

태아통합컨퍼런스

소아청소년과
NICU . F 김현호

2019.01.21

Patient Information

➤ 유지우(이주현아기) (41322197 / M)

- Date of Birth: 2018.12.18 , 09:15
- Inborn , normal pregnancy, Elective C-section
- Gestational age **34+2weeks** (C.E.D.C : 2018-12-18)
- Birth weight : 2830g (50-75p)
- Height 45cm (25-50p)
- Head circumference : 33cm (75-90p)
- Apgar score (1min/5min) : (6 / 9)

Maternal History

- 산모나이 : 20세
- Para : (0) - (0) - (0)(0,0) - (0)(0,0)
- 산모 혈액형 : AB
- 임신중 투약력/흡연력/음주력 (-/-/-)
- 임신성 당뇨병/임신중 고혈압/본태성 고혈압 (+/-/-)
- 혈청학 검사 : HBsAg/ HBsAb /VDRL /anti-HIV (-/+/-/-)
- PROM : 3days
- Oligohydramnios : No

Fetal ultrasound

PA 26week : 정상 소견

PA 29+3 week : 타원 USG fetal ascites

Level II USG : (2018-09-17, PA 22+2 week) WNL

Last USG : EFW (2812)g (75~90 percentile)

Placenta (Anterior), AFI (26.96)

BPP (8/8), PP (Cephalic)

Ascites : 4.50cm

→ R/O meconium peritonitis

Present illness

GA34+2wks 2.8kg(AGA) C/S 출생

→ Initial saturation 45% 이며 color pale 하나 HR 100회 이상 확인

→ Around O2 apply

→ Saturation 2분내 target 도달

→ crying 양호하여 O2 apply 하며 NICU 입실함

Physical examination

- Initial Vital sign

- Blood pressure: 62/45(50) mmHg
- Heart rate: 179 bpm
- Respiratory rate: 40 bpm
- Body temperature 36.5°C
- SpO2 92%

→ Nasal cannula apply 해도 SpO2 Fluctuation

Physical examination

- **General Appearance**

- Active

- **HEENT**

- Nasal flaring (-)
- moaning (-)

- **Chest**

- Chest retraction (+)
- Regular heart beat

- **Abdomen**

- Soft and distended(+)
- Multiple petechiae

- **External genitalia**

- male

- **Extremities**

- Hip dislocation (-)

Initial laboratory finding

검사명	단위	2018-12-18 09:57	2018-12-18 10:11	2018-12-18 14:20
tHb	g/dℓ	▲19.0		16.1
Bilirubin, Total, Neonatal	mg/dℓ			
pH	pH	▼7.123		▼7.336
pCO2	mmHg	▲85.1		▲46.5
pO2	mmHg	▼39		▼47.6
HCO3	mmol/ℓ	27.9		24.3
BE(Base Excess)	mmol/ℓ	-1		-1.9
O2 Saturation	%	▼54		▼84.8
Na (ABGA)	mmol/ℓ	138		▼134
K (ABGA)	mmol/ℓ	4.8		4.5
Ca, Ionized (ABGA)	mmol/ℓ	▲1.39		1.18
Cl (ABGA)	mmol/ℓ			103
Glucose	mg/dL	▼50		▼62
Hematocrit (ABGA)	%	▲56		

→ Intubation

Initial laboratory finding

검사명	단위	2018-12-18 10:11	2018-12-18 17:15
WBC Count, Blood	x10 ³ /μL	▲27.79	▲21.09
RBC Count, Blood	x100 ³ /μL	4.91	▼4.17
Hemoglobin, Blood	g/dL	▲17.7	14.9
Hematocrit, Blood	%	▲53.0	43.7
MCV (Mean Corpuscular Volu...	fL	▲107.9	▲104.8
MCH (Mean Corpuscular Hem...	pg	▲36.0	▲35.7
MCHC (Mean Corpuscular He...	g/dL	33.4	34.1
Platelet Count, Blood	x10 ³ /μL	▼34	▼18
Blast	%	0	0
Promyelocyte	%	0	0
Myelocyte	%	▲4	0
Metamyelocyte	%	▲3	▲3
Band neutrophil	%	2	2
Segmented neutrophil	%	63	61
Eosinophil	%	1	4
Basophil	%	0	0
Lymphocyte	%	▼10	▼9
Monocyte	%	▲14	▲19
Atypical Lymphocyte	%	▲3	▲2
Immature cell	%	0	0
Plasma cell	%	0	0
Nucleated RBC	/100WBC	▲115	▲78
ANC (Absolute Neutrophil Co...	x10 ³ /μL	▲18.06	▲13.29
ALC (Absolute Lymphocyte Co...	x10 ³ /μL	3.61	2.32
Abnormal Lymphoid cell	%	0	0
Reticulocyte	%	▲7.25	

