Ayaa lageliyaa Meesha Maashu ku jirto Wawaana Laga soo dhuuqaa Malaxda Kujirta Beerka,waxaa kaloo la isticmaali karaa Tubo Cabirkeedu yahay (3-5mm) taasoo la dhigaayo Hagitaanka **Ulrasounku** Hoostiisa Kadibna Waxaa Lasoo Qaadaa Malaxdii ku jirtey Beerka.



Fig. 20. Liver abscess



Fig. 21. Liver abscess

Cutubka 3aad.

**Abdominal ultrasound in the diagnosis of focal
liver lesions – solid lesions**

**Ultrasoundka uurjirta Waxaa Lagu Baaraa Nabraha Kuus
Kuusan Iyo Adkaha Kujira Beerka.**

Cutubkaan Waxaan uga Hadlaynaa Nabraha Adka Ah ee Beerka Kudhaca, Marka 1aad waxaan Baranaynaa Burroyinka aan Faafin(benign masses) iyo Burooyinka Faafa(malignant), Burooyinkaas Waxaa kala saara Qalabka **Ultrasounka**, Baaritaanka Ugu Dambeeya ee Cadka larabo in lagasoo jaro Beerka Waxaa lagu Hagaa **Ultrasoundka**(ultrasound guided).

1. Benign hepatic tumors(Burooyinka Beerka ee aan Faafin)

A. Hepatic hemangioma(Burada ku dhacda xididdada Beerka)

Waa xiddido si Qaldan U samaysmay oo asalkoodu ka yimid Koox tiiftaafyo ah iyo miiqaq kala duwan , waa Burada ugu caansan Burooyinkan aan faafi ee kudhaca Beerka Waxayna Noqon karaan 1Hal hal(single) Ama Kabadan(multiple),waxayna aad ugu badantahay Haweenka marka loo eego Ragga,(women than in men) (ratio 5:1) inta badan Burada ku dhacda xididdada beerka Guud ahaan wax calaamada malaha(asymptomatic), Wuxaana si joogta ah loogu baaraa **Ultasoundka**,Burooyinka ku dhaca Xididdada Dhiiga waxaa loo kala saaraa 2ba qaybood: **A.**Burooyin caadiga ah ee u dhaca xididdada dhiiga(“normal” hemangiomas) cabirkooduna yahay(5cm) **B.**Burooyinka aan caadiga ahayn(cavernous angiomas)ee kasamysmay xidido aan fiicnayn (cabirkooduna yahay5cm) waxayna can kuyihiiin Socodka dhiiga oo yaraada,90%kiisas lagu arko Burooyinka ku dhaca xididdada Beerka waxaa lagu xaqiijiya Kumbuyutarka uur ku jirta(**Ultrasoundka**),Muuqaalka kumbuyutarka uur kujirta(**ultrasound**)soo saaro waa Cadaan(hyperechoic).

Ultrasounku Wuxuu Burada ku dhacda xididdada Beerka ka saaraa ama kaduwaa Cudurada soo socda: **A.** kasnasarka ku faafa beerka (liver metastases) **B.** Burada aan fafin ee ku dhacda Beerka(hepatic adenoma).



Fig. 1. Typical hemangioma with imprinting of PV



Fig. 2. Typical hemangioma

b. Hepatic adenoma(Burada Beerka ee aan Faafin)

waa Burada aan faafin ee beerka kudhadca oo mar mar la arko, Asal ahaan waxay ka timaada Unugyada Beerka(hepatocytes) Ama tubooyinka beerka Beerka kasoo qaada Dheecaanka.

Buradaan aan faafin ee beerka ku dhacda 90% waxaa lagu arkaa Haweenka(women) isticmaala Dawooyin ilma kala dheeraynta(oral contraceptives),waxaan kadhasha dhibaatooyin ay ka mid yihiin Burbur ku dhaca Unugyada Beerka(necrosis),Dhiigbax lagu arko Gudaha Beerka(intrahepatic bleeding),Dhiig ku aruura Xuubka Sare ee uur kujirta(hemoperitoneum).



Fig. 8. Slightly hyperechoic hepatic adenoma



Fig. 9. Hypoechoic hepatic adenoma

Kumbuyutarka uur kujirta(**ultrasound**) si cad uma muujiyo Buradaan aan faafin ee beerka ku dhacda,marmarka qaan Ultrasounku wuxuu muujiyaa muqaal Cadaan Ah(hyperechoic),

C. Focal nodular hyperplasia FNH (Burada Kuusan ee Beerka)

Waa burada aan faafin ee ku dhacda beerka waana mida 2aad ee ugu badan Burooyinka ku dhaca Beerka Halka middii 1aad ay ahayd (Burada ku dhacda xididada Beerka), Bulshada 3% ayey ku dhacdaa Buradaani(3% of the population),waxayna kubadantahay Dumarka marka loo eego Ragga,4haweenaa markay ku dhacdo 1nin ayey kudhacdaa(more common in women than in men (ratio 4:1),Waxaana keena inay dumar ku badato daawooyin ilma kala dheeraynta oo waqtii dheer la isticmaalo(chronic oral contraceptives),Buradan kuusan ee beerka ku dhacda inta badan calaamado malahan(asymptomatic),Kumbuyutarka uur kujirtu(**ultrasound**)waxuu muujiyaa muuqaalo isku eg(isoechoic). Kiisaska kala gooya Qaadashada Daawada ilma kala dheeraynta(oral contraceptives) isla markaana Qaba Burada kuusan ee beerka waxa lagula socdaa Kumbuyutarka uur ku jirta (Ultrasound).



Fig. 12. FNH – isoechoic, inhomogeneous nodule



Fig. 13. FNH – hypoechoic nodule on a fatty liver

2. Malignant hepatic tumors(kansarka Beerka)

Kansarka ugu badan ee ku dhaca beerka waxaa kamid ah:

- A. kansarka aas aaska u ah burooyinka beerka(hepatocellular carcinoma)
- B. Kansarka ku dhaca tubooyinka beerka(cholangiocarcinoma)

c.Kansar bureedka ku faafa beerka(liver metastases)

Aadbay u adagtahay in go,aan lagu gaaro muuqaalka kumbuyutarka uur kujirta(**ultrasound**) kaliya,Hadii burooyinkaasi yihiin kuwa aan faafin iyo kuwa kansarka ah,Waa adagtahay in Kuumbuyutarka uur kujirta(**ultrasound**) lagu kala saaro burooyinka beerka ka dhasha iyo burooyinka meelaha kale ka yimaada.

A. kansarka aas aaska u ah burooyinka beerka (hepatocellular carcinoma HCC)

Waa kansarkii ugu horeeyey uguna badnaa ee kudhaca beerka ee 75-85%,kansarkaasi wuxuu kabilowdaa Unugyada beerka oo burburay,94% kiisaska lagu arkay ee kansarka aas aaska u ah beerka waxaa keena Burburka unugyada beerka,Mararka qaarna waxaa keena Cagaarshow daran oo waqtii dheer qofka soo hayey(chronic viral hepatitis),Cagaarshowga ay keentay alkolada waqtiga dheer la isticmaalayey(alcoholic hepatitis)Birta dhiiga oo badata(hemochromatosis)Hadii uu kordho Barootiinka beerka ee loo yaqaan(alpha fetoprotein (AFP)uuna Kabato(200-400 ng/ml)taasoo cadayn un ah inuu jiro kansarka aas aaska u ah Burooyinka Beerka,Muuqaalka kumbuyutarka uur kujirta(**ultrasoundka**) caalamiga ah ee lagu arko burada Aas aaska u ah burooyinka beerka kumbuyutarka uur kujitu (**ultrasound**) wuxuu soo muujiyaa midab mugdi ah(hypoechoic),midab cadaan ah(hyperechoic),Midab isku eg(isoechoic),Markii ay yartahay Burada aas aaska u ah Burooyinka Beerka kumbuyutarka uur kujirta (**ultrasound**)waxaa lagu arkaa midab madow(hypoechoic)haddii ay Buradaasi weyn tahay oo ay ka badan tahay 5-7cm beerku wuxuu u muuqdaa mid aan isku ekayn(inhomogeneous)waxaana sababay Burburka unugyada beerka iyo dhiigbox la socda,Dadka Qaba Burada aas aaska u ah Burooyinka Beerka 6billod oo kasta waxaa lagu baaraa Qalabka **ultrasoundka** ayadoo la raacinayo in la hubiyo dheecaanka beer ee loo yaqaan(alpha fetoprotein).



Fig. 21. Hypoechoic HCC



Fig. 22. Isoechoic, inhomogeneous HCC

B.Kansarka ku dhaca tubooyinka beerka(cholangiocarcinoma)

Waa buro ka bilaabata Xuubka Sare ee Tubooyinka Beerka waana Dhif dhif, Marka 15qof laga helo kansarka aas aaska u ah burooyinka beerka waxaa 1qof laga helaa burada ku dhacda tubooyinka beerka(the HCC/cholangiocarcinoma ratio is approximately 15:1.), Marka loo eego Meesha ay kutaal Buradaani waxaa loo qeybiyaa 3nuuc:

A. Kansarka geesaha tubooyinka(peripheral (cholangiolar carcinoma),**B.Kansarka Gudaha tubooyinka(hilar Klatskin tumor),C.Kansarka kudhaca tubooyinka kuyaal banaanka beerka(extrahepatic (choledocal tumor).**

A. Kansarka geesaha tubooyinka(peripheral (cholangiolar carcinoma),marka la adeegsado qalabka **ultrasoundku** wuxuu soo muujiyaa midabka burada oo madow ah(hypoechoic tumor)sida “bulls-eye tumor”.

B.Kasarka Gudaha tubooyinka(hilar Klatskin tumor) waa adagtahay in lagu ogaado kumbuyutarka uur kujirta(**ultrasound**) sababtoo ah waa buro aad u yar waxaana si fudud loogu arkaa(MRCP (magnetic resonance cholangiopancreatography) or ERCP (endoscopic retrograde cholangiopancreatography), kumbuyutarka uur kujirta(**Ultrasound**)laguma ogaan karo kansarka ku dhaca tubooyinka beerka,lkn wuxuu muujinkaraa Qayb kamida kansarkaas,waxaana lagu xaqiijiyaa(MRCP

(magnetic resonance cholangiopancreatography) or ERCP (endoscopic retrograde cholangiopancreatography).



Klatskin tumor with upstream dilatation of intrahepatic biliary ducts

C.Kansar bureedka ku faafa beerka(liver metastases)

Waa kansar Qatar Ah oo ku faafa beerka waana hal kansar ama in kabadan kuwaasoo ka yimaada xubnaha kale ee jirka,waxaana ka mida xubnaha uu ka yimaado: kansarka ka yimaada malawadka(colorectal cancer),Kansarka ka yimaada tubooyinka neef mareenka(small cell bronchial carcinoma),kansarka ka yimaada caloosha(gastric carcinoma),kansarka ka yimaada ganaca(pancreatic carcinoma),kansarka ka yimaada naasaha(breast carcinoma),kansarka ka yimaada kilyaha(renal tumors).kumbuyutarka uur ku jirta(**ultrasound**)waxaa lagu baaraa burooyinka looga shakisanyahay inay faafaan,kumbuyutarka uur kujirta(**ultrasound**)waxaa si joogta ah loogu baaraa Burooyinkaas,Qalabka **ultrasoundku** si cad uma muujiyo burooyinka faafa waxaana la arkaa humaag madow ah (hypoechoic) ama humaag cad(hyperechoic),dadka qaata dwoooyinka kansar(chemotherapy)waxaa lagu baaraa kumbuyutarka(**ultrasound**)caalamiga ah ayadoo lagu oganaayo unigyada kansarka ee burburay waxaana soo muuqanaaya humaag madow ah(hypoechoic or transonic).



Fig. 30. Hypoechoic metastases



Fig. 31. Hyperechoic metastasis

Cutubka 4aad.

Ultrasound of the gallbladder and biliary tree
(ultrasoundka xameetida iyo tubooyinka).

1. The gallbladder(Xameeti).

Xameetidu waa Meesha ugu badan oo ay ka cabtaan bukanada ka xanuunsan uur ku jirta,waana fududahay in lagu baaro ulrasoundka baaritaankana waxaa lagu sameeyaa dhinaca midig ee sararta hoosteeda waxaana loo sameeyaa qaab dadban iyo qaab toosan,marka lasamynaayo baaritaanka waxaa waajib ah in loo sameeyo si taxadar leh,si loo arko dhamaan xameetida,dhagaxa xameetida kujira waa mid dhaqdhaqaaq sameeya.

a) Normal gallbladder(Xameetida caadiga ah)

muuqaalka caadiga ah ee xameetida waa sida qaabka tufaaxa oo kale,dhexroorka caadiga ah ee xameetida wuxuu ka hooseeyaa 8/3cm,dhexroorka ugu sarreeyaana waa 10/4cm,dhumucda ugu sarraysana waa 4mm,waxaa muhiim ah in baaritaanka **ultrasoundka** ee xaameetida la sameeyo bukaanka oo aan 8saac wax cunin(fasting),hadii xameetida uu ka buuxo dheecaanka loo yaqaan Bileka,baaritaanka ultrasoundka waxaa si fiican loogu arkaa dhagaxa ku jira xameetida iyo dhaqdhaqaaqiisa.



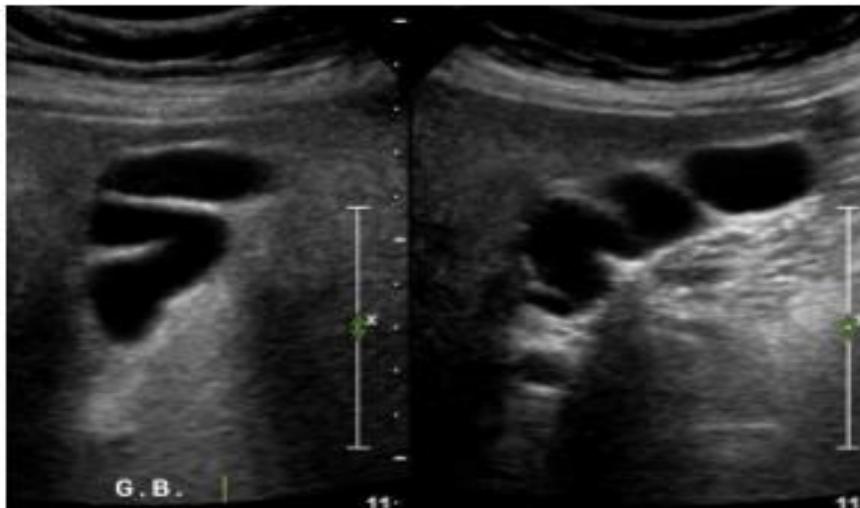
Fig. 1. Normal gallbladder



Fig. 2. Postprandial contracted gallbladder

b) „Malformations” of the gallbladder(xameetida oo si qaldan u samaysantay).

Xameetida oo si qaldan u samaysanta qas ahaan markii xameetidu u ekaato 2ba kish oo yar yar ama sida dhibcaha oo kale,Qof ka aan qibrada badan u lahayn isticmaalka



ultrasoundka isbadalkaas ku dhacay xameetida wuxuu u maleeyaa inuu jiro Cudur sababay is badalkas.

c) Gallbladder polyps(kuus ku dhagan xameetida)

kuus kuus yada yar yar ee ku dheggan xameetida waxay can ku yihiin oo laga helaa xuubka hoose ee xameetida,inta badan kuus yadaas waxaa sababa cholesterol, kuus kuus yadaas 5% waxaa lagu arkaa haweenka,6% waxaa lagu arkaa raga,kuus kuusyadaas yar yar ee ku dheggan xameetida waxaa lagu ogadaa **Ultrasoundka**,iyadoo bukaanku wax calaamada uusan lahayn(asymptomatic). **Cholesterol polyps** waa kuus kuusyo yar yar oo ay keeentay dufanka oo dhiigga ku bata waxayna u muuqdaan wax cad(hyperechoic) oo ku dhagan darbiga xameetida,dhexroor koodana yahay 5mm.



Fig. 6. Cholesterol polyps



Fig. 7. Cholesterol polyps

d) Biliary sludge(shuruuruxa tubooyinka)

shurruraxa tubooyinka waxaa sameeya dheecaan adag + calcium +cholesterol oo isku qasan,waxayna noqdaan bilowga hore in uu dhagax ku samaysmo xametida(gallstones). **Ultrasoundka** si caadi ah ayaa loogu arkaa shuruuraxa tubooyinka shuruuraxaasi wuxuu sameeya dhaq dhaqaaq laakiin Hoos maleh.



Fig. 8. Biliary sludge with horizontal level



Fig. 9. "Hepatization" of the gallbladder

e) Cholelithiasis(Dhagaxa xameetida)

waa dhagax ka samaysmay cholesterol/Dufan ama calcium oo ku jira xameetida, waa xaalad caam ah, oo laga helo 20% Bulshada,waxaana saamayn ku leh,Hida sida yaasha(genetic),Cayilka Badan(obesity) iyo Son korowga(diabetes). Dhamaan bukaanada dhagaxu ku jiro xameetida lagama wada saaro(cholecystectomy),dhagaxa aan wax caalamada lahayn waa in lala socdaa.**Ultasoundka** waxaa lagu arkaa dhagaxa ku jira Xameetida,ultrasoundka lasaaro uur kujirta(**Transabdominal ultrasound**) waa midka ugu fiican ee lagu arko midabka caddaan kaa(hyperechoic)iyo hooska gadale ee dhagaxa(posterior shadow),ultrasoundka waxaa lagu ogadaa in dhagaxa xameetida kun jira uu yahay 1dhagax(single) ama dhagxaan badan(multiple lithiasis).



Fig. 15. Single gallstone



Fig. 16. Three gallstones

f) Acute cholecystitis(caabuqa cusub ee xameetida)

Waa caabuq cusub oo ku dhaca wareega xameetida,waxa ugu badan ee sababa caabuqaas waa tubooyin oo dhagax ku samaysmay(biliary lithiasis),mararka qaarna



Fig. 21, 22. Acute cholecystitis – thickened and duplicated gallbladder wall

waxaa keena caabuqa cusub ee xameetida bacteriada ay ka mid yihiin, salmonella ,E.coli,streptococcus. Sidoo kale mararka qaar waxaa keeni kara Xididada dhiiga oo xirma. Baaritaanka caabuqa cusub ee xameetida waxaa kaa caawinaaya wax yaabaha soo socda,Bukaanka oo xanuun badan ka dareema dhinaca midig ee hoose,Qandho iyo jarays. Baaritaanka xanuunka waxaa la isticmaalaa Taabasho(palpation) dhinaca midig ee hoose waxaana loo yaqaan (Murphy's sign), muu qaalka **ultrasoundka** ee caabuqa cusub ee xameetida waa adkaan shaha wareega xameetida,cabirkha caadiga ah ee xameetidu waa 4mm,laakin caabuqa cusub ee xameetida waxaa barar lagu arkaa wareega xameetida cabirkiisuna waa 10mm,wareega xameetida oo waynaada waxaa loo yaqaan “sandwich”.

g) **Chronic cholecystitis(Caabuqa daahay ee xameetida)** waxaa loo yaqaan wareega xameetida oo dhagax kujirey waqtii dheer,muuqaalka **ultrasoundka** waxa lagu arka wareega xametida oo adkaada cabirkeeduna ka bato 4mm,waxanautrasoundka lagu arkaa midab cadaan ah.

h) **Gallbladder carcinoma(kansarka xameetida).**



Fig. 25. Chronic lithiasic cholecystitis: thick, hyperechoic gallbladder wall

Waa cudur ku dhaca dad badan oo horay u qabay dhagaxa xameetida,cudurkaani wuxuu ku badanyahay dadka dadoodu tahay 70 ka sano,nasiib daro kansarkaan waxaa la ogaadaa waqtii dambe,mararka qaar koodna waxaa si kedis ah loogu ogaadaa **ultrasoundka** marka laga shakiyo kansarka waa in cabirka xameetidu ka waynaadaa 20mm marka lagu cabiro gudbiyaha ultrasoundka.



Fig. 29. Advances gallbladder carcinoma, with invasion of the adjacent liver.
Ultrasound aspect of a hypoechoic area centered by a calculus.



Fig. 30. Advanced gallbladder carcinoma.
Hypoechoic mass centered by a calculus.
Carcinomatous ascites (top right)

2. Ultrasound of the biliary tree(ultrasoundka Tubooyinka)

a) Normal aspects(muuqaalka caadigaa).

the main biliary duct (MBD) waxaa lagu baaraa ayadoo lasamaynaayo cabirka tubooyinka ee caadiga ah kaas oo ah 5-6mm.

a) Obstructive jaundice with high level obstruction(Tubooyin oo xirma).

Tubooyinka ugu badan ee xirma waa inay ku balaartan beerka dhexdiisa,waana la arki karaa in ay tahay qayb kamid ah beerka ama beerka oo dhan waxa ugu badan ee keena xirnaa shaha tubooyinka waa Kansarka ku dhaca Xameetida ama Beerka,**ultrasoundka** la saaro Tubooyinka ku dhex jira beerka wuxu muujiyaa Midab cadaan ah(hyperechoic).

Cutubka 5aad

Ultrasound of the kidneys (ultrasoundka Kilyaha)



Fig. 31. Dilated intrahepatic bile ducts – "spider-like" appearance

1. Normal kidneys(kaliyaha caadigaa)

Waqtiga hadda la joogo **ultrasoundka** ayaa ah habka loo isticmaalo baaritaanka kaliyaha,qalabka lagu arko habdhiska kaadi mareenka(Intravenous urography) waa midka ugu badan ee loo isticmaalo baaritaanka shaqada kaliyaha. Kilyuhu waxay ku yaalaan qaybta dambe ee darbiga uur ku jirta,cabirkooduna wuxuu gaaraa dheer ahaan 10-12cm,ballacooduna waa 5-6cm,qotodooduna waa3cm,baaritaanka ultrasoundka ee kaliyaha waxaa lagu sameeyaa gudbiyaha tiradiisu taahy 3.5MHZ.kelida midig iyo kalida bidix waxaa si fiican looga arki karaa dhinacyada,**ultrasoundka** caadigaa ee habdhiska kelyaha waxa lagu qimeyaa qaybta sare ee kaliyaha.sida caadiga ah qaybta sare waa cadan.



Fig. 1. Normal aspect of the kidney

Cabirka kaliyaha waxaa si fiican loogu isticmaalaa qaar ka mid ah cudurada kaliyaha,cabirka kaliyuhu waxay la yaraadaan da,da (renal senescence) ama cudurada waqtiga dheer hayey kaliyaha,kilyuhu waxay waynadaan markii cudur cusub ku dhaco sida son korowga(diabetes mellitus).

2. Kidney malformations(kaliya oo si qaldan u samysantay).

a) Congenital single kidney(hal killi oo lagu dhasho)

cudurkani waa dhif dhif,Baaritaanka ultrasoundku wuxuu na tusiyaa hal kili,inta badan halka kali waa mid wayn,cabirkeeduna waa 12cm,Qalabka lagu arko hab dhiska kaadi mareenka (intravenous urography),ayaa lagu xaqijiyyaa inay maqan taahy hal keli.

b) Unilateral small kidney(Hal keli oo yar)

waxaa laga yaabaa inay tahay xanuun lagu dhasho,**ultrasoundka** ayaa lagu xaqiijiyaa dhex roorka kelida inuu ka wayn yahay 2cm,yaraanshaha kelida waxaa laga yaabaa inay keentay caabuq waqtii dheer kelida hayey.

3. Renal cysts(kelida oo biyo kusan kun jiraan).

a) Simple renal cysts(kuus biyoodka fudud ee keliyaha)

si guud waxa sababa lama yaqaan,laakiin waxaa laga yaabaa in ay la xariiraan da,ada waxayna ka yimaadaan qaybta sare ee kelida,biyaha kuusan ee kalida ku jira waxay noqon karaan hal(single) ama wax kabadan(multiple) markay hal yihii cabirkoodu waa 1cm,makay badan yihii cabirkoodu waa 10cm,xaladani madarna umana baahna daawayn ama qaliin,keliyaha waxaa loo baahan yahay in si joogta ah loo saaro **ultrasoundka**, lamana socdo dhabar xanuun,waxa ugu badan ee sababa waa(rheumatic).



Fig. 7. Parapelic renal cyst



Fig. 8. Cortical renal cyst

b) Polycystic kidney(kuus biyoodka Badan ee keliyaha)

cudurkaani wuxuu ku yimaadaa dhaxal,waxaana lagu yaqaan 2da keliyood oo kuus biyoodyo badan ay galaan taasoo keenta in keliyuhu weynaan kuus biyoodyada badan mar kasta waxay saameeyaa 2da keliyood, rejeda xanuunkaan ku dhacay 2da keliyood hadii ay noqoto in keliyuhu shaqadooda gabaan Bukaanaku wuxuu u baahan yahay In laga miiro dhiiga kunjira kaliyaha(hemodialysis),hadii qofka lagu sameeyo baaritaan lagana helo xanuunka keliyaha carurtiisa waa in loo sameeyaa baaritaan **ultrasound**, muuqaalka **ultrasoundka** waxaa lagu ogadaa Kuusbiyood yada badan ee

keliyaha,sido kale ultrasoundka waxa lagu arkaa muu qaal u eg sida miraha canabka(grape clusters) Kuus biyoodyada badan ee keliyaha waxaa laga yaaba inu keeno dhagax kalida ku jira.

c) Medullar cystic kidney disease(cudurka kuus biyoodka qaybta hoose ee Kelida)

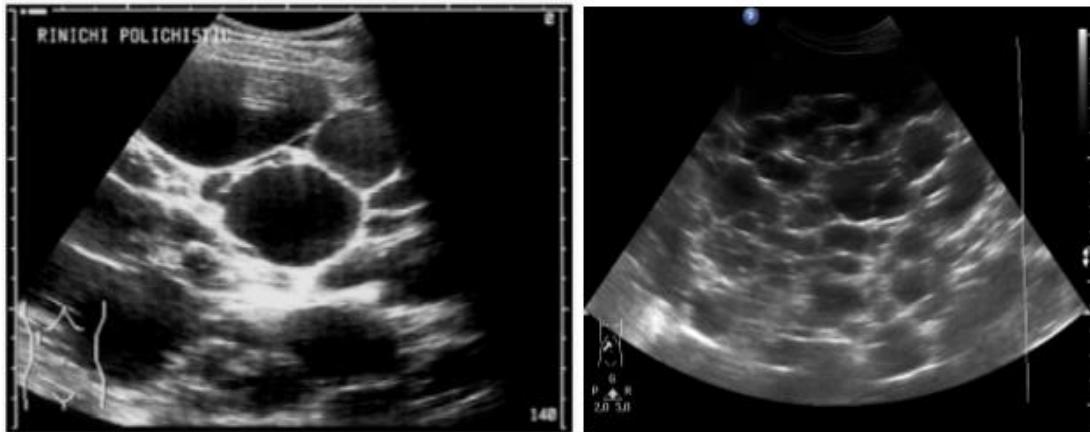


Fig. 11, Fig. 12. Polycystic kidney

wuxuu caan ku yahay kuus biyoodyo badan oo lagu arko keliyaha iyo Tubooyinka soo aruursha kaadida oo balaarta, waxa keena cudurkaan lama yaqaan,wuxuuna ku dhacaa 2da keliyood ee dadka waa weyn,shaqada keliyuhuna waa caadi, Muuqaalka **ultrasoundka** waxaa lagu arkaa meelo badan oo mad madow.

4. Renal lithiasis (kidney stones)(Dhagaxa kalida)

Definition/Qeexitan: waa in wax adag ku samaysmaan tubooyinka keliyaha iyo kaadi mareenka,**Dhagaxa** kelida wuxuu kasamaysan yahay wax yaabaha soo socda: **calcium oxalate, calcium phosphate, ammoniummagnesium phosphate, uric acid or cysteine**. Samaysanka dhagaxa kelida waxaa saamayn ku leh Qoyska,cusbo inay ka buuxsanto kaadi mareenka(urinary salt concentration),isbadal ku yimaada aashitada kaadimareenka(change of urinary pH),caabuq ku dhaca kaadi mareenka(urinary infections). Calaamadaha lagu yaqaan dhagaxa kelida kujira waxaa ka mid ah xanuun daran oo bukaanka ka qabta dhabarka kadibna ku faafa miskaha, bukaanka oo maalintii in badan kaadiya,kaadida oo gubta,dhiig soo raaca kaadida(hematuria) iyo caabuq kusoo laa laabta habdhiska kaadi mareenka. Kiisaska qaarkood oo qaba dhaxa kalida wax calaamat ahn malaha(asymptomatic) laakiin baaritaan **Ultrasoundka** ayaa si

kadisa loogu ogadaa dhagaxa kelida. Kiisas dhif ah waxaa lagu arkaa inaysan kaadin(anuria). Muuqaalka **ultrasoundka** wuxuu sheegaa in dhagaxa kun jira kelida



Fig. 14, Fig. 15. Kidney stone: hyperechoic image with posterior shadowing

uu yahay cadaan(hyperechoic), dhagaxasi qaypta gadaale wuxu ka bixiyaa hoos(posterior shadow),baaritaanka **ultrasoundka** waxaa lagu qiimeeyaa cabirka dhagaxa kelida ku jira, hadii dhaguxu ka yaryahay 5-7mm waxaa lagu saaraa biyo badan oo lacabo,haduu dhagaxu weyn yahay waxaa lagu daaweyyaa Qalabka lagu bur buriyo dhagaxa kelida oo loo yaqaan(lithotripsy).



Fig. 24. Hypoechoic renal tumor



Fig. 25. Isoechoic renal tumor

5. Hydronephrosis(kaadida oo ku laabatay kelida)



Fig. 18. Mild hydronephrosis



Fig. 19. Moderate hydronephrosis



Fig. 20. Severe hydronephrosis with dilated ureter

Definition/Qeexitan: waa tubooyinka kaadi mareenka oo balaartay(Godadka yaryar ee kaadidu marto((calyx), Tubooyinka sare oo weynaaday(renal pelvis) iyo inay xirantay qeyb kamida kelida(pyelo-ureteral junction). Wuxuu ugu weyn ee sababa inay kaadidu ku laabato kalida waa, Dhagax kalida gala(renal lithiasis), Burada kelida(renal tumors),Burada borostaatda(prostate adenoma),Dhiiga oo xinjirooba(blood clot),Kalida oo ay xiraan kuusn biyoodyo(obstructive renal cyst). Inay xirmaan tubooyinka kelidu waxaa ugu wacan cadaadis xoog leh oo saaran tuboozin.muuqaalka **ultrasoundka** waxaa lagu arkaa midab madow,kaadida oo ku laabata kelida waxaa loo qaybiyaa 3. **A.** kaadida ku laabatay kalida oo yar (mild), **B.** kaadida ku laabatay kelida oo dhex dhedaad ah(moderate), **C.**kaadida ku laabatay kelida oo badan(severe).

6. Renal tumors(Burooyinka keliyaha).

a) Malignant tumors(Kansarka kalida)

Kansarka keliyahu wuxu ka yimaadaa unugyada tubooyinka keliyaha. Wuxuuna 3% ka yahay kanasarka ku dhaca xubnaha gudaha, markii uu ku dhaco 3 nin waxa laga hela 1 dumar ah. Wuxuna ku badan yahay dadka da dodu u dhaxayso 50-70 sano. Calamadaha lagu yaqan kansarka keliyaha waxaa kamid ah. Kadida oo dhiig soo raaco(hematuria), dhabar xanuun, iyo buro kuusan oo lataban karo(palpation of a tumor mass). Buradu waxay gashaa xiddidada kadibna waxay samaysaa xin jirow.markaasna waxay ku fafata sanbabaha,lafaha,iyo berka. Muqalka **ultrasoundka** ee burada kelida wa madow(hypoechoic),ultrasoundka waxaa lagu ogada cabirka buradan wana (10 cm).baritanka **ultrasoundka** ee buradan waxa lagu qimeyaa in buradu gashay xidadadakaliyaha & wadnaha.

b) Benign renal tumors(burada aan faafin ee kelida).

Buradaan aan faafin ee ku dhacada kelida waxay ka koobantahay Nude jilicsan,Muruq xargeed siman iyo xiddidada dhiiga,muuqaalka **ultrasoundka** waxaa lagu ogaadaa midab cadaan ah iyo kuus cabirkisu yahay 3cm.

6. Renal hematoma(Dhiig ku jira Keliyaha)

Bukaanadu jugtu uga dhacday Dhanka dambe ee dhabarka,shil hagalo ama ha kufo waxaa loo tix galiyaa in kelidooda dhiig galay. Bukaanadaas waxaa laga yaabaa inuu ku yimaado dhiigbax daran oo gudaha jirka ah(severe internal bleeding),bukaanadaas waxay xanuun ka dareemaan dhinaca saracda markii la taabto,Calaamada ugu weyn oo la arkaa waa kaadida oo dhiig la socdo(hematuria). **Ultrasoundka** ayaa loo isticmaalaa in lagu qiimeeyo bukaanada dhiigu uga jiro kelida,sababtoo ah ultrasoundku qaali ma ahan,waana lagu celcelin karaa,wax shoocaac ahna



Fig. 29. Subcapsular hematoma - hypoechoic subcapsular "eyebrow"
malahan.muuqaalka ultrasoundka waxaa lagu arkaa in Dhiiga keliyaha ku jira uu
yahay madow(hypoechoic).

7. Renal failure(Kalida oo aan si wanagsan u shaynayn).

Definition/Qeexitan: kelida oo awoodi weyda inay saarto sunta iyo qashinka ka yimaadoa dhiga. Shaqada kalida oo yaraata waxaa loo qeybiyaa 2, **A.**xanuunka keliyaha ee cusub(Acute renal failure (ARF) iyo **B.** xanuunka keliyaha ee soo daahay(Chronic renal failure (CRF). Waxyabaha lagu yaqaano in kelidu shaqadeedii gabtay waxaa kamid ah-In ay bataan dheecaanada loo yqaaan(urea and creatinine),**ultrasoundka** waxa lagu kala saaraa xanuunka keliyaha ee cusub (ARF) iyo xanuunka keliyaha ee soo daahay (CRF),(ARF) xanunka keliyaha ee cusub markii la saaro ultrasoundka kalidu waa weyntahay cabirkeeduna waa 12cm waxaana **ultrasoundka** lagu arkaa midab

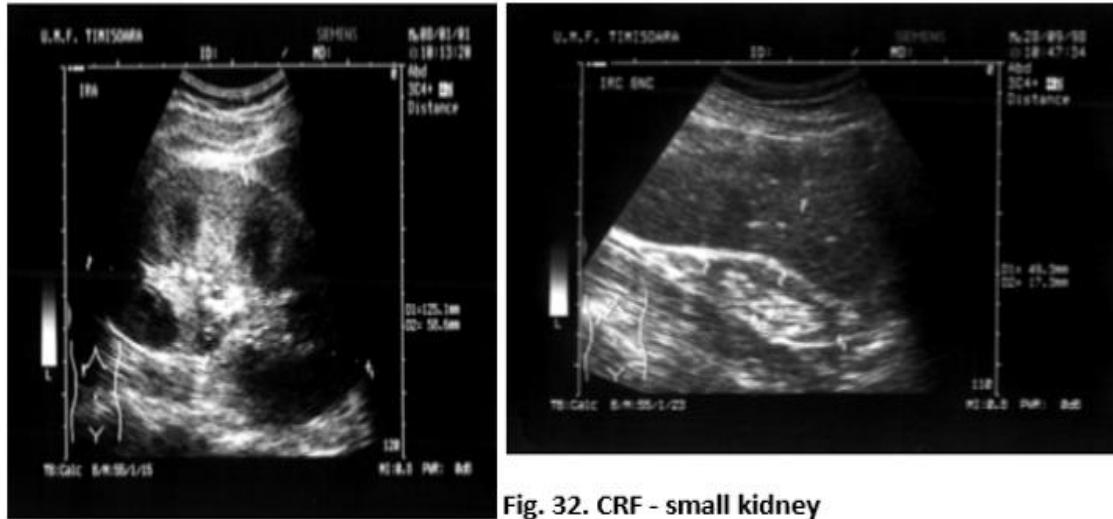


Fig. 32. CRF - small kidney

Fig. 30, Large kidney with thick cortex, ARF

madow ah,madowgaas waxaa keenay Barar ku jira kelida. Halka markii **ultrasoundka** loo isticmaalo xanunka kelida ee soo daahay (CRF)ultrasoundk awaxaa lagu arkaa kelida oo yaraatay.

THE ADRENAL GLANDS(Qanjiro kuyaala qayta sare ee 2da kaliyood).

waa qanjir leh qaab seddex xagal ah waxuuna ku yaalaa qaybta dambe ee darbiga uur ku jirta,wuxuuna ku dhex jiraa baruurta qeybata sare ee kaliyaha,Qnjirka midig (right adrenal gland) waxaa laga helaa inta u dhaxaysa kelida midig iyo qaybta midig ee beerka,Qanjirka bidix(left adrenal gland) waxaa laga helaa inta u dhaxaysa qaybta sare ee kelida bidix iyo Halbowlaho weyn ee wadnaha. **Ultrasoundka** in lagu arko qanjirka caadiga ah ee kor saaran kelida guud ahaan waa adagtayah. **Ultrasoundka** si fudud ayaa loo gu arkaa qanjirka midig sababtoo ah beerka ayuu xiriir la lee yahay. **Adrenal tumors**(Burooyinka kun dhaca qanjirka kuyaal qaybta sare ee kaliyaha) Burooyinkasi waxaa loo kala qaybiyaa kuwo asaga ka yimid(primary) iyo kuwo meelo kale ka yimid(secondary),**ultrasoundka** waxaa lagu arkaa midab madow(hypoechoic) oo kuusan oo laga helo qanjirka dhexdiisa,Burooyinkaasi waxa ay u muqdaan kuwo aan isku ekayn(inhomogeneous) cabirkha buro yinkas wuxu garaya 6cm.



Fig. 34. Hypoechoic left adrenal gland tumor.



Fig. 35. Inhomogeneous right adrenal gland

Cutubka 6aad

Ultrasound in obstetric and Gynecology

**(ultrasoundka Hooyada uurka leh iyo hooyada aan
uurka lahayn)**

Hordhac

Ultrasoundka la saaro hooyada uurka leh iyo hooyada aan uurka lahayn wuxuu saamayn xoogleh ku leeyahay Daryeelka bukaanka iyadoo sawiro laga qaadayo uurjiifka iyo mandheerta hooyada uurka leh iyo sidoo kalana waxaa lagu baaraa xubnaha gudaha ah ee hooyada aan uurka lahayn.

ULTRASOUND IN THE FIRST TRIMESTER

Ultrasoundka sedexda bilood ee ugu horeeya Hooyada uurka leh

Sedexda bilood ee ugu horeeya **ultrasounka** waxaa lagu qiimeeyaa,uurku Meesha uu kuyaal,sida ugu wanaagsan ee Kumbuyuutarka uur kujirta(**ultrasoundka**)loogu baaro sedexda bilood ee ugu horaysa ee hooyada uurka leh,**ultrasounku** wuxuu muhiim u yahay in la xaqijiyo in uur jiifku kujira minka(intrauterine gestation),inta cunug ee kujirta minka iyo inta bilood ee cunugu ku jiray uurka(date in pregnancy).

Ujeedada ugu wayn ee loo sameeyo Baaritaanka ultrasounka 3da bilood ee ugu horaysa ee hooyada uurka leh waa:

- A. xaqijiinta uurka(confirmation of pregnancy).
- B. uurku inuu ku samaysmay ilma galeenka(intrauterine localization).
- C. inla hubiyo dhaqdhaqaqa wadnaha cunuga uur jiifka ah(Cardiac activity in embryo).
- D. in labaaro calaamada sheegaysa in uurkii waqtii hore Fashilmay(early pregnancy Failure)
- E. uur jiifku inuu yahay hal cunug ama kabadan(single or Multiple pregnancy).
- F. in la qiimeeyo uurku inta bilood uu yahay (pregnancy Dating).
- G. in laqiimeeyo cunuga uurka kujira inuu caadi yahay asbuuca 10 naad kahor(before 10 weeks).
- H. in la qimeyox xubnaha aas aasiga ah ee cunuga uurka kujira asbuuca 11nad kadib(After 11 week)

TRANSVAGINAL ULTRASOUND EXAMINATION IN THE FIRST TRIMESTER

Ultrasounka makaanka lagaliyo ayaa lagu baaraa uurka 3bilood ee ugu harayda

Transvaginal Ultrasoundka ayaa lagu baaraa 3da bilood ee ugu horaysa uurka waxaan lagaliyaa makaanka,gudbiyaha lagaliyo makaanka(transvaginal transducers)waxa la dhigaa minka si loogu arko cunuga uurka kujira iyo xubnaha miskaha,Marka la is Barbar dhigo ultrasounka makaanka lagaliyo(transvaginally) iyo ultrasounka uur kujirta la saaro(abdominal transducers),utrasounka makaanka lagaliyo wuxuu ku kooban yaahay si qoto dheerna(details) loogu arkaa laguna aqoonsadaa xubnaha uur jiifka,Haweenku waa u dulqaadan karaan ultrasounka makaanka(**transvaginal ultrasound**) markii loo geliyo si tartiib ah(inserted gently).



Figure 4.1: Transvaginal ultrasound of a fetus at 12 weeks' gestation in a midsagittal orientation. Note the high level of resolution, which allows for clear depiction of fetal anatomic structures (labeled).

STEPS FOR THE PERFORMANCE OF THE TRANSVAGINAL ULTRASOUND EXAMINATION

Tilaabooyinka la qaado marka baaritaanka loo adeegsanaayo Ultrasounka makanka lageliyo.

- A.** Qofka Bukaanka ah waa in afka(oral) looga sheego in lagubaaray ultrasounka makaanka la geliyo(**transvaginal ultrasound**).
- B.** Bukaanku waa inuu banneeyaa kaadi haystiisa loona jiifiyaa dhabarka baridiisana kor loogu qaadayo barkin lagaliyo.
- C.** waa in bukaanka lagu daboolaa maro si loogu asturo jirkiisa,Hadii ay Macquul tahay waxaa lagu taliyaa in Qof 3xaad uu xaadir kuyihay Qolka.
- D.** Waa in lahubyiaa Nadaafada Ultrasounka makaanka lagaliyo, iyadoo la raacayo Habka caalamiga ah, laguna xiraayo mishin waana in ladamiyaa mishinkaas intaan labilaabin baaritaanka Kahor.
- E.** Waxaa lamariyaa Gel gudbiyaha ultrasounka makaanka la galiyo waxaana lagu daboolaa Condom Ama Latex Glove halmar la isticmaalayo(Single-use) kadibna markale ayaa gel lamariyaa Condomka korkiisa waana in xumbo laga ilaaliyaa condomka Hoostiisa.
- F.** si tartiib ah ayaa loogaliyaa gudbiyaha ultrasounka makaanka waxaana loo leexiyaa xaga hoose ee malawadka inta lagu gudajiro waqtiga galinta makaanka,xanuuku waa yaraadaa.
- G.** Lahadal Bukaanka una sharax waxa aad samaynayso , hadii Meesha xanuun ka hayo. Bilowga baaritaanka waxaa loo sameeyaa si guud,waxaana la arkaa minka Meesha uu ku yaal,cabirkiiisa,Qaabkiisa,waxa kujira(uterus position , Size , Shape iyo sidoo kale xubnaha u dhow sida Ugxaansidaha Midig iyi bidix iyo kaadi haysta(blader).

INDICATIONS FOR THE ULTRASOUND EXAMINATION IN THE FIRST TRIMESTER.

Waxyaabaha natusaaya in baaritaan ultrasound lasameeyo 3da biilood ee ugu horeeya uurka.

Waxaa kamida:

- A.** caado wareer(Amenorrhea).
- B.** Mindhicir xanuun/Miska xanuun(Pelvic pain).
- C.**Dhiig ka yimaada Makaanka(Vaginal Bleeding).
- D.** Waqtiga caadada oo aan la aqoon(Unknown Menstrual Dates).
- E.** Minka oo kaweynada ama kayarada bilihi loogu talagalay(Uterus Greater/smaller than Dates).

Gestational Sac/Chorionic cavity (Waa Godwayn oo biyo ku jiraan oo ku wareegsan Uur jiifka)

Waa waxa 1aad ee kumbuyutarka uur kujirta (**ultrasound**) lagu ogaado marka uurku Bilow yahay,Meesha 1aad ee lagu arko waa lakabka ugu hooseeya ee minka(Endometrium)lagumana Qaldo Dhiiga ka buuxsama minka(accumulation (blood),**ultrasounka** lagaliyo makaanka(transvaginal ultrasound)wuxuu sheegaa maalmayar kadib markii caadada lawaayo in uu jiro Godweyn oo biyo ku jiraan ee ku wareegsan uur jiifka,Marka ugu horaysa ee la arki karo waa 4-4.5 asbuuc aya doo laga soo bilaabayo maalintii 1aad ee caadadii ugu dambaysay (first day of the last menstrual period (LMP).Waqtiga 1aad ee godkaasi soo muuqanaayo waa adagtahay in lagu ogaado **Ultrasoundka** laakiin waxaa jira koritaan deg deg ah oo gaaraya 1mm maalintii, markii godkaasi gaaro 2-4mm waxaa soo muuqanaaya midab cadaan ah (echogenic)wareega midabka cadaanka ah ee godka waa calaamad muhiim u ah **ultrasoundka**, taasoo kaa caawinaysa inuu kuu kala saarto biyaha godka ku jira iyo dhiiga Meesha ku jira,Marka 1aad waxaa soo muuqanaaya god wareegsan kadibna(yolk sac and the embryo),Godkaas waxaa lagu cabiraa(mean sac diameter (MSD),ayadoo ultrasoundka loo saarayo qaab toosan iyo qaab dadban(sagittal and coronal

planes). hadii dhexoorku kawaynyahay ama la egyahay (≥ 25 mm with no embryo) ilmo ma jiraan.

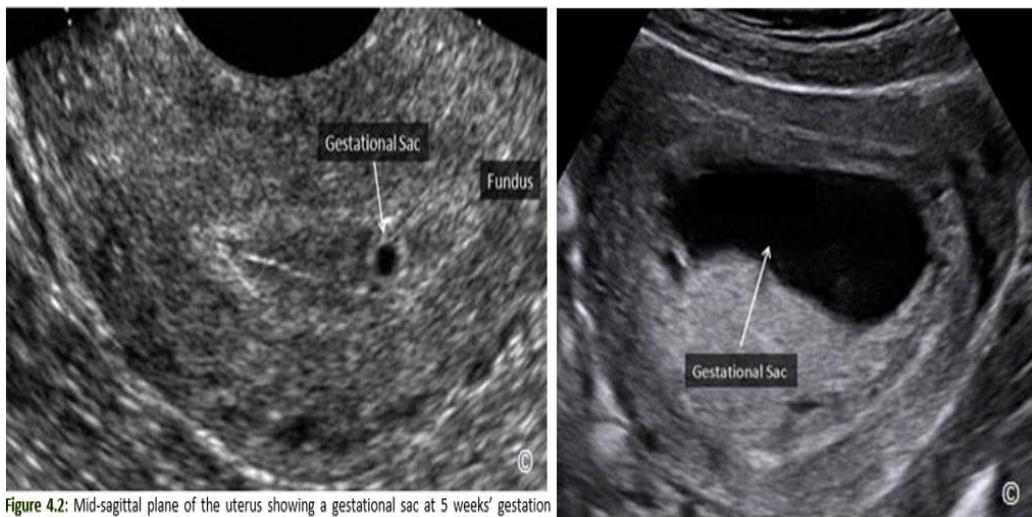


Figure 4.2: Mid-sagittal plane of the uterus showing a gestational sac at 5 weeks' gestation (labeled). Note the paracentric location of this gestational sac within the decidua. The uterine fundus is labeled for orientation.

Figure 4.6: A large gestational sac (MSD > 25 mm) with no embryo seen. This is diagnostic of a failed pregnancy.

Yolk Sac(xuub ku dhagan uur jiifka)

Waa xuub ku dhagan uur jiifka waxaana la arkaa asbuuca 5naad ee uurka waxaana lagu ogaadaa **ultrasoundka** makaanka lagaliyo(**transvaginal ultrasound**), waxaana la arkaa cadaan yar(echogenic) oo wareegsan cabirkisuna wuxuu u koraa si tartiib tartiib ah(increases slowly), dhex roorkiisuna wuxuu gaaraa 2mm 6dii asbuuba, 6mm ayuu siyaadaa 12asbuucba, marka 1aad uur jiifka waxaa lagu baaraa kumbuyutarka uur kujirta(**ultrasound**), waxaana la arkaa xuub ku dhagan uurjiifka intaas kadib, xuubku wuxuu ku dhaganyahay uur jiifka waxaana ku dhajiya tubada loo yaqaan(vitelline duct) Xuubka yar ee dhex rorkiisu ka yaryahay 3mm una dhexeeya 6-10 asbuuc ama dhex roorkiisu ka badanyahay 7mm kahor asbuuca 9aad waxaa looga shakiyaa in uu san caadi ahayn uur kaasi(abnormal pregnancy) uur kaas waxaa lagu la socdaabaaritaanka **ultrasoundka**.



Figure 4.7: A mid-sagittal plane of a uterus with a gestational sac at 5.5 weeks' gestation. Note the yolk sac seen within the gestational sac (labeled) with highly echogenic borders.

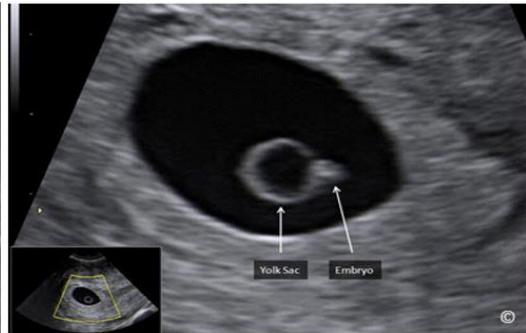
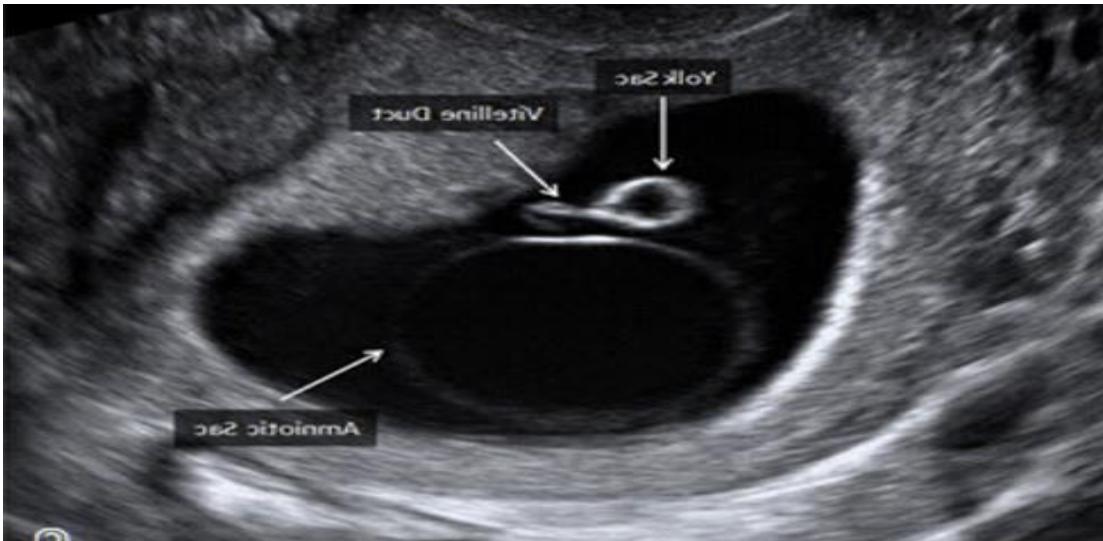


Figure 4.8: Gestational sac at 6 weeks. Note the location of the embryo (labeled) in close proximity to the free wall of the yolk sac (labeled). The embryo is attached to the yolk sac by the vitelline duct (not seen). The yolk sac and the embryo give the appearance of a diamond engagement ring at this gestation.

Amnion(xuubka sameya biyaha ku wareegsan uur jiifka). Waa biyo ku jira minka oo uu ku koro uurjiifku inta u dhaxayda asbuuca 6aad-10aad.