→ PC 20cc/kg transfusion

Initial laboratory finding

검사명	단위	2018-12-18 10:11
Protein, Total	g/dℓ	▼4.8
Albumin	g/dℓ	▼2.7
Globulin	g/dℓ	2.1
A/G ratio		1.3
Cholesterol	mg/dℓ	68
Bilirubin, Total	mg/dℓ	▲2.7
AST	U/ℓ	▲70
ALT	U/ℓ	10
ALP	U/ℓ	▲335
Glucose, Fasting	mg/dℓ	▼60
BUN	mg/dℓ	6.8
Creatinine	mg/dℓ	▼0.52
BUN & Creatinine ratio		13.1
Estimated GFR	mL/min...	28.6
Uric Acid	mg/dℓ	▲7.3
Ca	mg/dℓ	▲11.3
P	mg/dℓ	▲5.8
Bilirubin, Direct	mg/dℓ	
Na	mmol/ℓ	137
Potassium (K)	mmol/ℓ	5.1
Cl	mmol/ℓ	104
Mg	mg/dℓ	1.7
CRP, Quantitative (High Sensiti...	mg/dℓ	▲5.03

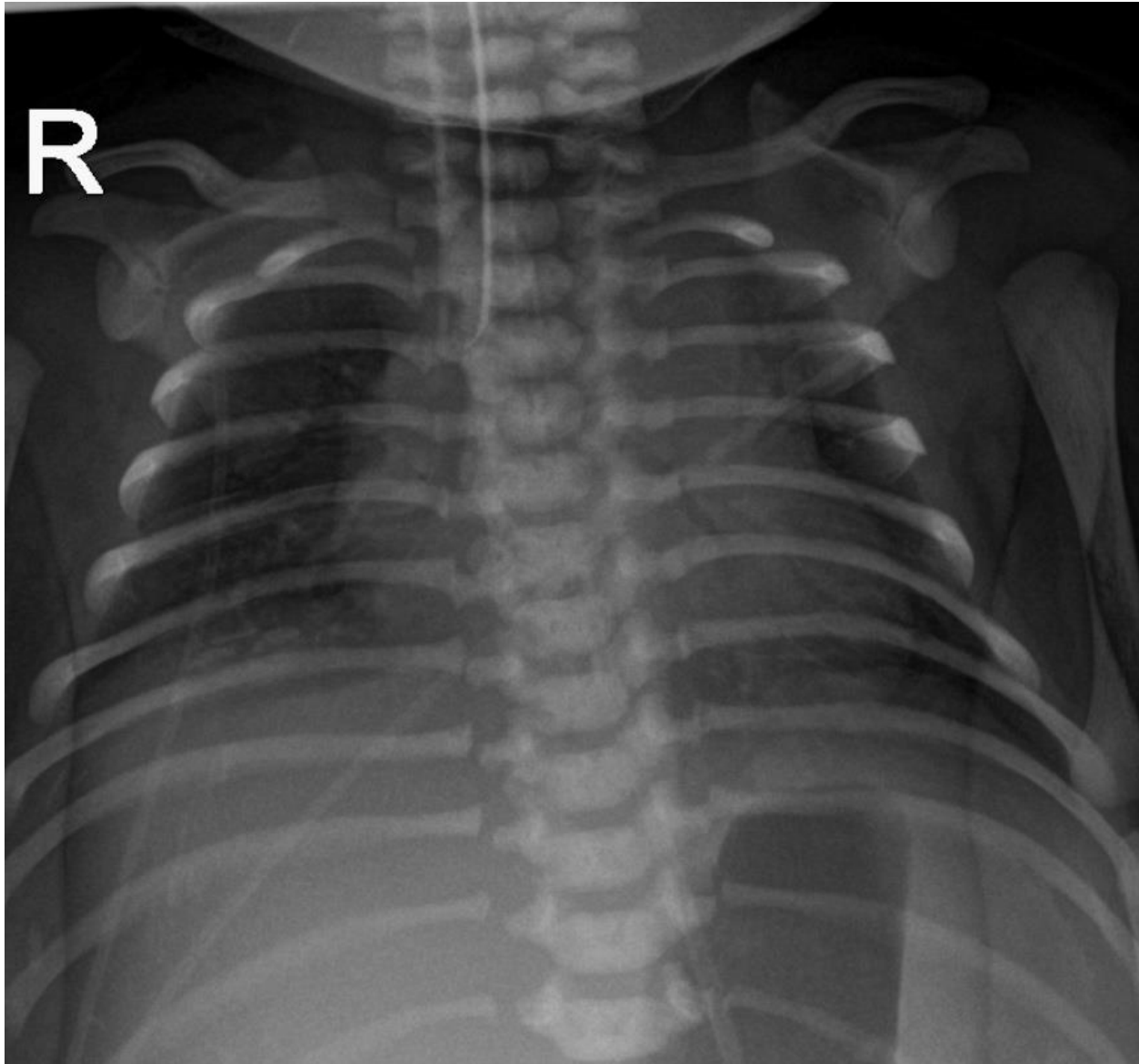
검사명	단위	2018-12-18 10:32
PT(sec)	sec	▲15.1
PT(%)	%	▼77
PT(INR)	INR	▲1.18
APTT	sec	35.4

→ Antibiotics
(cefazolin, Gentamycin)

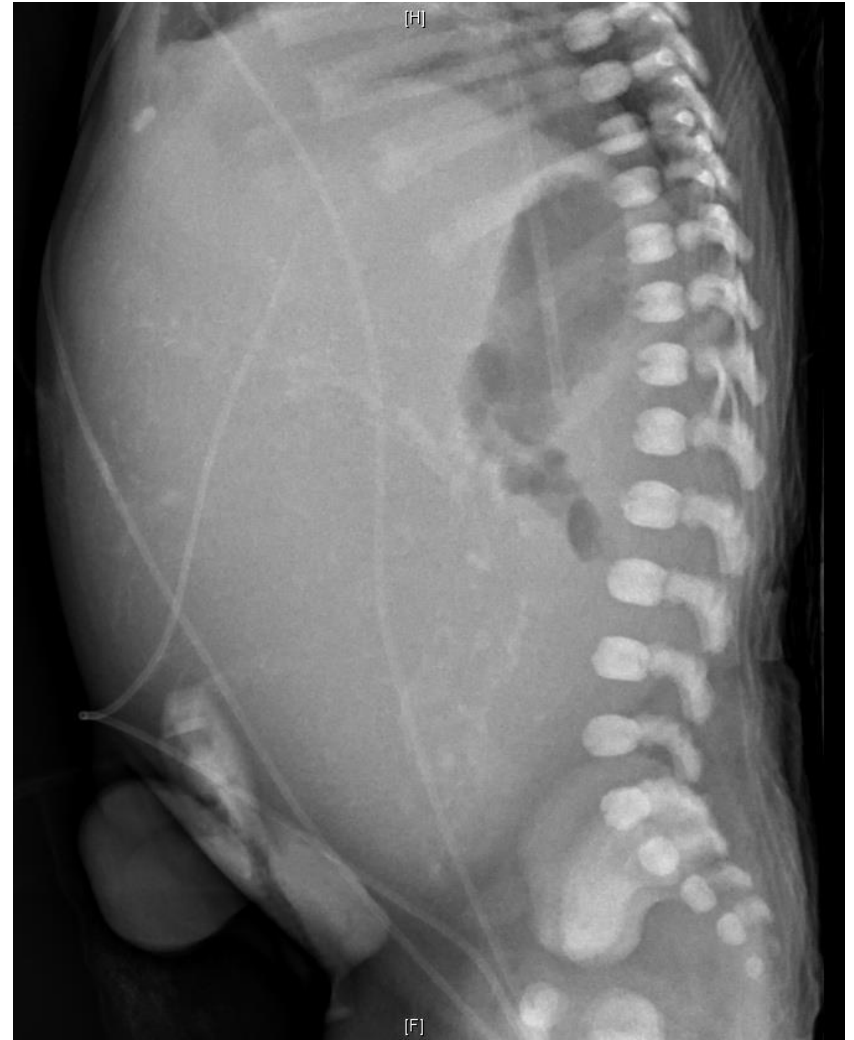
Infection surveillance

- Tracheal aspiration : (12/18) No growth
- Gastric aspiration (12/18) No growth
- Blood culture (12/18) No growth
- Skin (12/18) No growth
- Nasal (12/18) No growth

chest x-ray (HD#1)