Embryo(uur jiif)

Waa waqtiga ugu horeeya ee nooluhu kusamaysmaayo minka hooyada,marka 1aad waxaa lagu baraa **ultrasoundka** makaanka lagaliyo(transvaginal ultrasound),dhaqdhqaqaqa ugu horeeya ee wadnaha waxaa la arkaa asbuuca 6aad(First cardiac activity),uur jiifka waxaa si fiican loogu xaqijiyyaa ulrasoundka makaanka lagaliyo(transvaginal ultrasound),dhirirk ka cabirk ka uurjiifka oo gaara 2-3mm, Dhaqdhqaqaqa wadnaha waxaa si fiican loo arkaa cabirk ka dhirirk ka uu jiifku(**Embryo**)marka uu gaaro ama ka bato 5-7mm,garaaca wadnuhu wuxuu u siyaadaa si Dhaqsi ah,Bilowga hore ee uurka wuxuu gaaraa 100-115 kahor asbuuca 6aad,kor ayuu u kacaa wuxuuna gaaraa 145-170 asbuuca 8aad,hoos ayuu u dhacaa

wuxuuna gaaraa 137-144 kadib asbuuca 9aad ee uurka(pregnancy). cabirka uurjiiku si dhaqsi ah ayuu u siyaadaa qiyaastii 1mm maalin kasta dhirir ahaan (1mm per day in length),cabirka dhirirka uur jiifkaas waxaa loo tixraacaa(Crown-Rump-Length (CRL), waxaana loo qoraa millimeters,lagsoo bilaabo madaxa ilaa qeypta dambe ee uu ku dhamaado jirka uurjiifku waa qeymaynta ugu saxan een bilaha uurka(pregnancy dating),ogow uur jiifku wuxuu ku koraa godka biyaha(amniotic cavity)waxaa loo yaqaan xabka dhexdiisa(intraamniotic),halka xuubka ku dhagan (yolk sac)uurjiifka uu banaanka ka yahay godka biyaha(amniotic cavity)waxaana loo yaqaan banaanka xabka(extraamniotic),muuqaalka uurjiifka mar lagu baarayo qalabka **ultrasounka** waa is badalaa lagasoo bilaabo asbuuca 6aad-12aad ee uurka,muuqaalka uurjiifku wuxuu u muuqdaa Dhululubo(cylinder).



Figure 4.11: Transvaginal ultrasound of a gestational sac with an embryo (labeled) measuring 1.8 mm in size. Note the proximal location of the yolk sac (not labeled) to the embryo.



Figure 4.13: Gestational sac with an embryo at 8 weeks. Note the appearance of body curvature of the embryo (labeled), resembling a gummy bear in shape. The yolk sac is also labeled.

Go t

Major fetal malformation that can be diagnosed in early Gestation

Waxyaba ugu waa weyn ee uur jiifka sida qaldan usamaysmay waxaa labaaraa xiliga hore ee uurka waxana kamid ah:

- A. qayb maskaxda kamid ah oo aan samysmin(Anencephaly)
- B.Shaqagab maskaxda(Alobar)
- C. cillad ku timaada xangulaha iyo maskaxda (Pentalogy).
- D. uur kujirta oo furnaansho samayda(Gastroschisis).

E. cillad ku timaada uur kujirta uurjifka(Large Omphalocele)

F. cunugga oo ku dhalan doona jiro daran(Limb body wall complex).

G. Waa biyo kabuxsamay Godka ku wasoo ay kentay Tuboyinka qanjirada oo xiran(Cystic Hygroma).

H. inaysan si fiican u samaysmin lugaha ama gacmaha(Gross limb defect).

I. Biyo ku jira uur kujirta,Wadnaha,Sanbaha(Frank Hydros).

PREGNANCY DATING IN THE FIRST TRIMESTER

Sedexda Bilood ee ugu Horaysa Wqatiga uurka

Waa in laxisaabiyo xilga uurka 3da bilood ee ugu haraysa.

Waa Mid kamid kuwa ugu muhiimsan ee ultrasounka lasaaro uurayda 3da bilood eee ugu horaysa,waa in la xisaabiyo waqtiga uurka ayadoo la isticmaalayo cabri yar yar oo fudud: 1) Crown-Rump Length (CRL),waxaa la isticmaalaa waqtiga Hore ee uurka,2) Biparietal Diameter (BPD)waxaala is ticmaalaa waqtiga ugudambeeyaa ee 3da bilood ee uurka(12-13 weeks),Ultrasoundku wuxuu sheegaa waqtiga ay dhali doonto hooyada uurka leh,Xarumaha caafimaadku waxay sheegaan dada uurjiifka in lagu qeexo asbuuc“weeks of gestation“ Bil masheegaan(not in months),Asbuucyadaas waa laxisaabiyyaa ayadoo laga bilaabaayo maalinta 1aad ee caadadii ugu dambaysay(last menstrual period (LMP) waxaana lagudaraa 14 maalmood.

Xaqijinta Da,da uurka 3da bilood ee ugu horayda

A. Waqtiga uurka waa la xisaabiyyaa adoo laga bilaabayo waqtiga 1aad ee ay bilaabatay caadadii ugu dambaysay,Lagamana Bilaabo waqtiga ay isku tageen shahwada iyo Ugxaanta.

B. Xilliga dhalmadu= Maalintii 1aad ee caadadii ugu Dambaysay + 280 Maalmood

C. Qalabka Ultrasoundka waxaa lagu xisaabiyyaa Dada uurka.

D. ultrasoudka waa midka ugu haboon ee lagu cabiro uur jiifaka kahor asbuuca 14aad.

BIOMETRIC MEASUREMENTS IN THE FIRST TRIMESTER

Cabiraada lasameeyo 3da bilood ee u horayda uurka

Si loo ogado inta bilood ee uurka hooyadu yahay waxaa la isticmaalaa cabiro kala duwan waxaana kamid: **A.** in lacabiro Dhoreeka uurjiifka ayadoo la isticmaalaayo CRL,MSD,PBD(greater than 11 weeks),yolk sac/amion sac Diameter. Cabiraadaha aan soo sheegnay waxaa inta badan sax sheega CRL.

1. Crown-Rump Length(Cabirkha Madaxa ilaa Barida):Waaa cabirkha dhoreka uurjiifka ayadoo laga soo bilaabayu Madaxa ilaa Brida,Waxaan loo adeegsadaa Qalab ka **ultrasoundka**,CRL waa cabirkha ugu saxsan ee la isticmaalo 3da bilood ee ugu horayda.CRL wuxuu u kordhaa si Dhaqsi ah qiyastii 1.1mm maalinkasta.



Figure 4.24: Crown-Rump Length (CRL) measurement of a fetus at 13 weeks gestation. Note that the CRL measurement corresponds to the longest straight line from the top of the head to the rump region.

2. Mean Sac Diameter(Cabirkha dhexroorka Biyaha) Ultrasoundka ayaa lagu cabira biyaha ku jira godka wayn,waana waxa ugu horeeya ee lagu arko xuubka hoose ee minka asbuuca 4-4.5 kadib caadadii ugu dambaysay,cabirkha koowaad ee la arkay 2-4mm,waxaana ugu fiican in lagu baaro kumbuyuuraka makaanka lagaliyo(**Transvaginal ultrasound**).

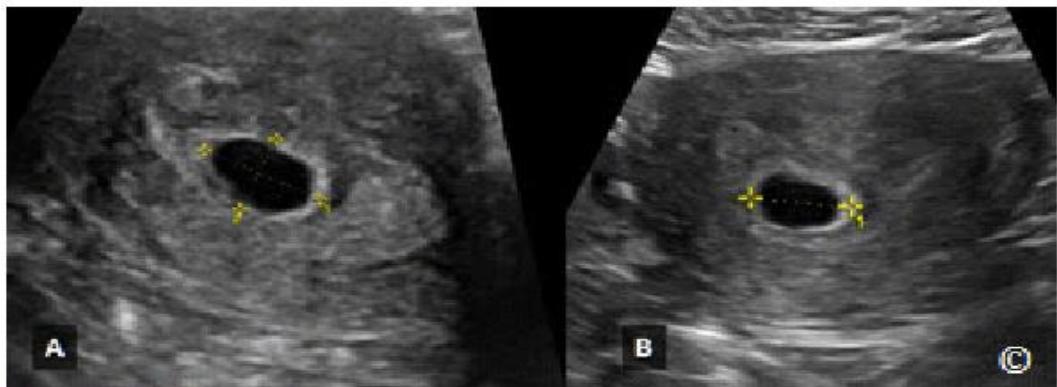


Figure 4.25 A & B: Mean sac diameter (MSD) of a gestational sac at 5 weeks calculated as the arithmetic mean diameters derived from its greatest sagittal (A1), transverse (A2) and coronal planes (B1).

NUCHAL TRANSLUCENCY (Biyo Kujira Qaybta Gadale ee Qoorta)

NUCHAL TRANSLUCENCY: waa in **ultrasoundka** lagu cabiro biyaha ku aruuuray maqaarka hoose ee Qabta Danbe 3da bilood ee ugu horayda uurka.

Biyaha kujira qeybta gadaale ee qorta waxaa la cabiraa inta u dhaxatsa asbuuca 11-13aad iyo 6malin, ama CRL ku yahay 45-84mm, biyaha kujira qaybta gadaaale ee qoorta waxay kuu sheegayaan inta ay gaarsiisan tahay qatarta hida sida yaalka(chromosomal abnormalities),



Figure 4.27: Mid-sagittal plane of a fetus in the first trimester of pregnancy with an enlarged nuchal translucency measurement (NT).

ELEMENTS OF PREGNANCY FAILURE (wax yaabaha noo sheegaya in uurkii Halaabay)

Baaritaanka **ultrasoundka** 3da bilood ee ugu horaysa waxaa soo wajiji kara shaki ama in la xaqijiyo in uurkii burburay, ugu yaraan 10-15% Dumarka uurku ka halaabo waxaa lagu xaqijiyyaa ultrasound.

Calaamadaha uurka Halaabay waxaa ka mid ah.

- A. uurka waxaa lagu xaqijiyyaa baaritaan labaaro dhiig ama Kaadida, **ultrasounkdku** wuxuu sheegay in minka uur kujirin, laakin waxaa jiri kara Dhicis, cunuga oo banaanka minka ku samysmay, uur mardhow samaysmay,
- B. ultrasoundka makaanka lagaliyaa wuxuu sheegay inuu uur jiro, laakiin calaamat uur jiiif aysan jirin.
- C. ultrasoundka makaanka lagaliyo waxa lagu arkay uur jiif, laakiin dhaq dhaqaaq wadne majiro.
- D. uur jiif wadnihiisu shaqaynayo laakiin cabiradiisu aysan sax ahayn, sida wadnaha, xuub ka ku dhagan uur jiifka.
- E. dhigbax lagu arko biyaha uurjifka, ayado ay lasocoto ama aysan lasocon calamadihi dhig baxa F. xubnaha uurjiifka oo u muuqda si aan caadi ahayn.

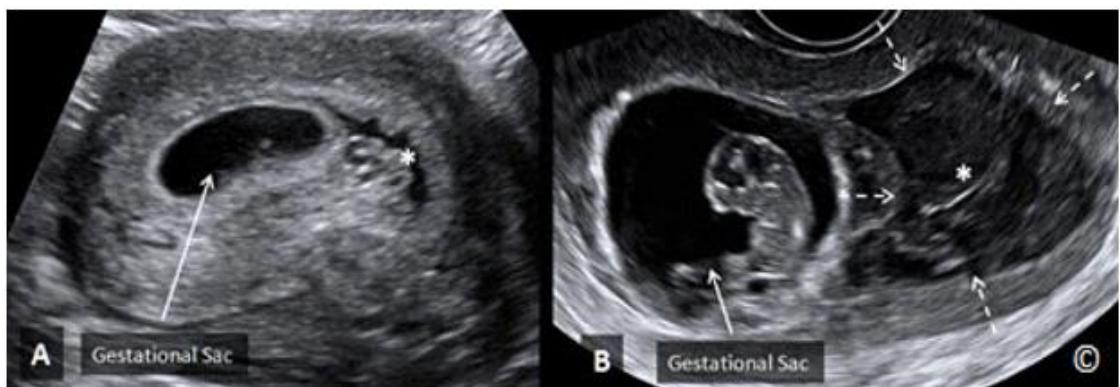


Figure 4.28 A & B: Small (A - asterisk) and large (B – asterisk and broken arrows) subchorionic bleeding in 2 pregnancies. Despite its size, the subchorionic bleeding in B was associated with a good pregnancy outcome.

Calaamadaha Baaritaanka uur hallaabay 3dii bilood ee ugu horaysay.

- A. Crown Rump length waxa uu la eyyahay ama uu kabadan yahay 7mm ayadoo aysan jirin Dhaq Dhaqaaq wadne.
- B. Mean Sac Diameter waxa uu la eyyahay ama uu kabadan yahay 25mm ayadoo uu jif uusan jirin.
- C. Ayadoo uusan jirin uurjiif , garaaca wadnuhuna uu jiro,2bo ama wax kaban oo asbuuc kadib,**ultrasounku xuu** sheegay in uu jiro Godwayn oo biyo ku jiraan laakiin Xuubka biyuhu ma jirin.
- D. ayadoo uusan jirin uur jiif garaaca wadnuhuna uu jiro,11maalmood ama wax kabadan kadib Ultrasoundku waxuu sheegay godka weyn biyo kujiraan iyo xuubka uur jiifka.

CONCLUSIONS (Gaban Gabo)

Baaritaanka ultrasoundka 3da bilood ee ugu horaysa waa tilaabo muhiim ah,si loo qiimeeyo uurka minka kujira,iyo in lasaxo,bilaha uurka,waa in la ogaadaa isbadalada muhiimkaa oo dhacaya 3da bilood ee ugu horaysa uurka caadiga ah,isbadaladaas waxaa lagu ogaadaa Baaritaanka **ultrasounka** makaanka lagaliyo(transvaginal ultrasound),tilaaboo yinka is xig xiga ee hormarka uurka caadiga ahi sameeyo waa in layaqaan,si la isku barbar dhigo wixii **ultrasoundka** laga helay ayadoo labarbar dhigaayo xiliga uurka,Tani waa Aqoonta aas aasiga ah taasoo aan u baahanahay in aan ku kala saarno uurka Caadiga ah iyo Midka aan caadiga ahayn.

Cutubka 7aad

ULTRASOUND IN THE SECOND TRIMESTER

**Ultrasoundka sedexda bilood ee Labaad Hooyada
uurka leh**

Horudhac

Ujeedada ugu weyn ee loo sameeyo baaritaanka Kumbuyutarka uur ku jirta(**ultrasoundka**) xiliga 2aad ee uurka waa:

- A.** in la xaqijiyo bilaha uurka **B.** in lahubiyo xubnaha uur jiifka **D.** in la ogaado Meesha mandheertu taalo.

components of the basic Second trimester ultrasound examination

Baaritaanka ultrasounka waxaa lagu ogaadaa qaybaha aas aaska u ah xiliga 2aad ee uurka Sida:

- A.** Meesha uur jiifku ujeedo(Fetal Presentation).
- B.** Garaaca wadnaha(Cardiac Activity).
- C.** Tirada uur jiifka(Fetal Number).
- D.** da,da iyo cabirka uur jiifka (Fetal age/Size).
- E.** in la qiimeeyo Biyaha uur jiifka(Amniotic fluid Assessment).
- F.** Mandheertu Meesha ay taalo iyo sida ay u muuqato(placenta appearance and location).
- E.** Xubnaha aas aaska u ah uur jiifka(Basic fetal Anatomy).

TIMING OF THE SECOND TRIMESTER ULTRASOUND EXAMINATION
(Baaritaanka ultrasoundka waxaa lagu Xisaabiyyaa xiliga dhexe ee uurka)

PREPARATION FOR THE ULTRASOUND EXAMINATION

(Sida loo Diyaariyo Baaritaanka Ultrasounka)

Itemized list to be checked Before initiation of the second trimester ultrasound

Nuucyada liiskaan in lahubiyo inta aan labilaabin kahor baaritaanka ultrasoundka xiliga dhexe

- A.** in la hubiyo hooyadu dhinaca ay u jiifanayso marka lasaarayo ultrasoundka,inay tahay Sariirtu mid ay ku raxaysanaydo.
- B.** Qor magaca Hooyada iyo Da deeda.
- C.** Qor waqtiga caadadii ugu dambaysay ee Hooyada
- D.** Ku shub Gel uur kujirta hooyada
- E.** Kadibna isticmaal probe ka.

Fetal Biometry Cabirka UUr jiifka

Cabirka uur jiifka waxaa loola jeedaa dada uurka wuxuuna u dhigmaa dhererka uurka,cabirka waxaa loo yaqan culayska uur jiifka.

Four fetal biometric measurements(wax yabaha lagu cabiro uur jifka waxaa loo qaybiya 4)

- A.** Biparietal Diameter (BPD) in la cabiro maxa gees ilaa geeska kale.
- B.** the Head Circumference (HC) in la cabiro wareega madaxa uur jiifka
- C.** the Abdominal Circumference (AC) in la cabiro wareega uur kujirta uur jiifka
- D.** the Femur Length (FL) in lacabiro dhererka lafta bowdada.

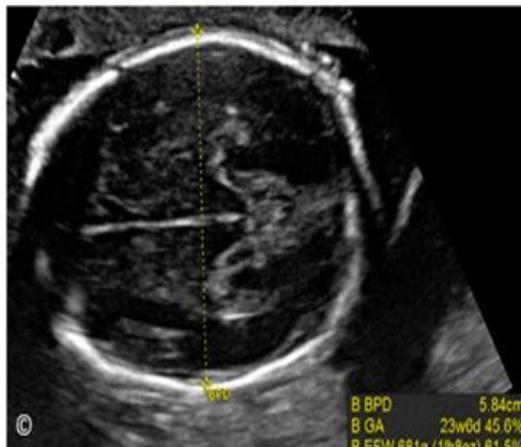


Figure 5.2: Transverse plane of the fetal head at the level of the biparietal diameter (BPD) showing correct caliper placement. Note that the upper and lower calipers are traditionally placed on the outer and inner edge(s) of the cranium respectively (GA = gestational age and EFW = estimated fetal weight).

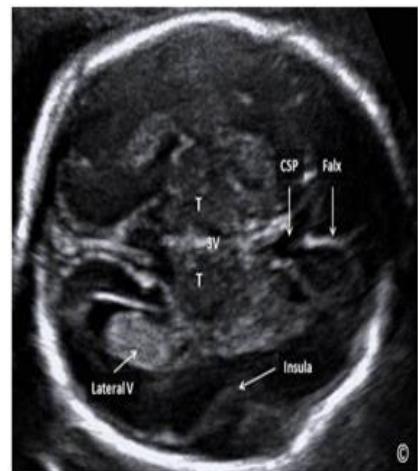


Figure 5.1: A transverse plane of the fetal head at the level of the biparietal diameter (BPD). In this plane, you should see the cavum septae pellucidi (CSP), the falx (labeled), the thalamus (T), 3rd ventricle (3V) and the insula (labeled). A portion of the lateral ventricle is also seen (labeled).

A. Biparietal Diameter (BPD) in la cabiro maxa gees ilaa geeska kale gees.

Ultrasound ku wuxuu sheegaa waxa ku jira madaxa uur jiifka dhexdiisa marka laga cabiro gees ilaa gees waxaana kamid ah:

A. xuubka maskaxda(Dura mater)

B. Godka maskaxda(ventricle)

C. lama arko qaybta dambe ee maskaxda(Hind brain)

B. the Head Circumference (HC) in la cabiro wareega madaxa uur jiifka waxaa lagu cabiraa 3 hab marka lagu baraayo qalabka ultrasoundka

Wareega sida ukunta oo kale ah(ellipse method).

Habka raadinta calaamadaha(Trace method).

Habka dhex roorka(diameter method).

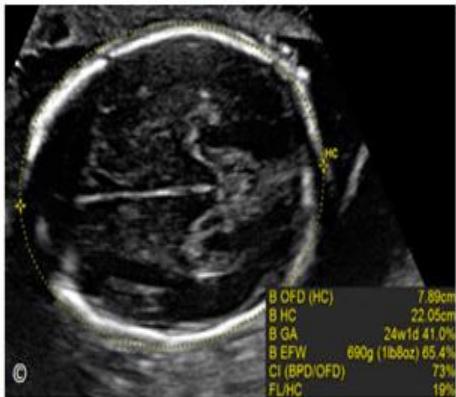


Figure 5.3: Transverse plane of the fetal head at the biparietal diameter (BPD) level. The head circumference (HC) is measured using the ellipse method. Note that the ellipse is tracing the outer edge of the fetal cranium. (OFD= occipito-frontal diameter, GA=gestational age, EFW=estimated fetal weight, CI=cephalic index and FL = femur length).



Figure 5.4: Transverse plane of the fetal head at the biparietal diameter (BPD) level. The head circumference (HC) is measured using the ellipse method. Note that the ellipse is tracing the outer edge of the fetal cranium, and the lower caliper for BPD measurement is placed at the inner edge of the parietal bone. (OFD= occipito-frontal diameter, GA=gestational age and CI=cephalic index).

C. the Abdominal Circumference (AC) in la cabiro wareega uur kujirta uur jiifka

Waxana loo cabira Jiif(transverse)qaybta sare ee calosha uurjiifka.

Ultrasound ku wuxuu sheegaa waxa ku jira uur ku jirta uur jiifka marka loo cabiro Gudub waxaana kamid ah:

- A. laf dhabarta oo gudub loo cabiro**(Spine seen on cross section).
- B. Xumbo caloosha kujirta**(Stomach bubble).
- C. xiddidada xudunta**(umbilical vein).
- D. labada dhinac ee uur jifka oo lagu arko SARARO**(Large sections of fetal ribs seen on each side laterally)
- E. sawirka laguma arko kaliyo**(Kidneys not be visualized in the image).

The AC waa midka ugu wanaagsan ee lagu cabiro laf dhabarta uur jiifka(is best measured with the fetal spine at 3 or 9 o'clock)



Isnimobde sifft to leval simotene sifft ja nemobde lefel sifft to ensa bilaabaa qaybta. Taniyeenku: 2.2 awgii nisnay lajilidmu sifft (12) siiddud rasmots sifft sabuni tariif zhembulsi simotene sifft stoot. Aasaanahimmoon bne xabdo'so 6 ja nesig z (2) aniq qirT. (CVL) eesaan nesig tariifni sifft bns (oA) shooq gribnussooq sifft. (VU) abiz rabs no (dR) dii llut uno.

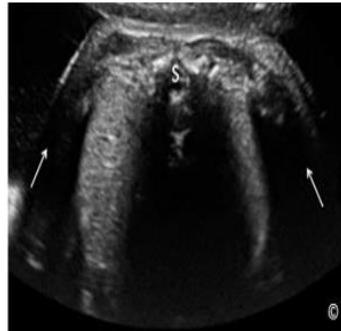


Figure 5.6: Transverse plane of the fetal abdomen at the level of the abdominal circumference (AC) in the third trimester of pregnancy. Note the shadowing (arrows) from upper extremity bones, obscuring the AC lateral borders. The spine (S) is at the 12 o'clock position, which makes optimal measurement of AC difficult.

D. the Femur Length (FL) in lacabiro dhererka lafta bowdada.

Si aan u helno cabirkha saxda ah ee lafta bowdada waxaa cabirkha laga bilaabaa qaybta sare ee lafta waxaana lagu geeyaa qaybta hoose ee lafra(proximal to Distal).



Figure 5.9: Optimal imaging of the femur for length measurement. Note that the whole femur diaphysis is seen and the angle between the insonating beam (arrow) and the shaft of the femur is almost 90 degrees.



Figure 5.10: Femur length measurement. Note that the longest visible diaphysis is measured by placing each caliper at the end of the ossified diaphysis without including the distal femoral epiphysis (labeled).

Qaab dhismeedka aas aasiga ah ee uur jiifka(Basic Fetal Anatomy)

In kastoo qaab dhismeedka aas aasiga ah ee uur jiifku uu yahay mid ultrasoundku uu ku cadaynayo inay jirto Qatar uurka ah oo soo siyaadaysa iyo dhimasho iyo xanuuno hooyada uur ka leh kusoo siyadaya.

Liiska qaab dhismeedka aas aasiga ah ee uurjiifka xiliga dhexe ee uurka

1. madaxa /head

A. God ka tirsan maskaxda oo ay ku jiraan biyaha maskaxda(Lateral cerebral ventricle)

B. Unugyo ku jira maskaxda oo soo saara biyaha maskaxda(choroid plexus)

- C. Xuubka maskaxda(Dura mater)**
- D. Qaybta gadaale ee maskaxda(hind brain)**

2. saablayda/Chest

- A. wadnaha(Heart)**
- B. 4ta qaybooy ee uu leeyaaahy wadnuhu**
- C. Sanbabo(Lungs)**

3. uur ku jirta(Abdomin)

- A. caloosha(Stomach)**
- B. keliyaha(Kidney)**

4. Qalfoof(Skeletal)

- A. lafaha Qoorta(cervical)**
- B. lafaha sableyda(thoracic)**
- C. lafaha dhabarka(Lumber)**
- D.lafaha dabada(Sacrum)**

5. Adimo(Extremities)

- A. Lugaha(legs)**
- B. Gacmaha(Limbs)**

6. Mandheer/ibi(Placenta)

7.xabka uurka(Amnitic fluid)

2. Qaabdhismeed ka saablayda(Chest Anatomy)

Waxaa u baahanay inaan ogaano qaybaha kala ah 2da

Sanbabood(lungs),Wadnaha(heart) iyo afartiisa god.



Figure 5.29: Axial (transverse) view of the fetal chest at the level of the four-chamber view. Note the presence of one full rib on each lateral border (Rib). S= spine, LA= left atrium, RA= right atrium, LV= left ventricle and RV= right ventricle.

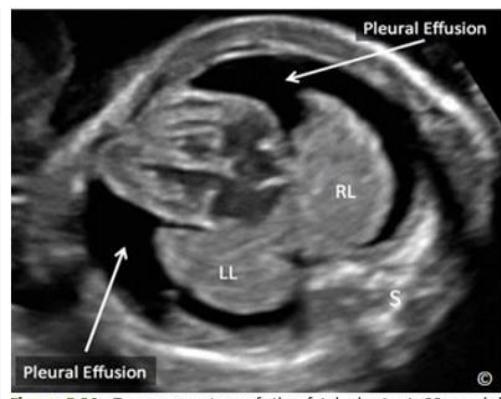


Figure 5.34: Transverse view of the fetal chest at 23 weeks' gestation showing bilateral pleural effusions (arrows). Pleural effusions regressed spontaneously and resolved in this fetus with follow-up ultrasound examinations. S = spine, RL = right lung, LL = left lung.

3. Qaab dhismeedka uur ku jirta (Abdominal Anatomy)

Qalabka **ultrasoundka** waxaa lagu arkaa caloosha si gudub ah(Transverse) waxaana lagu cabiraa AC,Hadii aan ultrasoundka caloosha lagu arkin waxay calaamad u tahay Xanuunka dhuunta oo lagu dhasho(Esophageal atresia),Hadii xumbo badan La arko waxay calaamad u tahay xanuunka lagu dhasho ee qaypta sare ee Xiid maha(Duodenal atresia) dhamaan Xanuunadaas lagu dhasho Qatar kuma aha Nolosha Qofka(Non life Threatening ,laakiin waxay ubaahan yihiin In si dhaqso ah qaliin loogu sameeyo,Qaybo waa wayn oo ka mida curada kaliyaha ku dhaca ee lagu dhasho waxay la xariiraan inuu yaraado xabka(Amniotic fluid) uurjiifka cuduradaas waxaa kamid ah,2da keliyood oo aan samaysmin(bilateral renal agenesis),ama keliyihii oo shaqadoodii gaba,Kaadi haysta oo xiranta , kelidii oo bararta kaadidana ku shubi wayda kaadi hasta kadibna kaadidii dib ugu laabato kelida waxaan a loo yaqaan (Hydronephrosis).

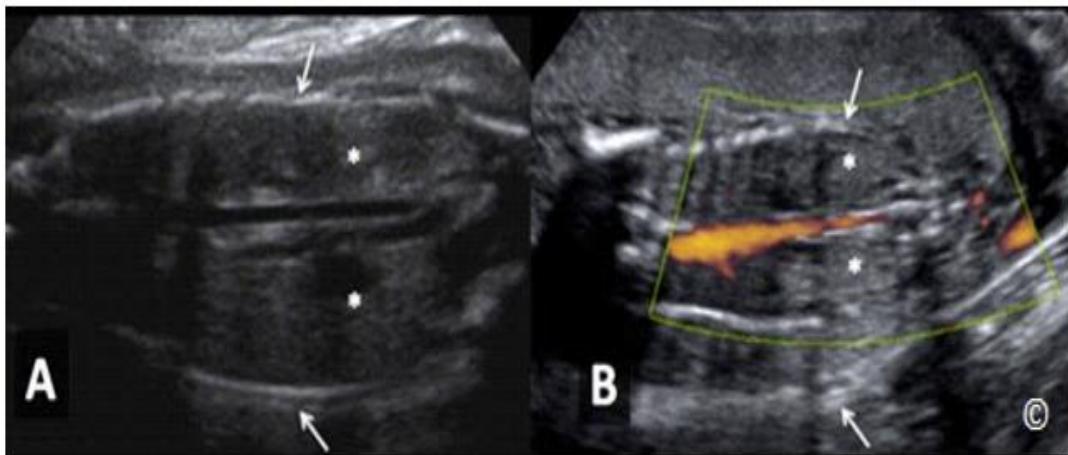


Figure 5.38 A and B: Coronal planes of the abdomen in 2D (A) and color Doppler (B) modes in a fetus with bilateral renal agenesis. Note the presence of anhydramnios (arrows) and absence of kidneys (asterisks) in the renal fossa. Note the absence of renal arteries on color Doppler (B).

4. Qalfoof(Skeletal)

Ultrasoundka waxaa lagu arkaa Laf dhabarta Ayadoo ultrasoundka loo saarayo qaabka Tooska(Sagital),Ama Gudubkaa(Cronal) waxana lagu ogaadaa in uur jiifku xangulaha ka halaysan yahay(Spina bifida),sidoo kale **ultrasoundka** waxaa lagu arkaa cudurada maskaxda cranial sing oo leh calaamadaha Mooska iyo liinta([Banan and Lemon](#)),sidoo kale waxaa la arkaa lafaha dhaadheer ee 4ta adin iyo cuduradooda sida In ay aad u gaabtaan lafuhu([Micromelia](#)),Sidoo kale sidoo kale waxaa la arkaa 2da gacmood iyo cagaha iyo cudurada ku dhaca sida inay maqan tahay gacan ama lug sidoo kale **ultrasoundka** waxaa lagu qii meeya,dhaq dhaqaaqyada xubnaha , kala gosyada sida inay kalagosyadu isku dhagan yihiin oo loo yaqaan([Arthrogryposis](#)).

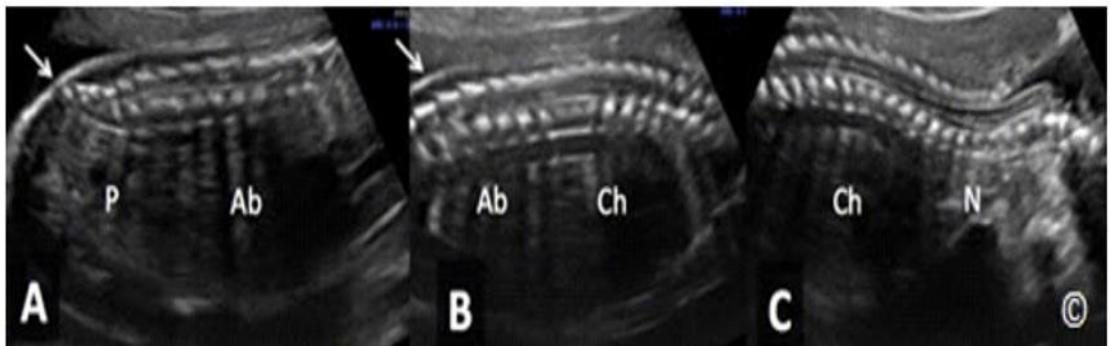


Figure 5.42 A, B, and C: Mid-sagittal planes of the fetal pelvis (P)(Figure A), abdomen (Ab)(Figure B), chest (Ch) and neck (N)(Figure C) showing longitudinal views of the spine. The intact overlying skin can be seen in planes A and B (arrows).

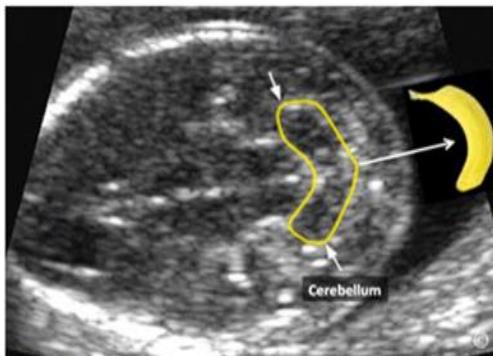


Figure 5.43: Transverse view of the fetal head at the level of the cerebellum (Transcerebellar) in a fetus with spinal neural tube defect. Note the "banana-shaped" cerebellum (arrows, yellow line), a central nervous system feature (Arnold Chiari) associated with open neural tube defect. See text for details.



Figure 5.44: Transverse view of the fetal head at the level of the lateral ventricular plane in a fetus with spinal neural tube defect. Note the "lemon-shaped" cranium (arrows), a feature (Arnold Chiari) associated with open neural tube defect. See text for details.

CUTUBKA 8AAD:

ULTRASOUND IN THE THIRD TRIMESTER OF PREGNANCY

**Cutubka 8aad :Ultrasoundka sedexda bilood ee ugu
Danbayda Hooyada uurka leh**

Horudhac

Muhiimada ugu weyn eebaaritaanka **ultrasoundka** 3da biloodoo ugu dambaysa Hooyada uurka leh waa: ultrasound ku siinayaa macluumaad baaritaan oo sax ah si loo hagaa jiyo, Caafimaadka hooyada uurka leh iyo uur jiifka, Ujeedada aas aasiga ah ee 3da biloodoo ugu dambayda eebaaritaanka **ultrasoundka** waa:

A. in lahubiyo koritaanka uur jiifka **B.** ibidu Meesha ay taalo **C.** in la qiimeeyo Xabka.

Si guud baaritaanka ultrasound ka ee lasameeyo 28 asbuuc kadib waxaa loo yaqaanaa 3da bilood ee udambaysa hooyada uurka leh. Qiimaynta Koritaanka Uur jiifka inta badan waxay bilaabataa 28-32 asbuuc.

Qaybaha 3da bilood ee ugu dambaysa lagu baaro ultrasoundka

A. Dhaq dhaqaaqa wadnaha(cardiac activity).

B. cabirka uur jiifka(Fetal size).

C. uur jiifku sida uu usoo muuqdo iyo sida uu u yaalo(Lie, (Longitudinal).

D. Fetal anatomy(Qaab dhismeedka uur jiifka).

E. Mandheerta/ibidu Meesha ay taalo(Placental Localization).

F. Xabka/biyaha uurjiifka(Amniotic fluid Assessment).

In la qiimeeyo culayska uur jiifka(Assessment of Fetal weight)

In laqiyaso culayska uur jiifka waxa loo baahan yahay in la qiimeeyo cabiro bedka waxaana ka mid ah:

A. Biparietal Diameter (BPD) in la cabiro maxa gees ilaa geeska kale gees

B. the Head Circumference (HC) in la cabiro wareega madaxa uur jiifka

C. the Abdominal Circumference (AC) in la cabiro wareega uur kujirta uur jiifka

D. the Femur Length (FL) in lacabiro dhererka lafta bowdada.

**Ultrasounka waxaa lagu qiyaasaa Culayska uur jiifka Ayadoo loo eegayo
Qodobada soo socda**

A. BPD & HC waa cabirada ugu saxsan ee loo isticmalo uurka maka la barbar dhigo AC&FL.

B. AC waa cabirkha ugu saxan ee lagu ogaado culayska uur jiifka waana cabirkii ugu horeeyey ee sheegaayey Koritaanka aan caadiga ahayn(Growth Abnormalities).

C. waa cabirkha ugu adag ee lagu cabiro Lafdhabarta uur jiifka(Fetal spine).

INTRAUTERINE GROWTH RESTRICTION

(uur jiifka aan si fiican ugu korin minka dhexdisa).

uur jiifka aan si fiican ugu korin minka dhexdisa: waa culayska uur jiifka oo ka hooseeya 10% kaa soo lagu ogaado qalabka ultrasoundka.

uur jiifka aan si fiican ugu korin minka dhexdisa waxaa loo kala Qaybsanka 2ba qaybood

A. symmetrical(Qaybsanka waqtiga hore) **B.** asymmetrical(Qaybsanka waqtiga dambe).

Ultrasound leh sawida kalar ah waxaa lagu ogaaday in socodka dhiigu ku yaryahay xididata maskaxda kadibna dhiigii ku yaraaday Mandheerta uurjiifka taasoo keenaysa

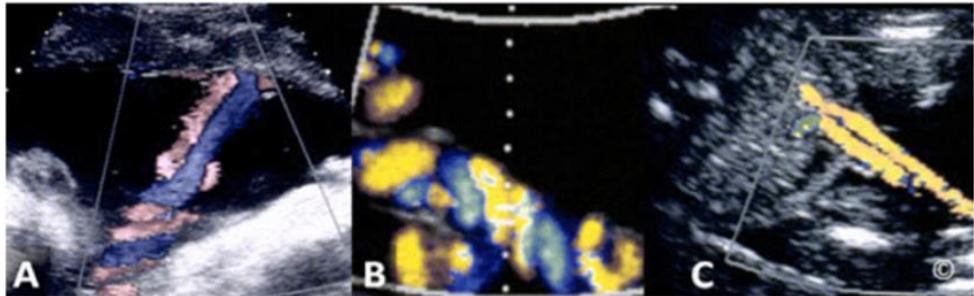


Figure 6.2: Color Doppler mode showing the umbilical cord at its placental insertion site (A), free loop in the amniotic cavity (B), and at the fetal abdominal insertion (C).

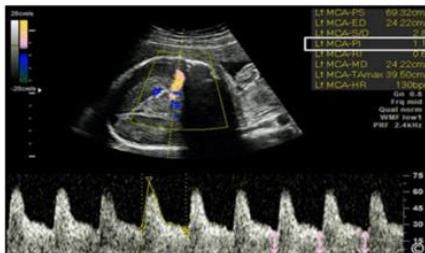


Figure 6.6: Spectral (Pulse) Doppler of the middle cerebral artery in a growth restricted fetus. Note the low impedance circulation ($\text{PI} = 1.14$) (white rectangle) with increased flow during diastole (red double arrows). This represents brain sparing.

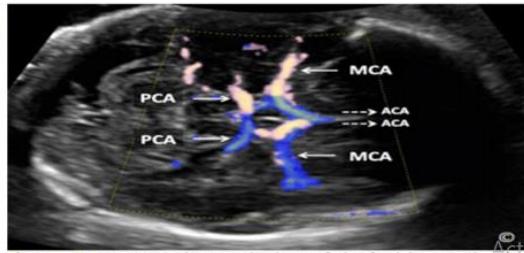


Figure 6.8: Transverse plane at the base of the fetal brain with color Doppler mode showing the circle of Willis. Note the course of the middle cerebral arteries (MCA) and posterior cerebral arteries (PCA). The anterior cerebral arteries (ACA) are not seen due to their course perpendicular to the ultrasound beam (dashed arrows).

oxygen la aan ku dhacda uur jiifka,kadibna waxaa la arkaa koritaanka uur jiifka oo yaraada.

FETAL MACROSOMIA (Uur jiif cayilkiisu badan yahay)

Uurjiifka culayskiisu badan yahay: waxaa loo yaqaan cayilka uur jiifka(obesity)culayskiisu kabadan yahay 4000-4500 gram taa soo aan u dhigmin dada uur jiifka.

Qatarta cudurada ku dhaca caruurta dhalatay waxaa siyaadiya culayska cunuga dhashay oo ka badnaa 4000 gram,Qatartu waxay sii darantahay marka culaysku gaaro 4500 gram,waxaan loo yaqaana urjiif culayskiisu badnaa(Fetal macrosomia).10% caruurta dhalata waxay ku dhashaan cayil kooda oo badan.

Predisposing factors neonatal macrosomia (wax yaaba keena inay caruurtu ku dhashaan miisaan kooda oo badan)

waxaa kamid ah:

- A.** sonkor ku dhacda xiliga uurka(Gestational Diabets).
- B.** Hooyada oo cayilneed(Maternal obesity).
- C.** culayska oo siyaadayey xiliga uurka(increase weight gain during pregnancy).
- D.** Da,da uurka oo ka badata 42 asbuuc(gestational age greater than 42 weeks)
- E.** Dhedherka hooyada uurka leh oo kordhay(increase maternal height).
- F.** miisaan hooyada uurka leh oo bata waqtiga dhalmada(increase maternal weight).

Miisaanka uur jiifka oo bata wuxuu keeni karaa hooyada iyo cunuga dhalan doona inay kudhacaan dhibaatooyin badan waxaana kamid ah.

- A.** dhiigbox yimaada dhalmada kadib
- B.** makaanka oo aad u jeexma
- C.** Qalin in lagu sameyo hooyada uurka leh

Baaritaanka **ultrasoundku** wuxuu sheegaa in culayska uur jiiku badan yahay ayna siyaadeen dahaarada baruurta uur jiifka Taas oo inta badan lagu qeexo(Abdominal Circumference (AC) in la cabiro wareega uur kujirta uur jiifka), AC waa cabirka ugu fiican ee loo isticmaalobaaritaanka cayilka uur jiifka,waana kii ugu horeeyey ee lagu ogaaday Koritaanka qaldan(Growth Abnormality).

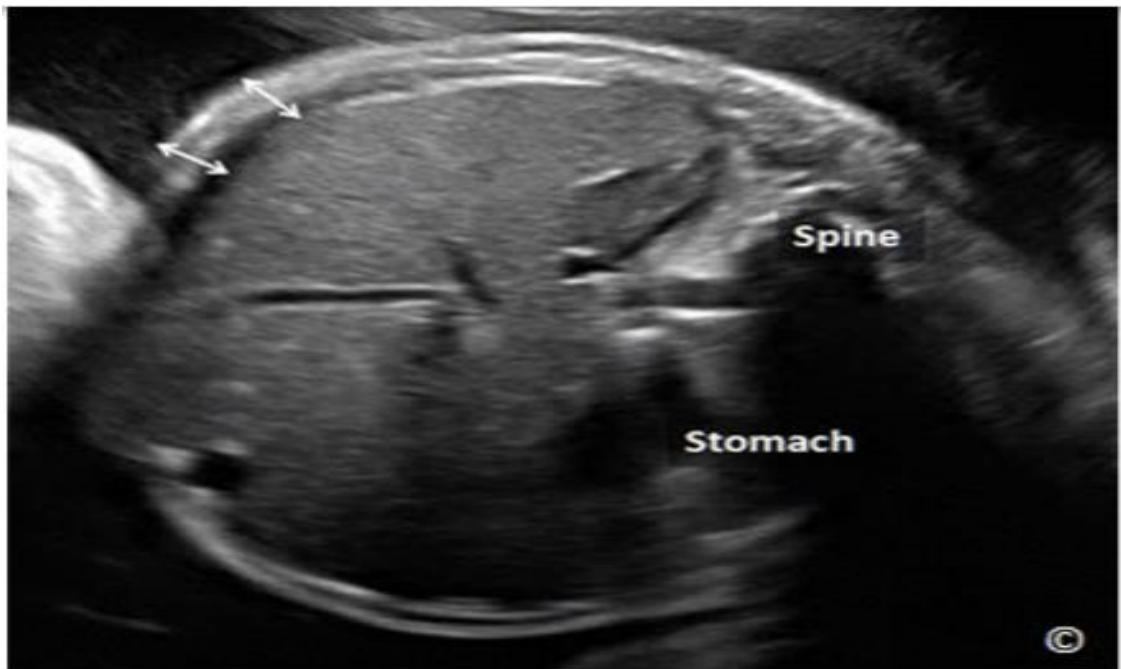


Figure 6.10: Transverse plane of the fetal abdomen at the level of the abdominal circumference in a macrosomic fetus. Note the increased subcutaneous fat (double arrows).

Cutubka 9aad :

ULTRASOUND EVALUATION
OF TWIN GESTATIONS

(ultrasoundka waxaa lagu qiimeeyaa
Uurka mantaanaha).

2011 wadanka maray kanka matanaha ka dhashay waxaa lagu qiyasay 33.2 Kunkiiba, Caruurta ku dhalata mataanaha intooda badan waxay dhashaan waqtii hore waana yaryaryihiin waana adagtahay inay noo laadaan waxayna ku dhashaan wax kayar 32 asbuuc, uurka mataanaha ah wuxuu siyaadiyaa qatarta Ku imaan karta hooyadab iyo uur jiifka.

Maternal and Fetal/Child Complications of Twin Pregnancies (Dhibaatooyinka ku imaan kara hooyada uurka leh, Mataanaha &Caruurta).

A. Maternal (hoyada uurka leh):

Fool waqtigeedii kasoo hormartay(Preterm labor).

Xabkii oo dilaacay soona daatay(Preterm premature rupture of membranes).

In la arko dhiig kar iyo proein kaadida la socda(Pre-eclampsia)

Mandheerta/ibida oo isbadal ku dhaco(placenta Abnormality).

Caabuq ku dhaca keliyaha(pyelonephritis).

Dhiig bax yimaada umusha kadib(Postpartum hemorrhage).

B. Uur jiifka / caruurka(Fetal/Child)

Koritaanka oo qaldama(Growth abnormalities).

Ciladaha lagu dhasho(Congenital malformations).

Ilmaha yar in lageliyo qalabka daryeelka Degdega ah(Admission to neonatal intensive care unit).

Dhaawac ku dhacay maskaxda kadibna joojiyey dhaqdhaqaqa uurjiifka/caruurka (Cerebral palsy).

Dhimasho ku timaada uurjiifka/caruurka(Perinatal death).

Ultrasoundku wuxuu muhiim u yahay baaritaanka iyo Dwaynta mataanaha, **Ultrasoundku** wuxuu qeyb muhiim ah u yahay daryeelka hooyada uurka leh ee sida mataanaha iyadoo laga bilaabayo baaritaan aas aasiya iyo in lagu hago ilaa ay

ka dhasho hooyadu. Ultrasoundka intiisa badan waxaa loo isticmaalaa in loogu adeego hooyada mataanaha dhasha.

Benefits of Ultrasound in Twin Pregnancies

(Faa iidada ultrasoundku u leeyahay mataanaha uurka ku jira).

- A.** in la baaro mataanaha(Diagnosis of twins).
- B.** Nuuca mandheerta/ibida samaysantay(Determining chorionicity of placenta).
- C.** in la qiimeeyo qaab dhismeedka uur jiifka(Evaluation of fetal anatomy).
- D.** In la ogaado koritaan aan cadiga ahayn ee uur jiifka(Detection of fetal growth abnormalities)
- E.** indh indhaynta uur jiifka(Fetal surveillance).
- F.** in la ogado uur jiifku Meesha uu u jeedo xiliga fosha (Determining fetal presentation in labor).

ETIOLOGY AND PLACENTATION OF TWINS

(Sabata iyo samaysanka mandheerta mataanaha)

Mataanaha waxaa loo kala saaraa 2ba qaybood oo waa wayn. 1. Mataano kasamaysmay 2 ukun oo bacrintay(dizygotic) iyo mataano kasamysmay 1 ukun oo bacrintay(monozygotic).

1. Mataano kasamaysmay 2 ukun oo bacrintay(Dizygotic twins) waxa la arkaa markii 2ba ukumood la bacrinto 2 shahwo oo kala saran, waxaana ka dhasha mataano kuwaasoo si guud kala qaybsan laakiin ku midaysan 1hal Min(uterus), Dizygotic twins isdoo kale waxaa lagu maga caabaa(fratal)waxayna lee yihiin 2ba xab oo kala saran mid walbana wuxuu lee yahay mandheer u gooniya iyo xuub u gooniya, Wax yaabo badan ayaa saameeya mataanaha 2bda ukun ee bacrinsan waxana kamid ah: **A. Dada hooyada B. Jinsiga C. Deegaanka**

Meesha ugu badan ee mataanahas lagu arkaa waa**(NIGERIA)**, Meesha uguyarna waa **(JAPAN)**.

2. Mataano kasamaysmay 1ukun oo bacrintay(monozygotic) waxa la arkaa markii 1ukun labacriyo 1 shahwo waxayna u qaybsantaa 2ba uur jiif, mataanahani waxay iskun mid ka yihiin Hida sidayaasha 250 kii uurba 1 uur ayaa noqda Mataanaha aan soo sheegnay, matanahanan cuduradodu iyo dhimashadoodu waa badan tahay, marka loo ego kuwa kale(Dizygotic twins**).**

Placentation in Monozygotic Twins and Timing of Cleavage(samaysanka mandheerta mataanaha 1hal ukun ah iyo waqtiga ay kala go ayan).

Time of Cleavage (waqtiga ay kala go ida)	Placentation(samaysanka mandheerta)	Frequency(tirada)
0-3 Malin	Diamniotic(2ba Xab)	25%
4-8 Malin	Diamniotic(2ba Xab)	75%
9-12 Malin	Monoamniotic(1 Xable)	1%
13-15 Malin	Conjoined(isku ximeen)	Rare

DETERMINING TWIN PLACENTATION BY ULTRASOUND(Ultrasoundka ayaa go aamiya samaysanka mandheerta matanaha).

Ultrasoundka ayaa si xaqiiqa loogu ogadaa Nuucyada mandherta samaysantay ee mataanaha qaas ahaan waxaa si fiican loo ogadaa 3da bilood ee ugu dambaysa uurka 100% ultrasoundku wuxuu xaqiijyaa 3da bilood ee ugu horaysa uurka in biyaha maataanuhu ay fiican yihiin, Hubinta ultrasoundka ee biyaha uurka waa yaraataa marka waqtiga uurku dheeraado.



Figure 7.1: Sagittal plane of the uterus at 5 weeks gestation with 2 distinct chorionic sacs. The thick separation of the chorionic sacs suggests a dichorionic twin gestation.



Figure 7.2: Dichorionic – diamniotic twin gestation (A and B). Note the thick dividing membrane with a twin-peak sign (asterisk) at placental insertion.

90% ultrasoundka waxaa lagu xaqiijiyaa Xabka uurka inta lagu gudajiro xiliga 2aad iyo 3aad ee uurka waxaana la arkaa waxyaabaha soo socda:

- A. waa in laxaqiijiyaa uur jiifku inuu yahay lab ama dhadig, hal xable ama laba xable.
- B. Hadii mataanuhu yihiin hal nuuc oo jinsi ah lab ama dhadig waxaad fiirisaa Meesha aytaal iyo inta ay tahay mandheertu, hadii mandheertu kala qaybsanyihiin waxay cadayn u tahay in xabku laba yahay.

ULTRASOUND IN FOLLOW-UP OF TWIN GESTATIONS (Ultrasoundka waxaa la gula socdaa uurka mataanaha).

Mataanuhu waxay ubaahan yihiin baaritaan si loo ogaado dhibaatooyinka imaan doona sida mataanaha oo ku kori waayey minka, hal cunug oo uurka ku dhintay.

Ultrasoundka ayaa lagu baaraa mataanaha 4 asbuuc oo kasta si loo ogado inuu jiro koritanka qaldan(growth abnormalities) ee mataanaha leh 2bada xuub(dichorionic),**Ultrasoundka** ayaa lagu baaraa mataanaha leh 1halka xuub 2 asbuuc oo kasta, Ultrasoundka sidoo kale waxaa loo isticmaalaa in lagu baaro xaalad laxariirta in uur jiifku Dhiig la, aan yahay(fetal anemia).

Ultrasound in Dichorionic Twin Pregnancies (ultrasoundka uurka mataanaha 2labda xuub leh).

Time(Waqtiga)

Indications(Tusin)

sedexda bilood ee ugu horayda(First trimester (7-13 weeks))

Pregnancy dating(waqtiga uurka)

Diagnosis of twins(in labaro matanaha)

Determination of chorionicity

(In laxaqiijiyo xuubka)

Sedexda bilood ee Dhexe (Second trimester (18-20 weeks)

Anatomic survey

(in labaro Qaab dhismeedka)

Placental evaluation

(In la qiimeyo mandherta)

Lasocoshada|Follow-up (start at 24 weeks)

Every 4 weeks if uncomplicated

in lala socdo 4asbuuc oo kaste

hadaysan jirin wax dhib ah.

Ultrasound in Monochorionic Twin Pregnancies(ultrasoundka uurka mataanaha 1halka xuub leh).

Time(Waqtiga)	Indications(Tusin)
sedexda bilood ee ugu horayda(First trimester (7-13 weeks))	Pregnancy dating(waqtiga uurka) Diagnosis of twins(in labaro matanaha) Determination of chorionicity (In laxaqijiyo xuubka)
Lasocoshada(Follow-up (start at 16 weeks))	Every 2 weeks if uncomplicated In lala socdo 2ba asbuuc oo kaste
Sedexda bilood ee Dhexe (Second trimester (18-20 weeks))	Anatomic survey (in labaaro Qaab dhismeedka) Placenta evaluation (in la qiimeeyo mandheerta)

DISCORDANT TWINS(Mataano iskhilaafsan).

DISCORDANT(iskhilafsan/kaladuwani) waa kala duwanaanta culayska u dhexeeya mataanaha uur jiifka,waxaana lagu qexi karaa mataano koritaankii caadiga ahaa kaweyn(larger twin),Baaritaan **ultrasound** oo isku xig xiga wuxuu muhiim u yaahay mataanaha uurka kujira si loo sameeyo baaritaanka mataanaha culasyskoodu is khilaafsan yahay iyo qatarta in laga hortago,

TWIN-TWIN TRANSFUSION SYNDROME(Mataan -mataan kale ku shubay Dhiig ama Xab)

Twin-twin transfusion syndrome (TTTS) Cuduradaan waxaa lagu arkaa 10-20% mataanaha 1halka xuubleh(monochorionic),waxaana la aaminsanyahy cuduradaani inay ka yimaadeen xididada oo si qaldan iskugu xariirsamay kadibna dhiigii ama xabkii uu mataan katago oo mataan kale ku shubmo,Mataanka uur jiifka ah ee qaatay dhiiga(**recipient**)waa waynaanayaa kadibna biyihii xabka ayaa badanaaya(polyhydramnios) biyahaas inay bataan waxaa keenaya kaadida uur jiifka oo badanaysa. Mataanka uur jiifka ah ee bixiyey dhiiga(donor),wuxuu noqonayaa dhiig

la,aan wuxuuna u muuqdaa mid aad u yar,yaraantaas oo ay keentay Xabkii oo ku yaraaday(oligohydramnios) dhaq dhaqaaqiisuna waa mid aad u xadidan.Mataan-mataan kale ku shubay Dhiig ama xab Baaritaankiisa waxaa la ogaadaa 3da biloodoo dhewe ee uurka,Kaibna si dhaqsiya waxaa loo arkaa fool aan(preterm labor) waqtigeedii la gaarin iyo xuubka uur jiifka oo dilaaca(preterm rupture of membranes.)waqtii Hore.

Ultrasoundku wuxuu aas aas u yahay baaritaanka iyo maraynta Mataan-mataan kale

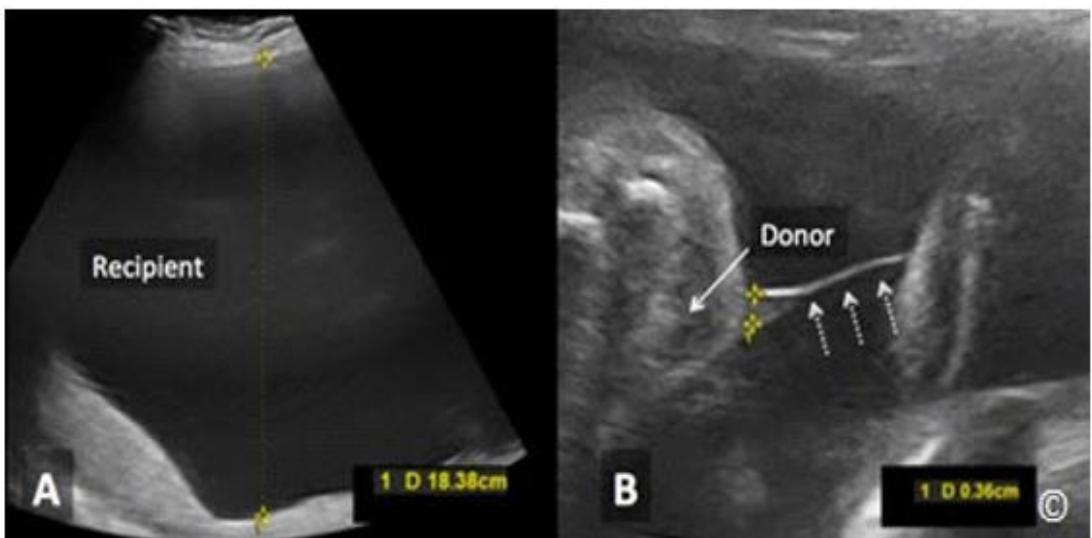


Figure 7.8: Twin-twin transfusion syndrome in a monochorionic twin gestation showing the presence of polyhydramnios in the recipient sac (A) and oligohydramnios in the donor sac (B). Note the wrapping of the amniotic membrane (arrows in B) around the body of the donor twin.

ku shubay dhiig ama xab Baaritaanka ultrasounka wax yaabaha lagu ogaado waxaa kamid ah in mataanuhu 1 xuub leeyihiiin(monochorionic) , In biyo bada(polyhydramnios) uu lee yahay uur jiifku cabirkka xuubka biyaha badani ku jiraana uu yahay 8cm, in biyo yar uu lee yahay uur jiifka cabirkka xuubka biyaha yari kujiraan uu yahay 2cm. mataanka bixiyey Dhiiga ama Biyaha xabka lama arko kaadi haystiisa ama waa yartay(small or non-visible bladder),Mataanka qaatay dhiiga ama xabka Kaadi haystiisu Waa Wayn tahay(enlarged bladder).

Staging System for Twin-Twin Transfusion Syndrome(Heerarka Mataan-mataankale ku shubay Dhiig ama Xab).

Stage **Polyhydramnios/ Oligohydramnios** **Absent bladder in donor** **Critically abnormal Doppler studies** **Hydrops** **Death of 1 twin**
(Heer) **(Biyo badan/Biyo Yar)** **Bixiyaha kadi haystiisa lama arko** **(cilad aan caadi ahayn)** **Biyo badan** **Dhimashada 1 Matan**

MONOCHORIONIC-MONOAMNIOTIC TWINS (Mataano leh 1xuub – 1 Xab). 1% Mataanaha halka xab leh waxay lee yihiin hal xuub, waxaana muhiim ah in lagu hubiyo baaritaano Ultrasouno badan.

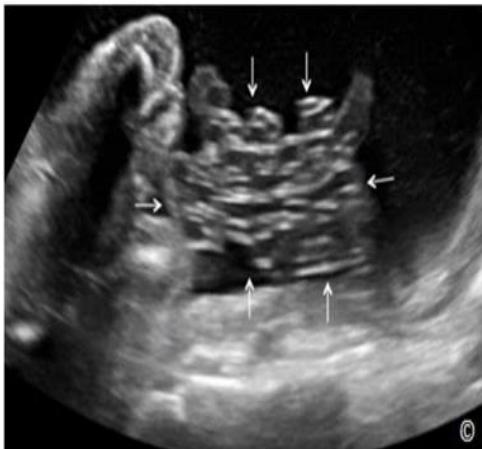


Figure 7.10: Monochorionic-monoamniotic twin gestation with cord entanglement seen on B-mode (grey scale). Note the presence of a mass of cords (arrows) between the 2 fetuses.



Figure 7.11: Monochorionic-monoamniotic twin gestation with cord entanglement seen on color Doppler mode (same fetus as in figure 7.10). Note the presence of a "mass of cords" between the 2 fetuses.

CONJOINED TWINS (Matano isku dheggan).

Mataanaha isku dheggan aad iyo aad ayey u yar yihiin, Dhibaatooyinka mataanaha 1halka xuub leh waxay ka timaadaa In aysan si fiican u kala qaybsamin ugxaantii bacrintay inta u dhaxayda malinta 13aad-15aad ee isku taga ugxaanta iyo shahwada. 1 cunug ayaa lagu arkaa 50000 kii kun oo cunug, 5 meelood ayey iskaga dhagaan Mataanuhu.

Types(nuucyada)	Frequency(tirada)
Craniopagus/head (madaxa ayey is kaga dhagen)	1-2%
Throcopagus/chest(sablayda ayey is kaga dhagen)	75%
Omphalopagus/Abdomin(uur kujirta ayey iskaga dhagen)	RARE
Pygopagus/Rump(barida ayey is kaga dhagan)	20%
Ischiopagus/pelvis(sinaha ayey is kaga dhanyihin)	5%

Baaritaank **ultrasoundka** ee mataanaha isku dhagan waxaa lasameeyaa 3da bilood ee ugun horaysa uurka,Rajaduna waxay ku xirantahay Heerka iyo Meesha xubnnaha mataanuhu iskaga dhegan yihiin.

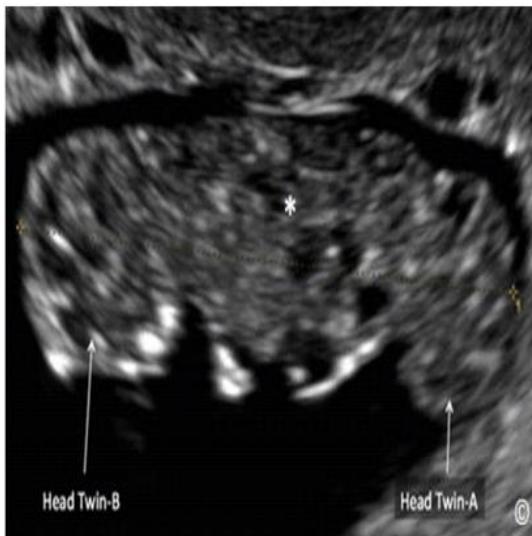


Figure 7.15: Conjoined twins noted on 2D – grey scale ultrasound at 9 weeks gestation. Note the fusion of twins in the pelvic area (asterisk). Cephalic regions of twins are labeled.

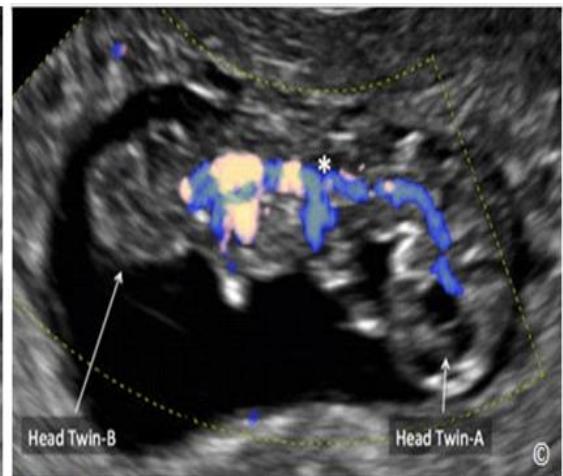


Figure 7.16: Conjoined twins noted on ultrasound at 9 weeks gestation (same twins as in figure 7.15) with color Doppler ultrasound confirming the vascular connectivity between the 2 embryos (asterisk). Color Doppler can be used to confirm the diagnosis of conjoined twins, and differentiate it from monoamniotic non-fused embryos that are closely positioned in the amniotic cavity. Cephalic regions of twins are labeled.

Twin Reversed Arterial perfusion (Matan si cagsi ah u gudbiya dhiiga)

Waxa sidoo kale loo yaqaan Mataanaha wadnaha(Cardiac Twin) wana xaalad dhif dhif ah wuxuuna cudurkaani can ku yahay Matanaha 1halka xuub leh iyo wadnaha oo aan shaqaynayn 1hal uur jiif oo ka mid ah mataanaha uurka,wadnaha mataanka fiyow aaya dhiiga kasoo dhuba halbowlihiisa wuxuuna ku shubaa halabowlaha midka kale ayadoo

a xiriirinayso Mandheertu waxana ka imaan kara wadnaha oo shaqadisa gaba(cardiac failure).



Figure 7.17: Grey scale ultrasound of a twin reversed arterial perfusion (TRAP) in a monochorionic twin at 9 weeks gestation. Note the presence of a mass of tissue (labeled as acardiac twin) with an amniotic membrane covering (small arrows) and a yolk sac (labeled as yolk sac of acardiac twin). The normal twin is seen (labeled as normal twin) with a yolk sac (labeled as yolk sac of normal twin).

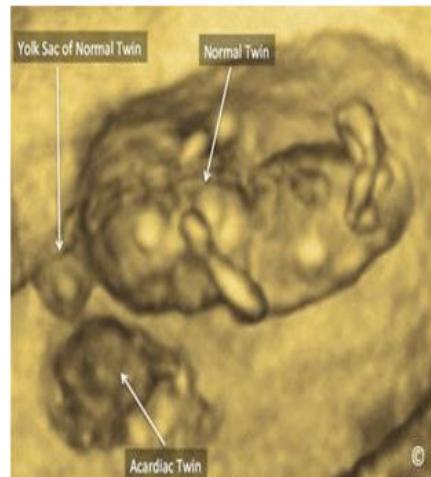


Figure 7.18: Three-dimensional ultrasound of a twin reversed arterial perfusion (TRAP) in a monochorionic twin at 9 weeks gestation (same as in [Figure 7.17](#)). Note the presence of a mass of tissue (labeled as acardiac twin) that is separate from the normal twin (labeled as normal twin). The yolk sac of the normal twin is seen (labeled as yolk sac of normal twin). The acardiac twin yolk sac is not clearly visible.

Cutubka 10aad:

Placental Abnormality(Mandheer aan caadi ahayn).

INTRODUCTION(Hordhac)

Mandheerta waxaa sameeyaa unugyada kore(trophoblast) iyo unugyo hoose(blastocyst) kuwaa soo nafaqada siiya uur jiifka,Mandheertu waxay samaysantaa,Maalinta 6aad marka laga soo bilaabo waqtiga ay isku darmaan shahwada iyo ugxaanta oo loo yaqaan (Fertilization),Unugyada hoose ee mandheerto * blastocyst* waxay ku dhagaan Dahaarka

Hoose ee minka(endometrium cavity),unugyada kore(trophoblast) waxay isku qaybiyaan 2bo, **A.** lakab aad u hooseeya oo loo yaqaan (Cytotrophoblast).

B. Lakab kore oo loo yaqaan(syncytiotrophoblasts) → kaasoo sameeyaa Nudayaal dhuu dhuuban oo loo yaqaano(Villi).

Mandheertu waxay ku samaysantaa Dhinaca xuubka uur jiifka & xuubka hoose ee minka qaybta ugu sii hoosayda oo loo yaqaan(decidua basalis), marka ugu horaysa ee lugu ogaado **Ultrasoundka** mandheerta,waa Asbuuca 9aad -10aad ee uurka waxaana la arkaa wax adag oo cad,Asbuuca 12aad ee uurka Socodka dhiiga hooyada uurka leh wuxuu aadaa mandheerta,waqtiga ugu dambeeyaa ee uurka Dhexroorka mandheertu wuxuu gaaraa 20cm, muggeeduna wuxuu gaaraa 600ml. Meesha ay taal mandheertu(Placental localization) waa mid kamid ah 6da qaybood ee ugu waa weyn oo lagu baaro **Ultrasoundka** caalamiga ah ee Hooyada Uurka leh.

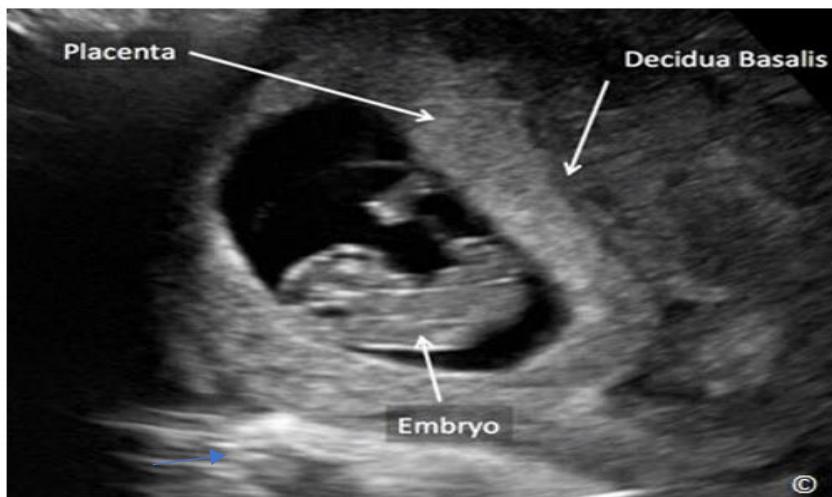


Figure 8.1: Ultrasound of an intrauterine pregnancy at 9 weeks showing the echogenic placenta (labeled). Note the decidua basalis (labeled) as a hypoechoic region behind the placenta. The embryo is also shown (labeled).

PLACENTA PREVIA(Mandheerta soo Hormarta)

Mandheerta soo hormaartay waxaa lagu qeexaa Mandheerta oo Daboosha Qayb ama dhamaan Afka hoose ee minka,Uurka caadiga ah Mandheertu waxay ku dhagantahay Qaybta sare ee minka,Hadii mandheertu soo Hormarto waxay ku dhagtaa qayb ama Dhamaan Afka hoose ee minka,Mandheerta soo hormarta waa mid kamid ah kuwa ugu caansan ee sababa Dhiigbox(bleedign) xiliga 2aad iyo xiliga 3aad ee uurka. 5/1000 kunkii kiisba 5kiis oo kamid ah Ayaa ku dhalata mandheerta soo hormata,Xiriir Ayaa ka dhexeyya mandheerta soo Hormarta iyo Dhalmada badan(multiparity),sida lafilaayey Mandheerta soo hormartay waxay ku siyaaday wadamada Dhalmadoodu badan tahay.Calaamada ugu wayn ee lagu yaqaan Mandheerta soo hormartay Waa Dhiig kasocda makaanka oo aan wax xanuun ah lahayn(painless vaginal bleeding),Waqtiga Dambe ee xiliga 2aad iyo xiliga 3aad ee uurka, Hdii aad aragto Xanuun iyo dhiig(painfull vaginal bleeding) kasocda hooyada uurka leh mandheertuna ay soo hormartay Arintaasi waxay la xariirtaa Minka oo aruuritaan wada Ama Mandheerta oo soo go,day waxaana loo yaqaan (abruption).

Calaamada ugu Hoaraysa ee mandheerta soo Hormarta Hadii Ay tahay dhiig socda xiliga foosha waxaa muhiim ah in hooyadaas Lagu dhaliyo Qaliin(cesarean section/C-section),waa Hadii mandheerta soo hormartay ay tahay Cilga 3aad ee uurka,Mandheerta soo Hormartay sidoo kale waxay la xariirtaa In si fiican u suu muuqanwaayo uurjiifku,Mandheerta soo hormartay inta badan waxaa la arkaa Waqtiga hore ee uurka.

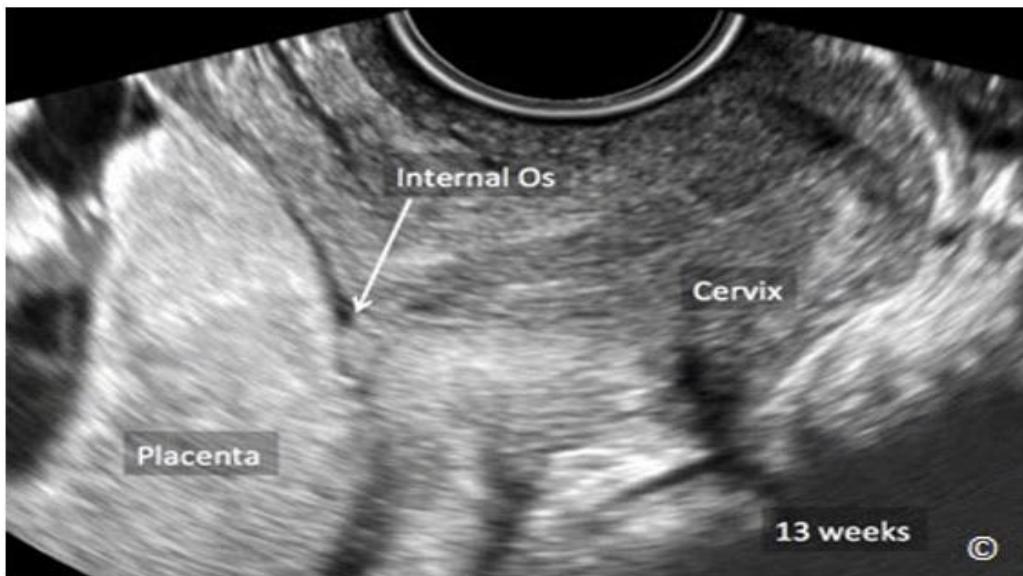


Figure 8.2: Ultrasound of an intrauterine pregnancy at 13 weeks. Note that the placenta (labeled) is covering the internal os of the cervix (labeled), representing a placenta previa.

Risk Factors for Placenta Previa(wax yaabaha sababa in mandheertu soo hormarto).

- A. Qalin hore inuu soo maray(History of prior cesarean delivery).
- B. Xiliga uurka oo dhamaaday(Prior pregnancy termination).
- C. Xiliga Qaliinka Minka(Prior uterine surgery).
- D. Hooyada uurka leh oo sigaar cabta(Maternal smoking).
- E. Da,da hooyada uurka leh oo wayn(Advanced maternal age).
- F. Dhalmada Badan(Multiparity).
- G. Hooyada oo isticmaasha Droogo(Cocaine use in mother).
- H. Dhowr uurjiif oo uurka hooyada ku jira(Multiple pregnancy).

Nuucyada Mandheerta soo Hormartay waxaa kamid ah.

1. Mandheerta oo si dhamaystiran u daboosha Afka hoose ee minka(Complete placenta previa).
2. Mandheerta oo Qayb Ka daboosha afka hoose ee Minka(partial placenta previa).
3. Mandherta oo gees ka daboosha Afka hoose ee minka(marginal placenta previa). Dhamaan Nuucyadaas waxaa lagu ogaadaa Ultrasoundka makaanka lagaliyo(Transvaginal).

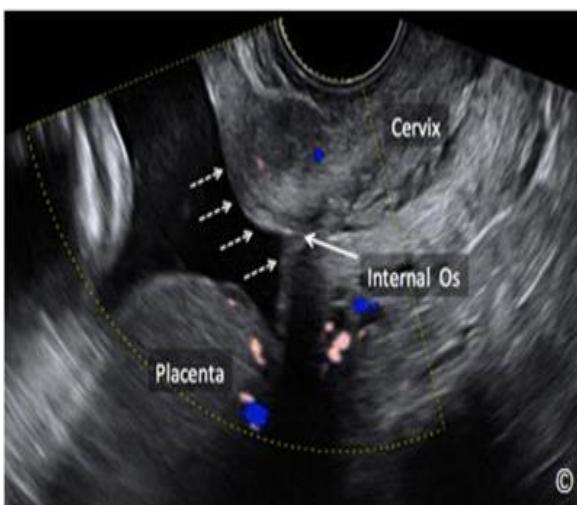


Figure 8.5: Transvaginal ultrasound with color Doppler at 32 weeks showing the absence of a vasa previa (dashed arrows) in a pregnancy that had a placenta previa in the second trimester. Note that the placenta is no longer covering the cervical internal os (labeled). The cervix and internal os are also labeled for image orientation.



Figure 8.6: Transvaginal ultrasound with color Doppler in the third trimester in a patient with placenta previa and placenta accreta. Note the presence of increased vascularity in the placenta and cervix (labeled – arrows).

transvaginal ultrasound approach in the evaluation of the placenta when a placenta previa is suspected(Habka ultrasoundka makaanka lagaliyo loogu qiimeeyo mandheerta marka laga shakiyo in mandheertu soo hormartay).

- A. isticmaal gudbiyaha makaanka lagaliyo(Use the transvaginal transducer).
- B. hubi in kaadihaysta hoyadu marantahay(Ensure that woman's urinary bladder is empty).
- C. gali gudbiyaha makaanka lagaliyo ilaa aad ka aragto minka afkiisa aadna u hubi afka hose ee makaanka(Insert the transvaginal transducer until you see the cervix, identify the internal cervical os).

- D. waa in gudbiyaha makaanka lagaliyo lagu joogteeyaa habka toosan(Maintain sagittal orientation of the transvaginal transducer).
- E. hubi cadaadiska ugu yar ee minka afkiisa(Ensure minimal pressure on the cervix).
- F. in lahelo geeska hoose ee mandheerta iyo in laqimeeyo xiriirka ay mandheertu la leedahay afka hoose ee minka(Localize the lower placental edge and assess its relationship to the internal cervical os).

VASA PREVIA(Xidido soo hormaray).

Xidada soo hormaray waxaa lagu qeexaa in xididada uur jiifku ay galaan inta u dhaxaysa Xubnaha uurjiifka iyo Afka hoose ee minka. Xidada uurjiifku waxay maraan xuubka uurjiifka ayagoo aan difaac lahayn,250 ba ee hoyoyinka dhalay 1 qof ayaa noqda xidada soo hormaray,Baaritaanka **ultrasoundka** lagaliyo makanka waxa lagu ogaadaa in Xididada uurjiifku ay kor saaranyiin Afka hoose ee minka waxayna xayna muhiim u tahay in la xaqijiyo Qulqulka dhiiga uurjiifka ultrasoundka makaanka la galiyo waxaa lagu arkaa in minka afkiisa ay ku taalo xariiq cadaan ah(echogenic lines),waxaana looga digayaa baaraha in xididada soo hormaray uu san ku cel celin Baritaanka ultrasoundka.

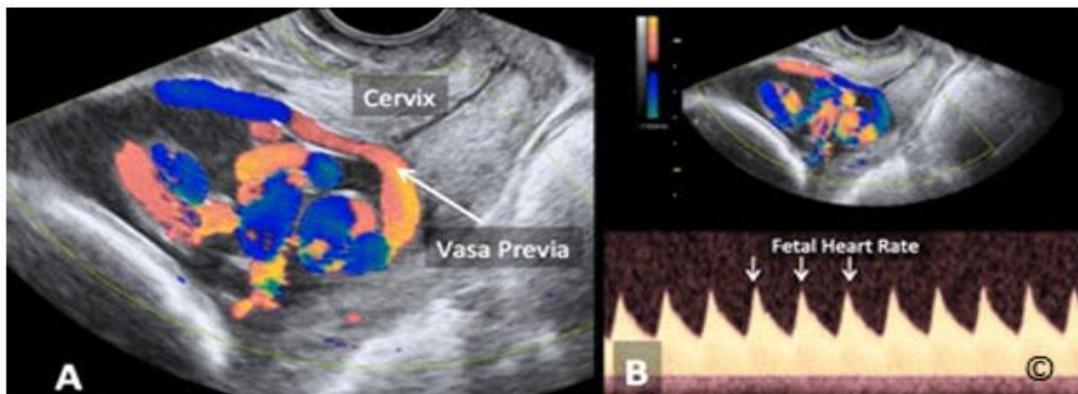


Figure 8.10 A and B: Transvaginal ultrasound in the third trimester in color (A) and Pulsed (B) Doppler in a fetus with vasa previa. Note that color Doppler (A) shows a vessel crossing in front of cervix (labeled as vasa previa) and pulsed Doppler (B) documents fetal heart rate in the vessel. The cervix is labeled in A.

Risk Factors for Vasa Previa(wax yabaha keena xidida soo hormaray)

- A.** in mandheertu hoos usoo dhacdo xiliga 2aad ee uurka(second trimester low-lying placenta).
- B.** in mandheertu soo hormarto xiliga 2aad ee uurka(second trimester placenta previa).
- C.** uurjiifka oo badan(Multiple pregnancies).
- D.** xariiq cadaana oo lagu arkay xabka ku daboolan minka afkiisa(Echogenic line seen along the amniotic sac overlying the internal os).

MORBIDLY ADHERENT PLACENTA(mandheerta oo ugu dhagta si aan caadi ahayn).

Mandheerta oo ugu dhagta si aan caadi ahayn waxay Qusaysaa in mandheertu si caadi aan ahayn ugu dhagto Darbiga minka,ereygaas waxaa loo isticmaalaa in lagu qeexo

1. placenta accreta Mandheerta oo si toos ah gu dhaegta Muruqa minka waana nuuca ugu badan oo 75% ku dhega muruqa minka.
 2. placenta increta Mandheerta oo dhex gasha muruqa minka waana nuuca 2aad ee ugu badan 18% ku dhega muruqa minka.
 3. lacenta percreta Mandheerta oo aad usii dhex gasha Murqaha minka una sii gudubta Xuubabka kale waana nuuca 3aad 7% ee ku dhega muruqa minka.
1. placenta accreta—Mandheerta oo si toos ah gu dhagta Muruqa minka waxaa loo qaybiyaa 3 qaybood.

- A.** Mid dhamaanteed ku dhegta minka(total placenta accreta).
- B.** Mid ku dhegta Qayb ka kmid ah Minka(partial placenta accreta).
- C.** mid meelo koo kooban uga dhegta minka(focal placenta accreta).

Risk Factors for Placenta Accreta(wax yabaha keena in mandheertu si aan caadi ahayn ugu dhagtonminka)

- A.** mandheerta oo soo hormarta(Placenta previa)
- B.** dada hooyada uurka leh oo weyn(Advanced maternal age)
- C.** hooyada oo ilma badan soo dhashay(Multiparity)

- D.** xiliga qalinka minka(Prior uterine surgery).
- E.** qalin lagu sameyey xuubka hoose ee minka(Endometrial ablation).
- F.** waa cudur la xiriira haar ku dhegtay minka(Asherman's syndrome).
- G.** Buro kusamaysanta murqaha minka wax dhib ahna aan lahayn(Leiomyomas).
- H.** minka oo aan si fiican u samaysmin(Uterine anomalies).
- I.** hooyada uurka leh oo Qabta cudurka dhiig kar(Hypertensive disorders in pregnancy)
- J.** sigaarka(Smoking).

ULTRASOUND FINDINGS OF PLACENTA ACCRETA(kumbuyuutarka uur ku jirta waxaa lagu ogaadaa mandheerta sida toos ka ah ugu dhagan Muruqa minka).

(1) 3da bilood ee ugu horeeye uurka

Gestational Sac/Godwayn oo biyo ku jiraan oo ku wareegsan Uur jiifka kaasoo ku dhegan Qaybta hoose ee minka wuxuu siyaadiyaa Qatarta ah in mandheertu ku wada dhugto muruqa minka,**Ultrasoundka** waxaa lagu ogaadaa Mandheerta dhamanteed ku dhugta muruqa minka ultrasoundkaas oo sheegay in meelo kamid ah Xididada uur jiifka aya banaanyihiin,ultrasoundku wuxuu sheegaa Haartii qaliinkii hore loogu sameeyey hooyada oo ku duu duuban Godka weyn ee biyuhu ku jiraan ee uurjiifka, dhammaan haarta & Godka biyuhu waxay yaaliin afka hoose ee minka, Hadii aan ladaaweyn haarta qaliinka ee ku dhugtey minka afkiisa waxay kartaa Mandheerta oo si aan caadi ahayn ugu dhugta minka sida mandheerta oo si toos ah Ugu dhugta muruqa minka,mandherta oo dhix gasha muruqa minka,Daaweynta ugu fiican ee haarta ku dhugta minka waxaa kamid ah: in lagu duro godka weyn ee biyaha Daawada loo yaqaan **Methotrexate** ayadoo la isticmaalaayo hagitaanka utrasoundka ee tooska ah.



Figure 8.13: Transvaginal ultrasound in the first trimester showing a gestational sac (labeled) implantation in the lower uterine segment. This pregnancy progressed to a placenta percreta. Modified with permission from the American Institute of Ultrasound in Medicine (18).



Figure 8.14: Transvaginal ultrasound in the first trimester in the same pregnancy as in figure 8.13. Note the presence of multiple irregular vascular spaces in and around the placenta (white circles). This pregnancy progressed to a placenta percreta. Modified with permission from the American Institute of Ultrasound in Medicine (18).

(2) Second and Third Trimester(Xiliga 2aad & Xiliga 3aad).

Xiliga dambe ee uurka **Ultrasoundka** waxaa lagu arkaa in lawaayey madowgii lagu yaqiinay qayta gaadle ee ay kujirto mandheertu,sidoo kale waxaa lawaayaa Meeshii nadiifka ahayd (clear space)ee u dhexeysey Mandheerta iyo Minka.

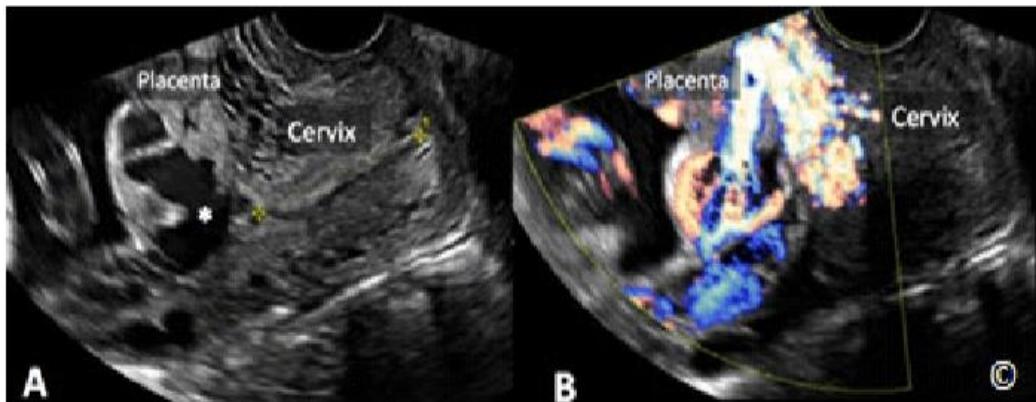


Figure 8.20 A and B: Transvaginal ultrasound in grey scale (A) and color Doppler (B) in a patient with placenta accreta. Note the presence of large placental lacunae (asterisk in A) and color Doppler showing extensive vascularity in B. Cervix and placenta are labeled.

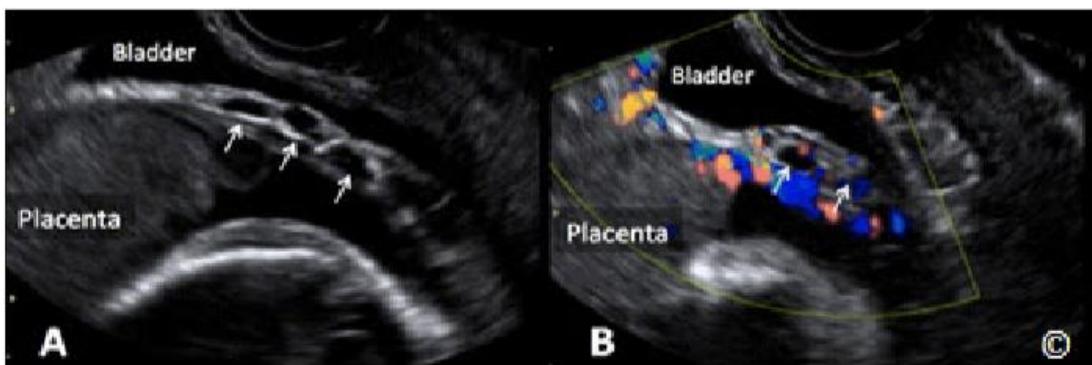


Figure 8.21 A and B: Transvaginal ultrasound in grey scale (A) and color Doppler (B) in a pregnancy with an anterior placenta accreta with abnormalities of the uterine serosa-bladder interface line. Note the presence of abnormal vascularity in the posterior wall of the bladder (A and B - arrows). Placenta and bladder are labeled.

Xiliga 3aad ee uurka Waxyabaha qaldan ee la arko waxaa kamid ah in xuubka minku Adkaado uuna noqdo mid aan sinayn,sidoo kale waxaa ku fida minka farqaha(villi)mandheerta.

Ultrasound Diagnostic Findings in Placenta Accreta(Baaritaanka Utrasoundka waxaa lagu ogaadaa mandheerta sida toos ka ah ugu dheggen Muruqa minka).

- A.** godka biyaha ee ku wareegsan uurjiifka wuxuu ku dhegenyahay qaybta hoose ee minka(Gestational sac implanted in the lower uterine segment).
- B.** haartii qaliinka oo ku dhegen minka afkiisa(Cesarean section scar implantation).
- C.** in uu dhumo madowgii caadiga ahaa(Loss of normal hypoechoic).
- D.** xidido badan oo la arko waqtiga 3aad ee uurka(Multiple vascular in the third trimester).
- E.** Xuubka minka oo aan caadi ahayn(Abnormality in uterine-serosa).

COMPLICATIONS OF PLACENTA ACCRETA(Dhibaatooyinka ka dhasha mandheerta sida toos ka ah ugu dhagta Muruqa minka).

Dhibaatooyinka ka dhasha mandheerta sida toos ka ah ugu dhegta Muruqa minka waxaa kamid Ah: Dhaawac ku yimaada xubna gudaha,Dhiigbax yimaad qaliinka ka dib, Xabka oo xira xididada,Xinjirowga dhiiga oo Qaldama,dhibaatooyin la xariira dhiiga lagu shubay,sanbabaha oo shaqayn waaya,xididada oo xinjiri xirto Qaliinka kadib,cudurada faafa,xubno badan oo shaqadooda gaba,Hooyada uurka leh oo geeriyoota.

MANAGEMENT OF PLACENTA ACCRETA(Sida loo maareeyo Mandheerta ku dhegtey minka).

1. in la hubiyo dhiigii qaliinka lagu samayn lahaa,dhiiga waa in si dhaqsi ah looga helaa qolka qaliinka si loogu shubo bukaanka markii loo baahdo.
2. Hubi kooxdaada kalkaaliyaasha,Suuxiyaasha,iyo kuwa qaliinka, si ay daryeel ugu sameeyaan Bukaanka,
3. Qaliinka waa in laga bilaabaa in la saaro minka(hysterectomy)hadii laga maarmi waayo.
- 4.Hadii mandheertu ku dhegto minka Asbuuca34-35 Hooyada waxa la duraa daawada (corticosteroid) taasoo ilaalinaysa in cadaadiska dhiigu Hoos u dhaco.

5.Si toos ah u isticmaal **ultrasoundka** hadii aad u baahato si aad u ogaato Mandheertu meesha ay taal.

6.Hadii lagasaarayo Minka waxaa haboon in lagabilaabo Afka hoose ee minka si loo yareeyo dhiig baxa.

7.marka loo samaynayo daawaynta waxaa haboon in lasiyo Qalajiye Xoogleh(broad-spectrum antibiotic) iyo in lala socdo Bukaanka.

PLACENTAL ABRUPTION(Mandherta soo Fuqday)

Mandheerta soo fuqday waxaa lagu qeexaa mandheerta oo kasoo fuqday minka,Calaamada ugu wayn ee lagu yaqaan mandheerta soo fuqday Waa Xanuun daran(painful bleeding),Dhiigbax,Minka oo soo aruura(uterine contractions). 50% **ultrasoundka** waxaa lagu ogaadaa dhiig bax markii mandheertu soo fuqdo,**Ultrasoundka** waxaa lagu qiimeeyaa Mandheerta wuxuuna si fiican kaaga caawiyaa Baaritaanka Hadii dhiig buxu Mandheerta Yahay,**Ultrasoundka** waxaa lagu ogaadaa mandheerta soo fuqday waxana la arkaa Midab madow(hypoechoic)ah kaa soo u eg Dhiig xinjiroobay.

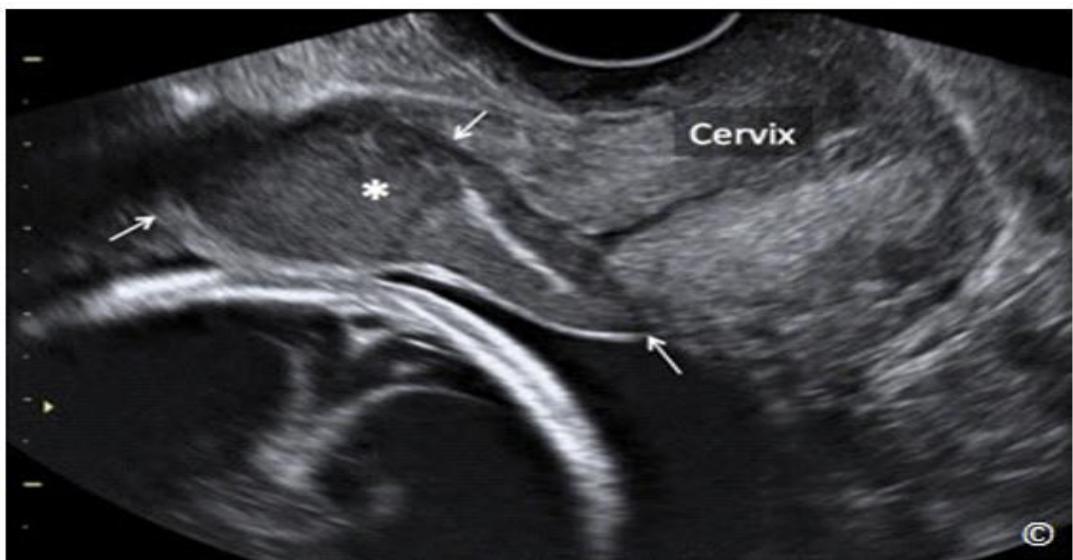


Figure 8.22: Transvaginal ultrasound of a pregnancy with a placental abruption. Note the presence of a blood clot (asterisk and arrows) behind the membranes and in front of cervix (labeled). Note that ultrasound can miss a placental abruption on many occasions – see text for details.

Cutubka 11aad:

AMNIOTIC FLUID ASSESSMENT(In laqiiimeeyo Dareeraha Xabka ah).

HORDHAC

isha aas aasiga ah ee laga helo Dareeraha Xabka xiliga 2aad iyo 3aad ee uurka Waa kaadida uur jiifka. Meesha laga helo Xabka 3da bilood ee ugu horaysa uurka wali lama yaqaan, Ayadoo la isticmaalayo Midab baaritaan oo lagaliyo godka Xabka waxaa la arkay in xabku siyaado xiliga uurka ee asbuuca 39-40aad, Baaritaanka **ultrasoundka** waxaa lagu qiimeeyaa Muga Dareeraha Xabka waana qaybta ugu muhiimsan ee aas aaska u ah Baaritaanka Hooyada uurk leh. 2ba baarirtaan Ayaa ugu caansan marka la isticmaalayo **Ultrasoundka** waxayna kala yihiin. **1.** single maximal vertical pocket (MVP) wuxuu quseeyaa in ultrasoundka 1hal mar si toos ah lagu cabiro Dareraha xabka. **2.** amniotic fluid index (AFI) marka la isticmalayo cabirkaan **Ultrasoundka** ayaa minka u qaybiya 4qaybood oo isla eg qayb walba xabka ku jira gooni ayaa loo cabiraa.



Figure 9.1: Transducer orientation for the measurement of amniotic fluid. Note that the transducer is in sagittal orientation on the maternal abdomen and is maintained perpendicular to the floor while scanning.

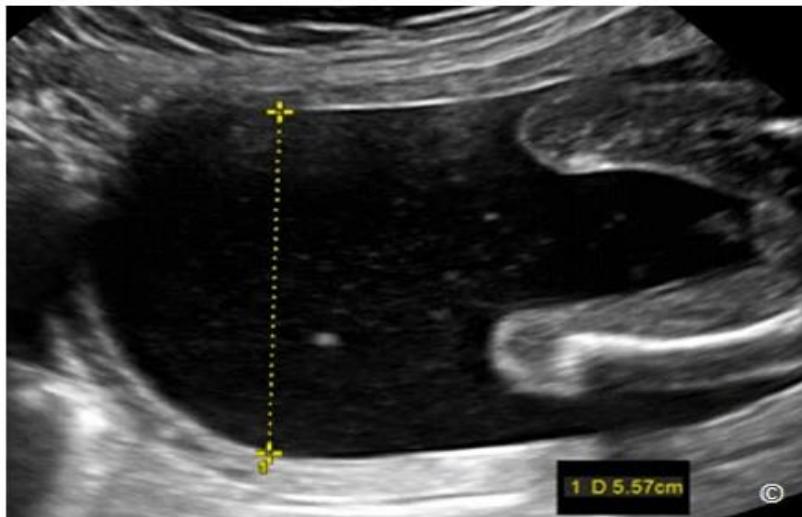


Figure 9.2: Maximal vertical pocket measurement of amniotic fluid. The quadrant in the uterus with most amniotic fluid is chosen and the deepest portion of that pocket is measured in a vertical line measurement (normal here at 5.5 cm). Note that the pocket is free of cord and fetal parts and is at least 1 cm in width.

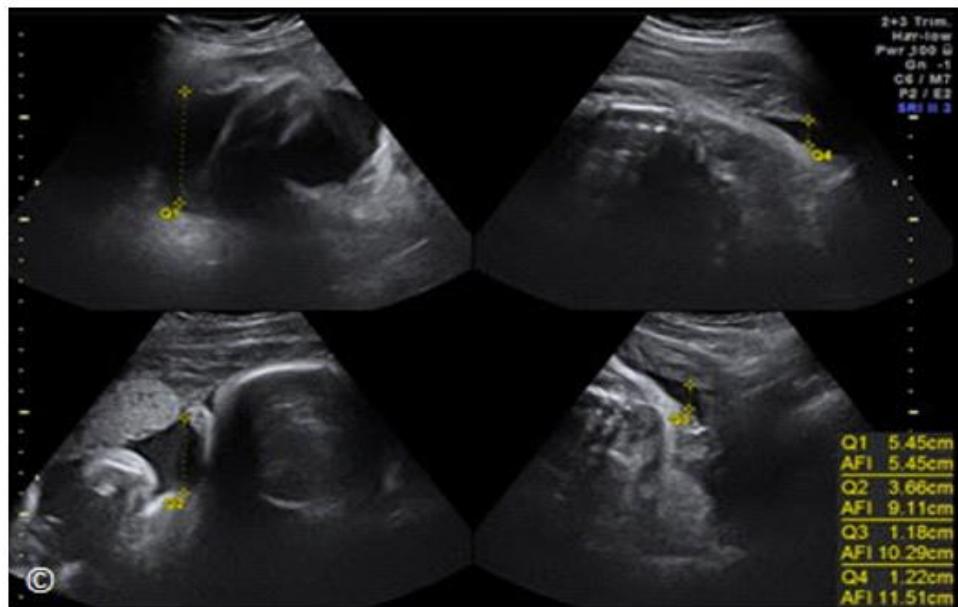


Figure 9.3: Measurement of amniotic fluid using the Amniotic Fluid Index (AFI) technique in a pregnancy with normal fluid. Note the measurements in four quadrants (Q) of the uterine cavity. AFI is determined by adding the four-quadrant measurements (normal range at 11.5 cm). See text for details.

OLIGOHYDRAMNIOS(Biyaha Xabka oo Yarada)

Waa muga biyaha xabka oo yaraada marka loo fiirsho Dada uurka.

Common Causes of Oligohydramnios(Waxyaabaha ugu caansan ee sababa in Biyaha Xabku yaradan)

- 1. Inuu Dilaaco Xuubka biyaha Xabka(Premature rupture of membranes).**
- 2.inay si aan caadi ahayn u samaysmaan Habka taranka kaadi mareenka(Genitourinary abnormalities).**
- 3. mandheerta ku jirta minka oo aan si caadi u shaqaynayn(Uteroplacental insufficiency).**
- 4. uurka oo waqtigiisu dheeraado(Postdates pregnancies).**



Figure 9.4: Oligohydramnios diagnosed by the Maximal Vertical Pocket (MVP) method. Note that the MVP measured 1.2 cm in this pregnancy.

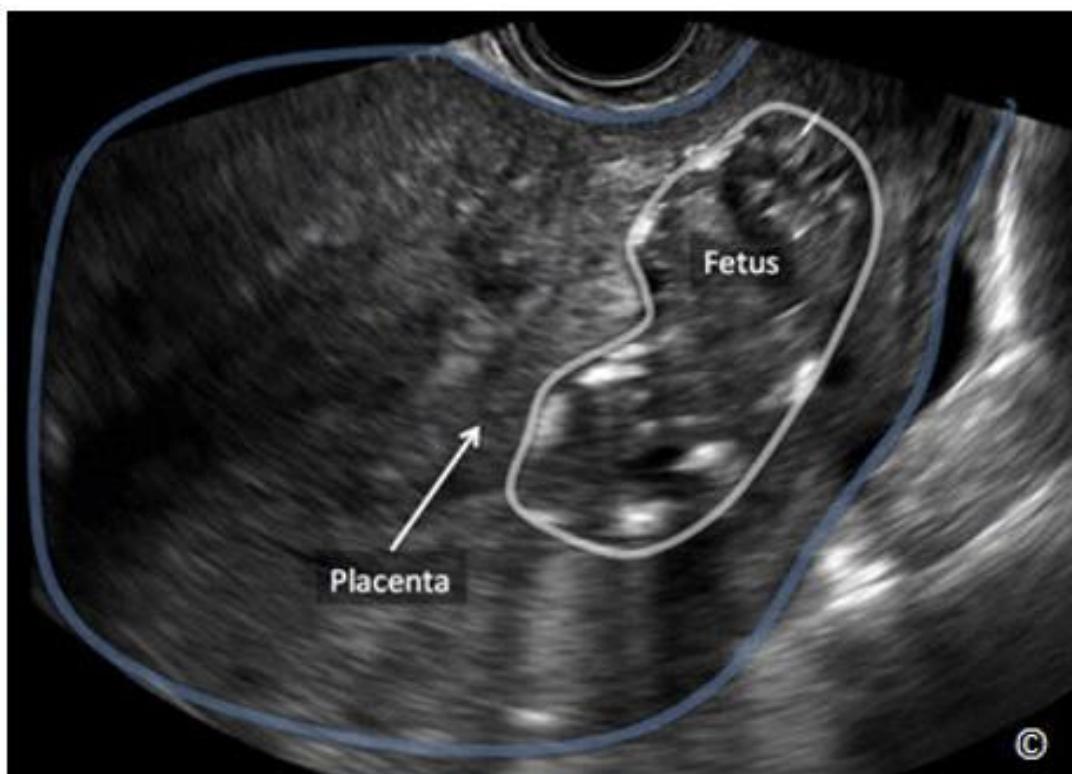


Figure 9.5: Anhydramnios in a fetus with bilateral renal agenesis. Note the total absence of amniotic fluid resulting in suboptimal ultrasound visualization. The white line is drawn around the fetus and the blue line is drawn around the uterus. The placenta is labeled.

POLYHYDRAMNIOS(Biyaha Xabka oo Bata)

Waa muga biyaha xabka oo Bata marka loo firsho Da,da uurka.

Common Causes of Polyhydramnios(Waxyaabaha ugu caansan ee sababa in Biyaha Xabku Batan).

1. Sonkorow hore iyo mid la xariira uurka(Gestational and pregestational diabetes)
2. qaab dhismeedka jirka iyo hida sidaha oo si aan caadi ahayn u samaysma(Fetal structural and chromosomal abnormalities).
3. uurjiifka oo caabuq ku dhaco(Fetal infections).
4. uurjiif badan oo uurka hooyada ku jira(Multiple pregnancies).
5. cuduro waxa keena aan la aqoon(Idiopathic).



Figure 9.6: Polyhydramnios diagnosed by the Maximal Vertical Pocket (MVP) method. Note that the MVP measured 10.1 cm in this pregnancy.

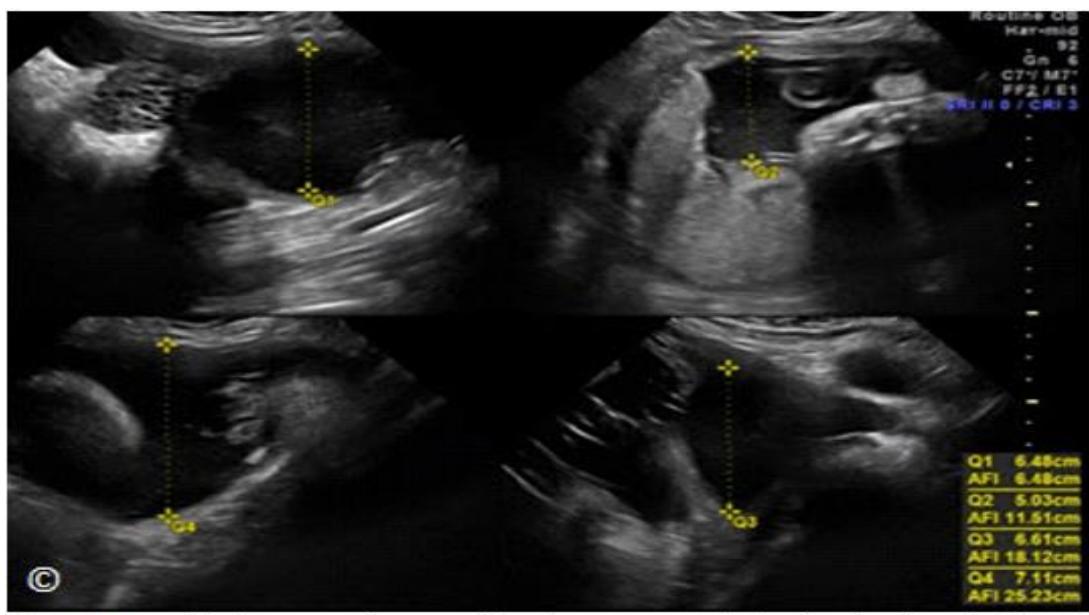


Figure 9.7: Polyhydramnios diagnosed by the Amniotic Fluid Index (AFI) method. Note that the AFI measured 25.2 cm in this pregnancy.

Cutubka 12aad:

ULTRASOUND OF THE NON-PREGNANT UTERUS

(ultrasoundka minka aan uurku kujirin)

Ultrasoundku waa midka ugu wanagsan ee lagu qiimeeyo Minka, waana midka ugu horeeya ee la isticmaalo markii qofka lagu arko Cudurada minka ama xubnaha ka ag dhow minka, **Ultrasoundka** ayaa sawiro looga qaadaa minka ayadoo loo samaynayo habka ah in makaanka lagaliyo(Transvaginal) ama lagasaarayo uur ku jirta kore(Transabdominal) taasoo looga dan leeyahay in lagu qiimeeyo Cudurada minka.

PREPARATION FOR THE EXAMINATION(Habka loo diyaariyo baaritaanka)

Inta badan baaritaanka ultrasoundka waxaa lagu hubiyaa minka ayadoo la isticmaalaayo habka ah in **Gudbiyaha ultrasoundka** lagaliyo makaanka waxaa kaloo loo baahan yahay in **kaadihaysta** bukaanka ay marantahay,in bukanku u **jiifo dhabarka,lugahana uu kor uqaado**. Si loo sameeyo baaritaan sax ah.

Indication of Pelvic Ultrasound Include(wax yabaha natusinaya in ultrasoundka la saaro miskaha)

Waxaa kamid ah

- 1.** miska xanuun(Pelvic pain).
- 2.** Xanuun xiliga caadada(Dysmenorrhea).
- 3.** caadadii in lawaayo(Amenorrhea).
- 4.** Dhiigbax xiliga caadada(Menorrhagia).
- 5.** dhiig bax minka ah oo aan caadi ahayn(Menorrhagia).
- 6.** qiimayn, kontorol ,iyo in ladaaweyyo ilma la,aanta bukaanka(Evaluation, monitoring, and/or treatment of infertility patients).
- 7.** caadada oo dib u dhacda(Delayed menses).
- 8.** calamadaha caabuqa miskaha(symptoms of pelvic infection).
- 9.** in la qiimeeyo cudurada minka ee lagu dhasho(Evaluation of congenital uterine anomalies).
- 10.** dhiig aad u badan oo aan caadi ahayn oo kasocda minka(Menometrorrhagia).

Ultrasound FEATURES OF THE NORMAL UTERUS

(Sawirada ultrasoundka ee minka caadiga ah).

Minku waa xubin muruq ah wuxuuna yaalaa miskaha saxda ah inta u dhaxaysa qaybta hore ee kaadi haysta iyo qaybta dambe ee malawadka, meesha banaan ee u dhexaysa minka iyo maawadka, waa qaybta dambe ee cul-de-sac. Sawirkii ugu horeeyey ee laga qaaday minka waxaaa lagu arkay xariiq cadaan ah oo loo yaqaaan Endometrium xuubka hoose ee minka waxaa kaloo lagu arkaaa, myometrium muruqa minka, waxaa kaloo lagu arkaa minka afkiisa, iyo kaadi haysta. **Ultrasoundka** waxaa lagu cabiraa minka. Minka hooyada aan waligeed wax dhalin cabirkiiisu waa 6-8.5cm, hooyada dhashooydaa minkeeda cabirkiiisu waa 8-10cm. Myometruim(muruqa minka) waxaa sameeya muruq jilacsan iyo xididada dhiiga, marka lagu fiiriyo Ultrasound muruqa caadigaa ee minka cadaan kiisu(less echogenic)waa yaryahay marka loo fiiriyo Xuubka hoose ee minka.

Myometruim → Muruqa caadigaa ee minka waxaa loo qaybiyaa 3lakab.

1. lakabka gudaha(iner layer) waa qafiif waana madowyahay(hypoechoic).
- 2.lakabka dhexe(middle layer) waa adagyahy waana isku eg yahay(homogeneous).
3. Lakabka kore (outer layer) waa qafiif waana madow yahay(hypoechoic).

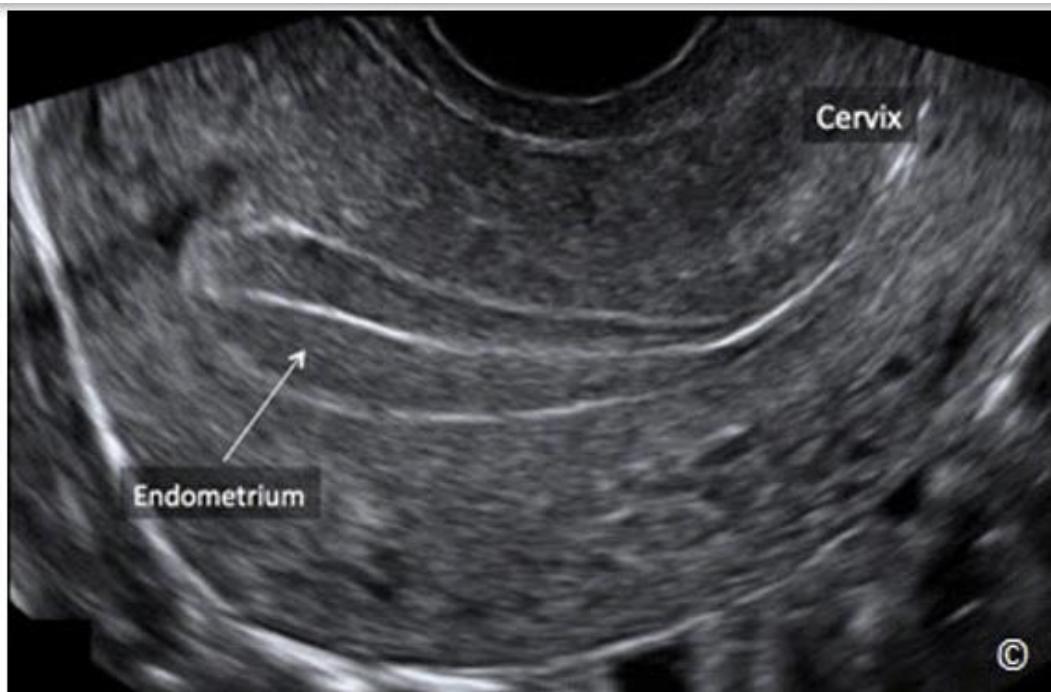


Figure 11.14: Transvaginal ultrasound of a sagittal view of the uterus in the late proliferative, near ovulation phase of the menstrual cycle. Note the accentuated thick trilaminar endometrium (labeled). Cervix is labeled for image orientation. Image is courtesy of Dr. Bernard Benoit.

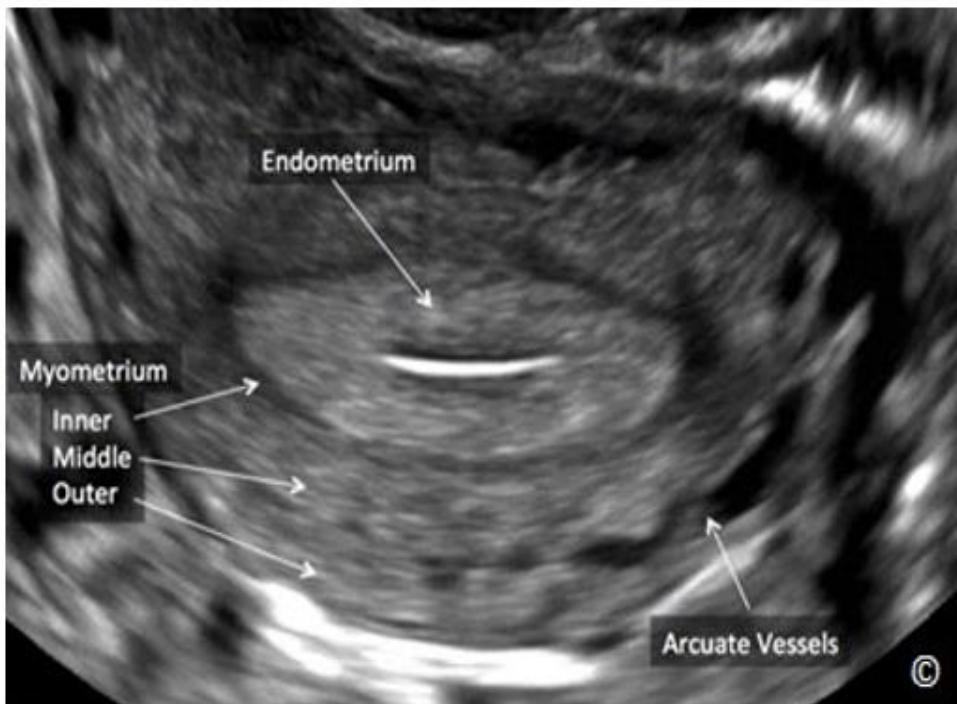


Figure 11.12: Transvaginal ultrasound of a transverse view of the uterus showing the three myometrial layers. Note the inner thin and hypoechoic layer that abuts the endometrium (labeled), the middle layer that is thick and homogeneous and the outer layer that is slightly less echogenic than the middle layer (labeled). Note that the arcuate vessels (labeled) separate the middle from the outer myometrial layers.

ADENOMYOSIS(burada muruqa minka)

Waa xaadalad guud oo inta badan saamaysa Haweenka ku jira sanadaha Dambe ee taranka, 30% waxaa laga helaa guud ahaan haweenka,halka 70% laga helo haweenka minka laga saaray, ADENOMYOSIS(burada muruqa minka) waxaa lagu qeexaa xuubka hoose ee minka oo meelkale kusamaysmay kadibna isku bedeley Qanjir wuxuuna dhaliyaa in muruqa minka uu waynaado,Bukaanada qaba xanuunkaan Wax calaamada malahan(asymptomatic)laakiin waxaa lasheegaa inay laxariiraan calaamadaha soo socda Sida.

A. xanuun xiliga caadada(dysmenorrhea). **B.** xanuun waqtiga Galmada(dyspareunia). Adenomyosis waxaa lagu arkaa meelo koo kooban oo minka ka mid ah waxaana loo yaqaan Adenomyoma(Buro isku qasan oo ku dhacda minka).

Ultrasound Findings Adenomyosis-Ultrasoundka waxa lagu ogadaa burada muruqa minka.

- A.** Minka oo weynada(Globular enlargement of the uterus).
- B.** Muruqa minka oo lagu arko meel bannan oo midab lahayn(Anechoic spaces in the myometrium).
- C.** qaybta hore iyo qaybta dambe ee minka oo kala duwan(Asymmetric anterior and posterior uterine wall thickening).
- D.** muuqaalka minka oo kala duwan(Heterogeneous echo texture).

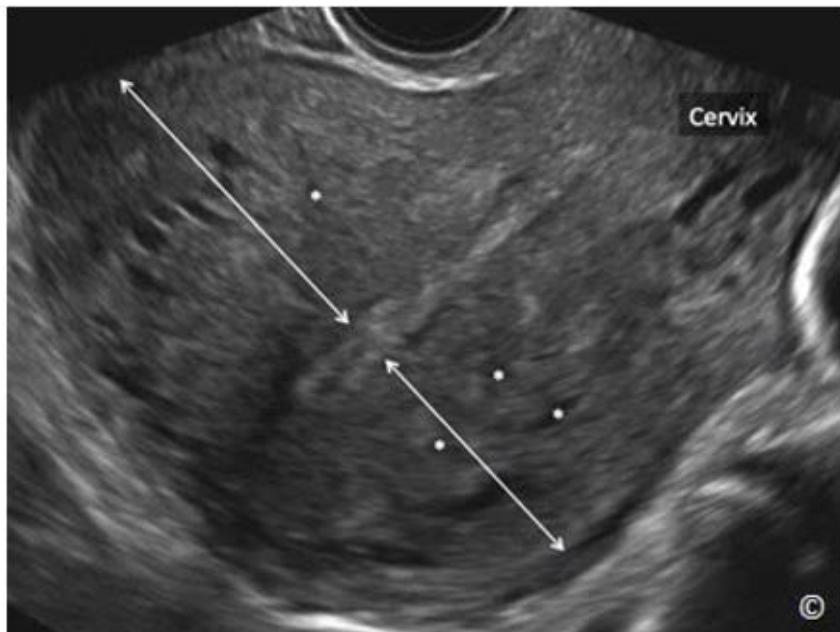


Figure 11.17: Transvaginal ultrasound of the uterus in sagittal view in the presence of diffuse adenomyosis. Note the globular enlargement of the uterus, the asymmetric anterior and posterior wall thickness (arrows) and the presence of multiple anechoic spaces within the myometrium (asterisks). The cervix is labeled for image orientation. See text and **Table 11.2** for more details.

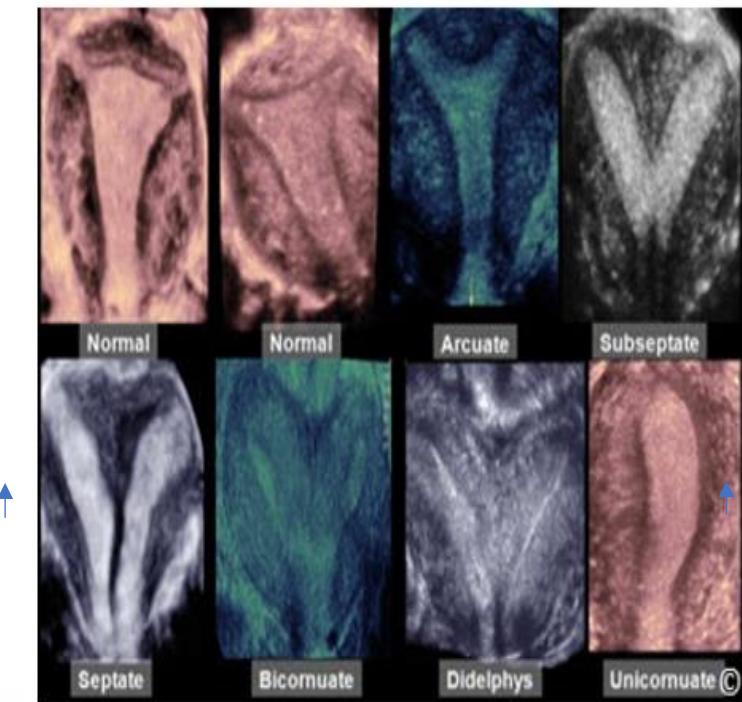


Figure 11.20: Midcoronal planes of uteri obtained from 3-D ultrasound volumes in normal and abnormal uterine abnormalities. Note the clear depiction of the serosal and endometrial fundi and lower-uterine segments, which allow for differentiation of various mullerian anomalies. See **Table 11.3** for details. Modified with permission from the American Institute of Ultrasound in Medicine (18).

ADENOMYOSIS CONGENITAL UTERINE MALFORMATIONS

CONGENITAL UTERINE MALFORMATIONS (Minka oo si qaldan u samaysmay oo lagu dhasho)

Kiisaskii hore ee hab dhiska Taranka sida qaldan u samaysmay lama aqoon waxa sababay, laakiin 8-10% waxaa kusoo laalaaban jiray in uur koodu halaabo,minka sida qaldan u samaysmay ee lagu dhasho wuxuu la xariiraa inay badato qatarta Dhalma laantu sida, uur jiifka oo dhinta(miscarriage),uur jiifka oo waqtii hore dhasha(premature birth),uur jiifka oo soo dhaca(fetal loss). Baaritaanka saxda ah ee cudurkaan ku dhaca minka wuxuu leeyahay muhiimad caafimad iyo in Qof ka loo sameyo qaliin Dayactir ah,Transvaginal **Ultrasoundka** makaanka lagaliyo wuxuu ku tusiyaa baaritaanka ugu fiican ee Minka.

LEIOMYOMAS(burada minka ee aan faafin)

Waxaa kaloo loo yaqaan buradaan(Fibroid) waa burada ugu caansan burooyin aan faafin ee ku dhaca haweenka aan uurka lahayn(gynecology) waxaana lagu arkaa 20-30% Hameenka da doodu kawayntahay 35,dadsa 50ka sano ah 70% waxay ku dhacdaa haweenka cad,cad iyo 80% na haweenka mad madow. 30%waxaa larkaa calaamadaha Buradaan. **BURADA MINKA** ee **AAN FAAFIN** waxay ka kooban tahay. **A.** Muruqyo jilicsan(smooth muscle). **B.** unugyo koritaan samaynaaya(connective tissue growth). **C.** hormone(estrogen). Buradan waxa lagu yaqaan wax kuusan oo lataaban karo ama minka oo weynada, marka lasamaynayo baaritaanka Hooyada aan uurka lahayn, waxaana la xiriira dhiigbax iyo miska xanuun waana calaamadaha ugu waa weyn ee buradaas.

Ultrasoundka waxaa lagu arkaa mesha ay kutalo burada minka ee aan faafin

- A.** Intramural(muruqa minka dhexdiisa).
- B.** Subserosal(Minka banaankiisa)
- C.** Submucosal(Xuubka hoose ee minka).
- D.** Pedunculated(ku dhegen darbiga minka).
- E.** Intracavitory(minka afkiisa).
- F.** Parasitic(buro meel kale ka timid).

Types of Leiomyoma Degeneration

(nuucyada Burburka burada minka ee aan faafin)

- 1.** Yaransho(Atrophic)
- 2.** Hyaline(unugyo burburay).
- 3.** Carneous(Burbur dhiig iyo caabuq).
- 4.** Myxoid(malax iyo unugyo burburay oo isku qasan).
- 5.** Calcific(kaalshiyaam ka buxa minka).
- 6.** Cystic(dareere ku jira mesha burburtay).
- 7.** Hemorrhagic(dhiigbax)



Figure 11.27: Transvaginal ultrasound of a midsagittal plane of the uterus with schematic overlay of leiomyomas to describe their anatomic locations. 1 = Intracavitory, 2 = Submucosal with > 50% into the endometrial cavity. 3 = Submucosal with < 50% into the endometrial cavity. 4 = Intramural. 5 = Subserosal. 6 = Pedunculated. 7 = Parasitic.

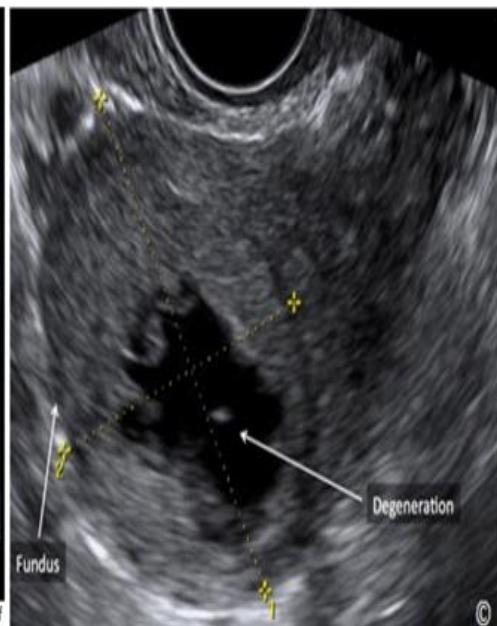


Figure 11.32: Transvaginal ultrasound showing a hyaline degeneration of an intramural leiomyoma (labeled). The uterine fundus is labeled for image orientation.

ENDOMETRIAL ABNORMALITIES(Lakabka hose ee minka oo aan caadiga ahayn).

Abnormal Uterine Bleeding(dhiigbaxaa minka ee aan caadiga ahayn).

Dhiig baxaa aan caadiga ahayn: waxaa lagu Qeexaa caadada oo si qaldan u socota Hooyooinka ku jira da,da taranka,Dhiig baxaa minka ee aan caadiga ahayn wuxuu la xariiraa in ay qaldamaan Muggii(volume),waqtigii(duration),tiradii(frequency)iyo socodka caadada oo aan sax sanayn. **Ultrasoundka** la galiyo makaanka(trasnvaginal ultrasound) waxaa lagu qiimeeyaa lakabka minka iyo inuu jiro dhiigkasocda hooyada kujirta da da taranka. Sidoo kale **ultrasoundka** lagaliyo makaanka waxaa lagu qiimeeyaa hadii ay buro ku jirto lakabka hoose ee minka.

Endometrial Hyperplasia and Cancer(lakabka minka oo waynaada iyo kansarka)

Kansarka lakabka hoose ee minka waa midka ugu caansan kasarada ku dhaca Haweenka aan uurka lahayn, calaamad ugu weyn ee la arko waa dhiigbax ka yimada makaanka, Baaritanka ultrasoundka lagaliyo makaanka waxaa lagu ogaaday in uu adkaado lakabka hoose ee minku uuna gaarey 4mm ama kayar ayadoo ay lasocto dhiigbaxa haween dhaqmaad,deyska ah.

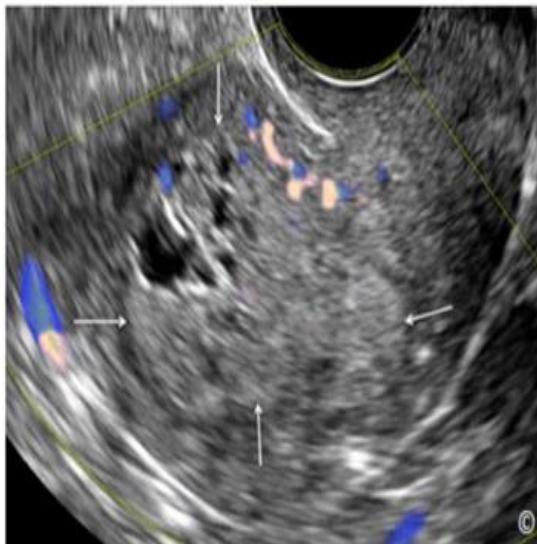


Figure 11.40: Transvaginal ultrasound of a sagittal plane of the uterus in a woman with endometrial cancer. Note the enlarged, heterogeneous and thickened endometrium (arrows).

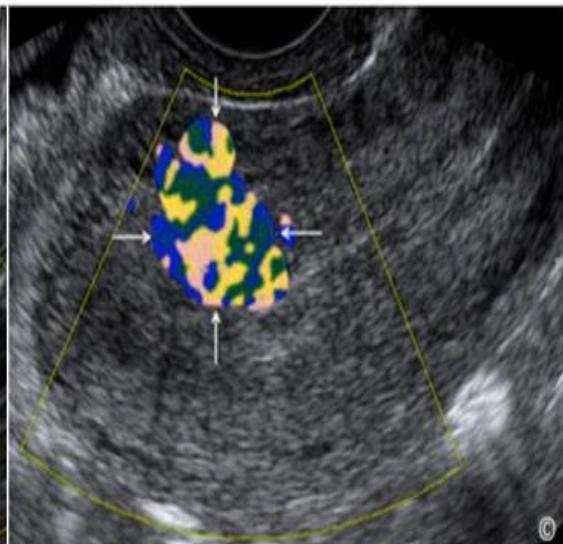


Figure 11.44: Transvaginal ultrasound with color Doppler of a sagittal plane of the uterus showing the same arterio-venous malformation (AVM) (arrows) as that in [Figure 11.43](#). Note the presence of blood flow within the AVM with turbulence and aliasing.

Cutubka 13aad:

**ULTRASOUND EVALUATION OF THE ADNEXAE
(ultrasoundka waxaa lagu qiimeeyaa wax
yaabaha ku dhegen minka).**

INTRODUCTION (HORDHAC).

Ultrasoundku waa midka ugu wanaagsan ee lagu sameeyo sawirada,si loo qiimeeyo Miskaha(pelvis),minka(uterus) iyo ugzan sidaha(ovaries) hadii cudur kujiro. Gudbiyaha lagaliyo makaanka(transvaginal transducer) waxaa si qoto dheer loogu ogaadaa xubnaha ku jira miskaha, ultrasoundka waxaa sidoo kale lagu qiimeeyaa hadii dhibaatooyin ka jiraan xubnaha ku dheggen minka.

THE NORMAL OVARY(ugxaan sidaha caadiga ah)

Habka ugu fiican ee lagu qiimeeyo ugxaan sidaha waa in gudbiyaha ultrasoundka lagaliyo makaanka kaa soo ah xalka ugu fiican ee lagu helo muuqaal dhamaystiran. Habka gudbiyaha loo galiyo makaanka waa midka ugu wanaagsan ee lasameeyo markii kaadi haystu maran tahay(empty bladder) ugxaan sidaha caadiga ah(normal Ovary) waa fudahay in la baaro xiliga taran, hadii ugxaan siduhu soo daayo ugxaanta **ultrasoundku** wuxuu ka duwaa ama kasaaraa ugxaan sidaha xubnaha kale ee ku jira miskaha,ugxaan sidaha caadigaa wuxuu kuyaalaa miskaha waxaana ku dhejiya seedka weyn ee loo yaqaan(Braord ligament).

Qodobada soo socda waxa lagu ogaadaa meesha uu ku yaalo ugxaan sidaha caadiga ahn ayadoo la isticmaalayo gudbiyaha ultrasoundka makaanka la galiyo.

1. geli gudbiyaha makaanka lageliyo soona hel Minka(Insert the transvaginal transducer and obtain the uterus).
2. wareeji gudbiyaha makaanka lageliyo 90 degree soona hel minka(Rotate the transvaginal transducer ninety degrees and obtain the uterus).
3. dhig gudbiyaha dhinaca midig ee bukaanka oo fiiri ugxaan sidaha midig,uguna haay gudbiyaha sidhow(your probe towards the right side of the patient, looking for the right ovary – the handle of the transducer should get close).

Cabirka caadiga ah ee ugxaan sidaha waa kala duwan yahay waqtiga caadada marka loo eego da,da haweenka,ugxaansidaha waxaa lagu cabiraa ultrasoundka 3 cabir oo dhinac walba ah sida Ballac(width),Dherer(Length),Qoto(Depth). Ugxaan siduhu wuu u eg yaahy ukunta doorada(like a chicken egg).

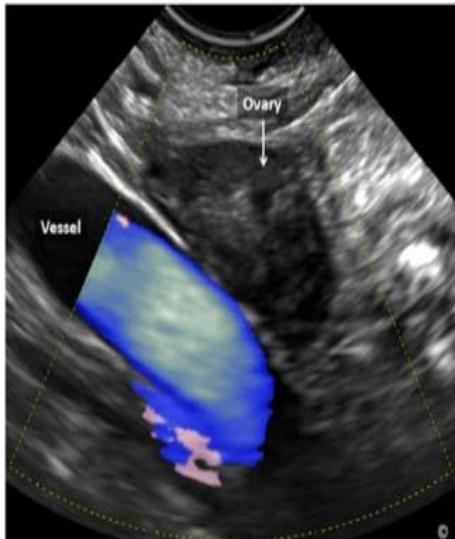


Figure 12.2: Transvaginal ultrasound of a normal ovary (labeled). Note the anatomic location of the ovary, overlying the hypogastric vein (labeled as vessel).



Figure 12.5: Transvaginal ultrasound of the uterus in transverse orientation looking for the right ovary. Note that if you follow the ovarian ligament (labeled), this commonly leads you to the ipsilateral ovary.

Common Benign Adnexal Masses in Reproductive Age Group

(Burooyinka caanka ah ee aan faafin ee xubnaha ku dhagan minka oo lagu arko Haweenka kujira da,da taranka).

1. Simple Cyst(kuus biyo kujiraan).
2. Hemorrhagic Cyst(kuus dhiig ku jiro).
3. Dermoid Cyst(kuus ay kunjiraan dareere iyo timo).
4. Hydrosalpinx(Tuboovinka minka oo biyo xireen).
5. Endometrioma(unugyada lakabka hoose ee minka oo galay ugxaansidaha).
6. Tubo-ovarian Abscess(maal ku jirta tuboovinka minka iyo ugxaansidaha).

Simple Cyst(kuus biyo kujiraan)

Dabeecadaha lagu yaqaan ugxaan sidaha biyuhu ku jiraan marka la siticmaalo qalabka **ultrasoundka** waxaa kamida wareeg qafiifaa oo leh darbijilicsan iyo codka oo si fiican u gudba. Dareeraha gudihiisa wax dhib ah kama muuqdaan, wax soo taagana majiraan marka la isticmaalo qalabka ultrasoundka biyaha meesha kujiraa waxay u muuqdaan Humaag madow(anechoic) taasoo cadayn u ah in dareerahaasi nadiif yahay(clear), Hadii ultrasoundka lagu arko wax kasoo taagtaagan(projections)biyaha gudahooda

waxay caalamad u tahay inuu jiro kansar(malignancy) waxaana bukaanka loo diraa Qof qibrad u leh Ultrasoundka(experienced sonographer or sonologist).



Figure 12.8: Transvaginal ultrasound of a simple ovarian cyst. Note the presence of a thin round, smooth capsule (labeled) with no papillary projections and with excellent sound transmission. Note the presence of ovarian tissue (asterisk).

SIMPLE CYST

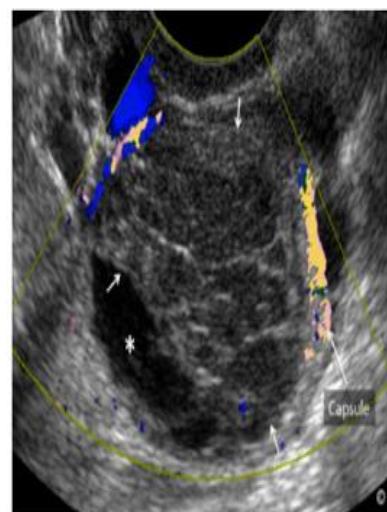


Figure 12.13: Transvaginal ultrasound with color Doppler of the hemorrhagic cyst in figure 12.11. Note the retraction of the blood clot (asterisk) with the development of a fluid layer. Color Doppler shows vascular flow in the capsule (labeled) but none within the blood clot (arrows).

HEMORRHAGIC CYS

Hemorrhagic Cyst(kuus dhiig ku jiro)

Waxa kaloo loo yaqaan dhiigbaxa kuuska ugxaan sidaha, waana dhiigbax ka yimaada gudaha kuuska ugxaan sidaha, dhacdadaas waxaa lagu arkaa haweenka ayagoo ka cabanaaya xanuun daran oo kaqabanaaya dhinaca hoose ee midig ama bidix ee uur ku jirta(abdomen) dhiig baxa kuus kaas si kumeel gaar ah waxaa lagu arkaa in Xinjirow ku samaysmay ugxaan sidaha, kuuska dhexdiisa in lagu arko xinjir burburtay,falgal xinjirow. **Ultrasoundka** waxaa lagu arkaa walax adke ah oo ka muuqata ugxaan sidaha, adkahaas oo uu ku wareegsan yahay Darbijilicsan kaasoo codka si wanaagsan u gudbiya.

Characteristics of an Ovarian Hemorrhagic Cyst (dabecadaha dhiig baxa kuuska ugxaan sidaha)

A. codka oo si fiican u gudba(Excellent sound transmission).

B. heerka dareeraha adkaha(Solid – Fluid level).

Endometrioma(unugyada lakabka hoose ee minka oo galay ugxaansidaha).

Waa derbi Qafiif ah oo adag oo ka muuqda kuuska ugxaan sidaha,dabecada lagu yaqaana waa inuu u muuqdo sida dhalada oo kale “ground glass”waana isku egyahay, jabaqnoshadiisuna waa hoosaysaa. Baaritaanka ultrasoundka waxaa lagu arkaa midab cadaan ah(Hyperechoic) kaasoo loo yaqaaan unugyada lakabka hoose oo galay ugxaan sidaha.

Ultrasound Characteristics of Endometriomas(dabecadaha ultrasoundka ee lagu yaqaano unugyada lakabka hoose ee minka oo gala ugxaan sidaha).

A. codka oo si fiican u gudba(Excellent sound transmission).

B. sida dhalada u muuqda(ground glass appearance).

C . midab cadaan ah(Hyperechoic foci).



Figure 12.15: Transvaginal ultrasound with color Doppler of an endometrioma showing a unilocular mass with ground glass appearance. Note the absence of vascularity within the content of the mass on low velocity scale (5 cm/sec) color Doppler.

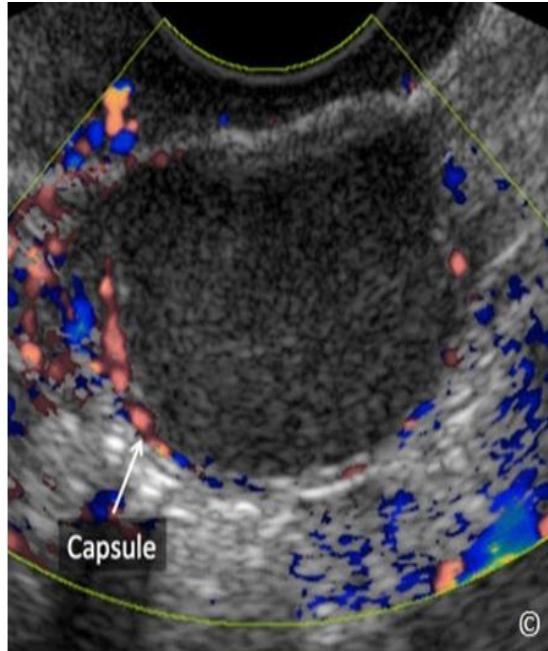


Figure 12.18: Transvaginal ultrasound with color Doppler of an endometrioma showing the absence of vascularity within the content of the mass on low-velocity color Doppler. Vascular flow can be demonstrated in the capsule (labeled).

Dermoid Cyst(kuus ay kunjiraan dareere iyo timo).

Waxay ka yimaadeen asal ahaan unugyada taranka ee ugxaan sidaha,xanuunkaani wuxuu ku dhacaa dadka da,da yar muuqaalka **ultrasoundka** waxaa lagu arkaa kuus biyo ku jiraan oo cadaan ah iyo kuus adke ah ,gudaha hoose ee kuuskaas waxaa lagu arkaa hoos,waxaana loo yaqaan hooskaas iceberg.Calaamaha lagu ogaado ultrasoundka waxaa kamid ah cadaan iyo timo isku jira kuwaas oo samaynaya jabaq noqosho,cadaanka iyo timaha isku jira waxa laga helaa ugxaan sidaha,muuqaalkooda iyo cabirkoodu waa kala duwan yahay. Qaar koodna waxay leeyihiin wax dhaadheer oo soo taag taagan.

Ultrasound Characteristics of Dermoid Cysts

(Dabeecadaha ultrasoundka ee kuus ay kunjiraan dareere iyo timo).

A. codku si fiican uma gudbiyan(Poor sound transmission)

B. Buro adag(solid tumors), waxa ku jira oo kala duwan(heterogeneous content).

C. muqal caddaanaa(White echogenic).

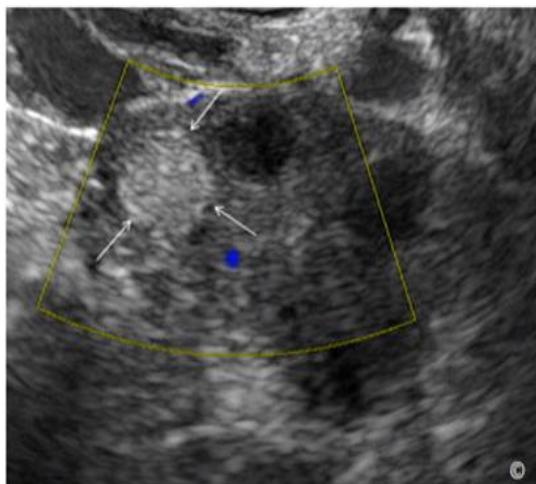


Figure 12.22: Transvaginal ultrasound with color Doppler of a small dermoid (arrows), located within the ovary.

Dermoid Cyst

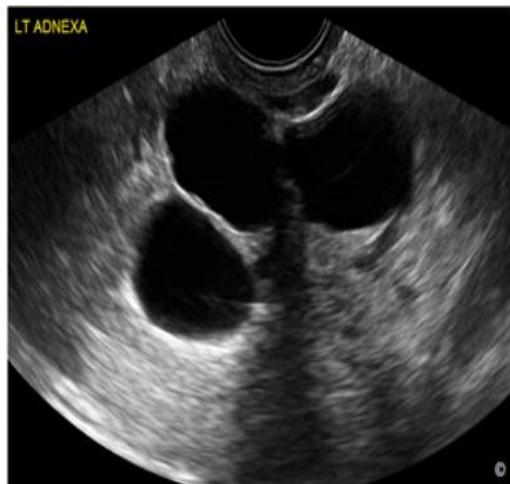


Figure 12.27: Transvaginal ultrasound of a hydrosalpinx. Note the presence of a tubular structure with thin walls and multiple septations.

Hydrosalpinx

Hydrosalpinx(Tuboyinka minka oo biyo xireen).

Ultrasoundka la galiyo makaanka mar mar dhif ah waxaa lagu arkaa Tubooyinka caadiga ee minka,hadii tubooyinkaas dareere ka buuksam si fudud ayaa loo arkaa.

Tubooyinka minka ee biyuhu xireen wax calaamad ah malaha(asymptomatic),inta badana waxaa lagu arkaa haweenka dhaqmaad gooyska ah ama ilmaha joojiyey.

Ultrasound Characteristics of Hydrosalpinges(Dabeecadaha ultrasoundka ee Tuboyinka minka oo biyo xireen).

- A.** dareere ka buuxsamay(Fluid filled). **B.** darbi qafiifa(Thin walls).
- C.** Dhaq dhaqaaq xiidmaha oo maqan(Absence of peristalsis).

Tubo-ovarian Abscess(maal ku jirta tubooyinka Minka iyo ugxaansidaha).

Xanuunka ku dhaca tubooyinka iyo ugxaan sidaha waa caabuq ka soo daga qaybaha sare ee jirka,calaamadaha lagu arko hawenka waxaa kamid ah Qandho,midhicir xanuun iyo danqashada wareega dhabarka, laakiin waxaa laga yaabaa caabuqa ku dhaca tubooyinka iyo ugxaan sidaha inuu yahay mid aamusani(silent),Dabeecadaha **ultrasoundka** ee lagu yaqaan tubooyinka iyo ugxaan sidaha maashu gashay waxaa kamid ah, kuus kuusyo darbi adag leh iyo dareere u muuqda sida dhalada, dareerahaas waxaa keenay caabuqaas.

Ultrasound Characteristics of Tubo-Ovarian Abscesses (Dabeecadaha ultrasoundka ee maasha ku jirta tuboyinka minka iyo ugxn sidaha).

- A. kuus kuusyo badan(Multilocular mass).
- B. dareeraha Meesha ku jira waa caddaan(Fluid content is echogenic).
- C. waxay dhex gashay ugxn sidaha(Invovlement of the ovary).

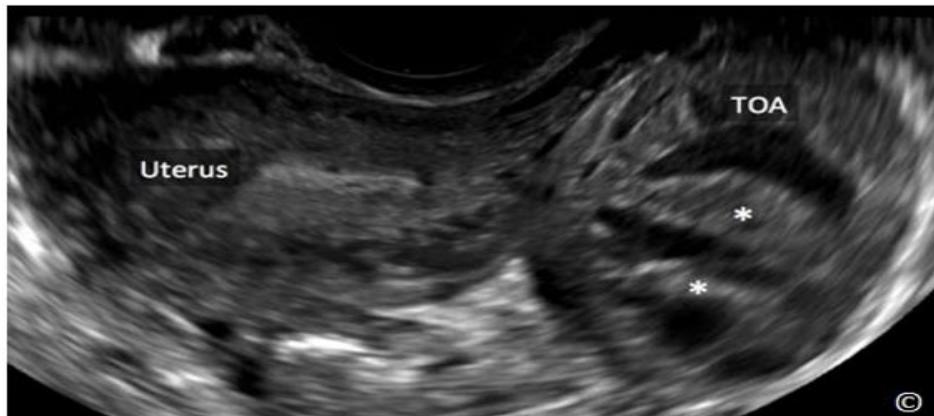


Figure 12.29: Transvaginal ultrasound of a tubo-ovarian abscess (TOA). Note the ovoid shape of the TOA, with thickened walls and septations (asterisks). The uterus (labeled) is noted adjacent to the TOA.

THE POLYCYSTIC OVARY(kuus kuus yada badan ee ugxaan sidaha)

Waa nafqadii jirka oo yaraatay ama badatay waxaana lagu yaqaan Caado wareer,sida ugaxaanii oo lasoo saari waayo(anovulation),dhalma la,aan(infertility). Markii hal ugxaan side ama labada ugxaan side lagu arko kuus kuusyo badan waxaa loo yaqaan(Polycystic ovary syndrome). Kuus kuusyada badan ee ugxaan sidaha uma baahna wax baaritan ah,Marka la isticmaalayo **ultrasoundka** makanka lagaliyo,hadii ugxaan sameeya,yaashu(follicular),ay ka bataan 25 halkii ugxaan sidaba waxaa loo yaqaan xanuunka kuus kuus yada badan ee ugxaan sidaha, hadii lagu arki waayo kuus kuus yadaas ultrasoundka makaanka lagaliyo, is ticmaal ultrasounka la saaro uur ku jirta.



Figure 12.31: Transvaginal ultrasound of a polycystic ovary. The ovary is more spherical in shape and has an increased number of follicles that are situated in the periphery of the ovary. Note also the presence of increased stromal echogenicity.

Cutubka 14 aad:

ECTOPIC PREGNANCY

(uur ku samysamay meel aan minka ahayn)

uur ku samysamay meel aan minka ahayn waa wax yaabaha sababa dhimashada la xariirta uurka inta lagu guda jiro 3bilood ee ugu horaysa uurka.

RISK FACTORS FOR ECTOPIC PREGNANCY([waxyaabaha sababa in urku kusamaysmo mel aan minka ahayn](#)).

A. Tuboyinka minka oo horay loo qalay(History of tubal surgery). B. waqtii hore in uur meel kale ku samaysmay(History of prior ectopic pregnancy). C. in hooayadu isticmaashay qalabka minka lagaliyo(Use of Intrauterine Device). D. Dhalma la,aan hore(History of infertility). **CLINICAL SYMPTOMS(Calaamadaha lagu yaqan)** uur ku samysamay meel aan minka ahayn calamadihiisa waxaa kamida Xanuun(Pain)ijo makaanka oo dhiig ka socdo(vaginal bleeding) iyo baaritaanka oo uur sax ah sheega. marka lasamynayo baritaanka caadiga ah Hadii xubnaha ku dhagan minka laga helo Buro taasi waxay bilow u tahay in urku meel aan minka ahayn ku samaysmay.

ANATOMIC LOCATION OF ECTOPIC PREGNANCY([meelaha uu ku yaalo urku samysamay meel aan minka ahayn](#)).

Inta badan uurka aan ku samysmin minka waxa uu ku yalaa Tubooyinka minka(fallopian tube), sida qaybta dhexe(ampullary) ee tubada minka,qeybta 3aad (isthmic)ee tubada minka waana qeybta ugu wayn ee uu ku samaysmo uurka ku samysamay meel aan minka ahayn,qaybaha dhif dhifka ah ee uu ku samaysmi karo waxaa kamid ah qaybta ugu dambaysa(fimbrial) tubada minka iyo qaybta ugu horayda (cornual) tubada minka.

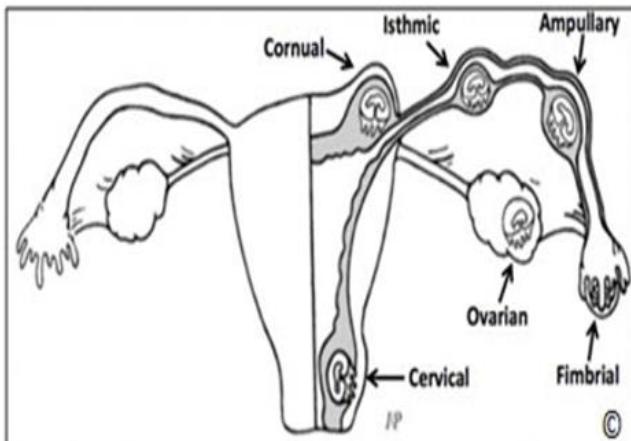


Figure 13.1: Locations of ectopic pregnancies in the pelvis. Most ectopic pregnancies are located along the course of the fallopian tube, with the ampullary and isthmic sections accounting for the largest proportions. Abdominal pregnancy is not depicted in this sketch. Sketch is courtesy of Dr. Igor Palahnuk.

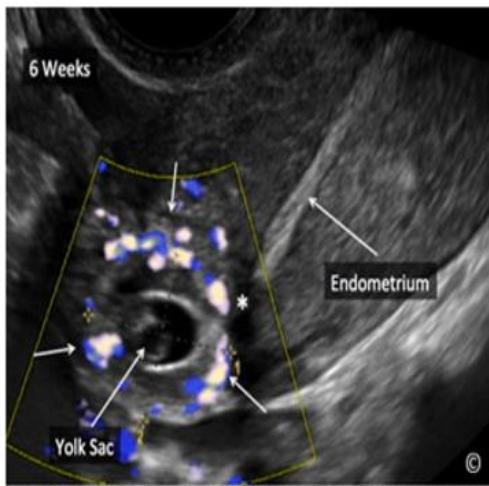
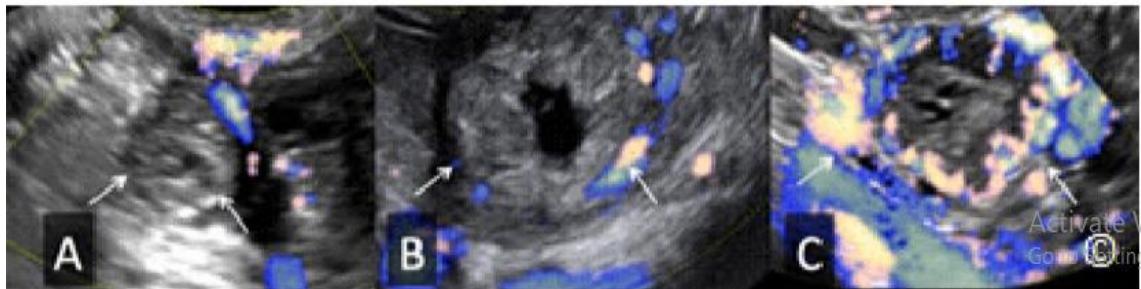


Figure 13.2: Grey scale and color Doppler ultrasound of a cornual ectopic pregnancy at 6 weeks' gestation (arrows). Note that the endometrial echo (labeled as endometrium) is distinctly separate from the cornual ectopic pregnancy (asterisk). Note the yolk sac within the ectopic pregnancy (labeled).



Cutubka 15aad:

WRITING THE ULTRASOUND REPORT
(in la qoro war bixinta ultrasoundka)

INTRODUCTION (Hordhac)

In la qoro war bixinta **ultrasoundka** waa muhiim waxyna aas aas u tahay Baaritaanka ultrasoundka hooyoyinka iyo Dadka cafimadka ka shaqeeya, war bixinta **ultrasoundka** wayxay qayb muhiim ah u tahay diiwaanka caafimaad ee bukaanka, sawirada lagu qaaday **ultrasoundka** haday caadi yihin iyo hadii aysan caadi ahaynba waa la diiwaan geliyaa.

COMPONENTS OF THE ULTRASOUND REPORT

(Qaybaha war bixinta ultrasoundka)

Patient Characteristics(Dabeecadaha Bukaanka)

Warbixinta bukaanka waxaa ka mid ah.

Magaca(Name), Lambar(Number), Age(Dada), waqtiga dhalashada(Date of birth), inta uur oo ay qaday(gravity), inta dhalatay & inta dhiciska (parity), tariiqda caadadii ugu dambaysay(date of last menstrual period) ku waani waa qaybihii ugu muhiimsanaa war bixinta **ultrasoundka**, dhammaan bukaanadu waxay u baahan yihin warbixintaan haday tahay hooyo uur ley(obstetrics) ama mid,aan uur lahayn(gynecology).

Indication for the Ultrasound Examination (wax yaabaha na tusinaaya in an samayno baaritanka ultrasoundka)

Wax yaabaha na tusinaya in aan samayno baaritaanka **ultrasoundka** waxaa lagu daraa warbixinta qoraalka,waxaana muhiimada lasiyyaa xubinta xanuunku ka jiro.

Obstetrics (Hooyo uur leh)

Warbixinta ultrasoundka hooyada uur ka leh waa in ay kamid yihin 3 wax yaabood oo aas aasiya:

1. Macluumaad aas aasiya oo ku saabsan uurka(basic information about the pregnancy).
 2. cabirka uurjiifka(fetal biometric measurements).
 3. Qaab dhismeedka uurjiifka(fetal anatomic details).
1. Macluumaadka aas aasiga ah ee ku saabsan uurka(basic information about the pregnancy) waxa kamid ah: Bad qabka uur jiifka(viability of the fetus), in la hubiyo in

uurjiifku minka ku jiro,tirada uurjiifka(number of fetuses),Meesha mandheertu taalo(location of the placenta), in la qiimeeyo xabka(assessment of the amniotic fluid), Meesha uu u jeedo(presentation), siduu u yaalo uur jiifku(lie of the fetus).

2. cabirka uurjiifka(fetal biometric measurements)waxaa ka mid ah: in lacabiro godka biyuhu ku jiraan hadii aan la arkin uurjiifka(gestational sac if an embryo is not visualized), in la cabiro uurjiifka madaxa ilaa dabada(crown-rump length).

Biometric Measurements of the Basic Obstetric Ultrasound Examination

(Cabirada aas aasiga ee hooyada uur ka leh waxaa lagu baaraa Ultrasoundka)

A. Biparietal Diameter (BPD) (after 13 6/7 weeks gestation) in la cabiro maxa gees ilaa geska kale.

B. the Head Circumference (HC) (after 13 6/7 weeks gestation) in la cabiro wareega madaxa uurjifka

C. the Abdominal Circumference AC (after 13 6/7 weeks gestation) in la cabiro wareega uur kujirta uurjifka. **D.** the Femur Length (FL) (after 13 6/7 weeks gestation) in lacabiro dhererka lafta bowdada.

Gynecology(Hooyo aan uur lahayn)

Baaritaanka ultrasoundka ee lagu baaro hooyo aan uurka lahayn waxaa loola jeedaa in lagu qiimeeyo Xubnaha ku jira miskaha(pelvic organs)oo ay ka mid yihiin minka(uterus)iyo 2da ugxaan side(both ovaries),cabirminka minka waxaa ka mid ah Dherer(enngth), joog(height) and Ballaca(width). Ugxaan side kasta waxaa laga cabiraa Dherer(enngth), Joog(height) and Ballaca(width).

Tixraac

1. Anderhub B: Manual of Abdominal Sonography. Baltimore, University Park Press, 1983.
2. Bruix J, Sherman M. Management of hepatocellular carcinoma. *Hepatology* 2005;42(5):1208-1236.
3. Demertzis J, Menias CO. State of the art: imaging of renal infections. *Emerg Radiol* 2007; 14: 13–22.
4. Dietrich CF (Ed). EFSUMB Course book. Available on line <http://www.efsumb.org/ecb/ecb01.asp>.
5. Freitas ML, Bell RL, Duffy AJ: Choledocholithiasis: evolving standards for diagnosis and management. *World J Gastroenterol* 2006; 28;12(20):3162-7.

- 6) Reddy UM, Abuhamad AZ, Levine D, Saade GR. Fetal Imaging Executive Summary of a Joint Eunice Kennedy Shriver National Institute of Child Health and Human Development, Society for Maternal-Fetal Medicine, American Institute of Ultrasound in Medicine, American College of Obstetricians and Gynecologists, American College of Radiology, Society for Pediatric Radiology, and Society of Radiologists in Ultrasound Fetal Imaging Workshop. *J Ultrasound Med* 2014; 33:745–757.
- 7) Hadlock FP, Harrist RB, Carpenter RJ, Deter RL, Park SK. Sonographic estimation of fetal weight. The value of femur length in addition to head and abdomen measurements. *Radiology*. 1984 Feb;150(2):535-40.
- 8) ISUOG. Sonographic examination of the fetal central nervous system: guidelines for performing the ‘basic examination’ and the ‘fetal neurosonogram’. *Ultrasound Obstetric Gynecology* 2007; 29: 109–116.
- 9) Jewell SE, Yip R. Increasing trends in plural births in the United States. *Obstet Gynecol* 1995; 85:229-32.

- 10) Monteagudo A, Timor-Tritsch IE, Sharma S. Early and simple determination of chorionic and amniotic type in multifetal gestations in the first fourteen weeks by high-frequency transvaginal ultrasonography. *Am J Obstet Gynecol* 1994; 170(3):824–9. 9
- 11) Jaffe R, Jauniaux E, Hustin J: Maternal circulation in the first trimester human placenta – myth or reality? *Am J Obstet Gynecol* 176:695,1997.
- 12) AIUM practice guideline for the performance of pelvic ultrasound examinations. American Institute of Ultrasound in Medicine. *J Ultrasound Med.* 2010; 29 (1):166-72.
- 13) Bocca SM, Abuhamad AZ. Use of 3-dimensional sonography to assess uterine anomalies. *J Ultrasound in Medicine* 2013;32:1.