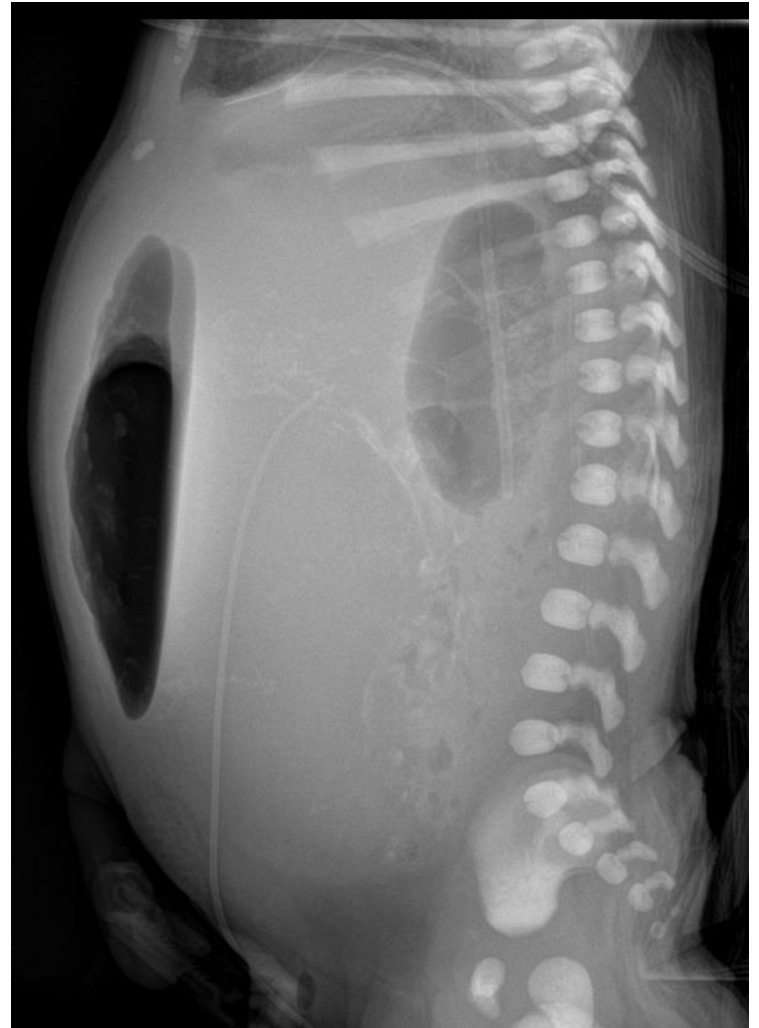
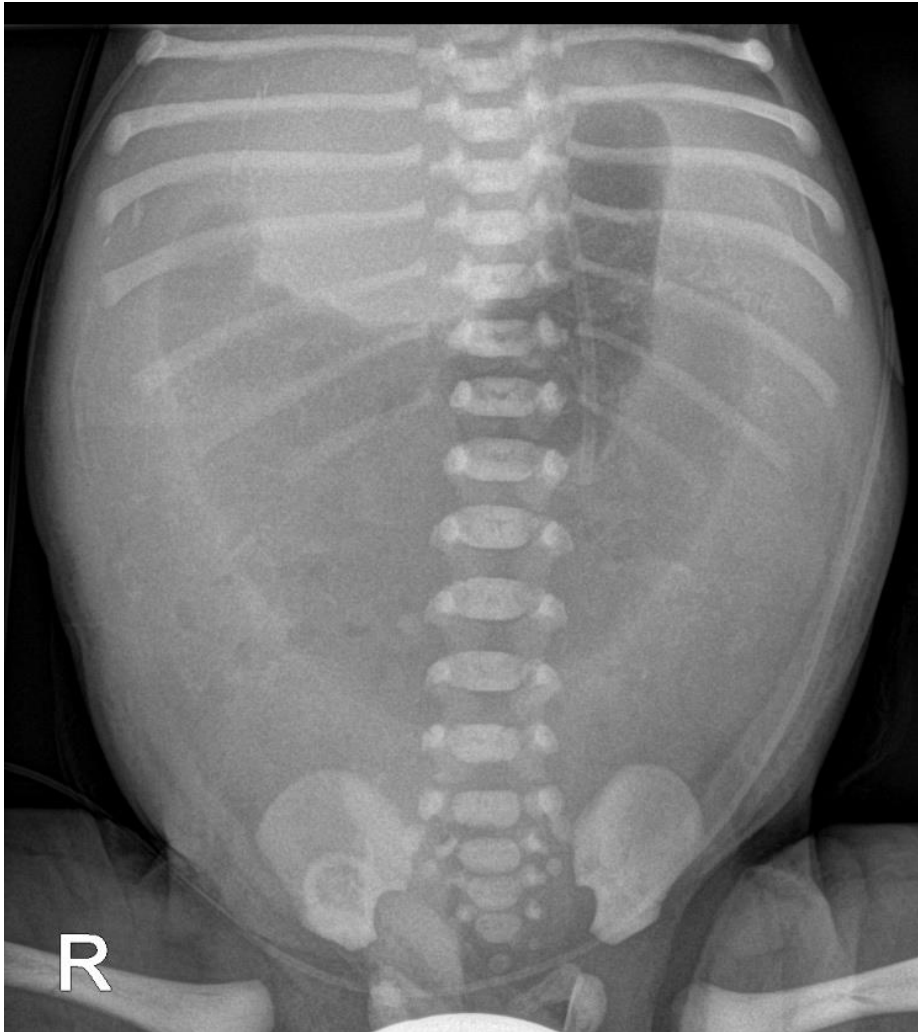
Abdomen x-ray (HD#1)



Abdomen Ultrasound (HD#1)

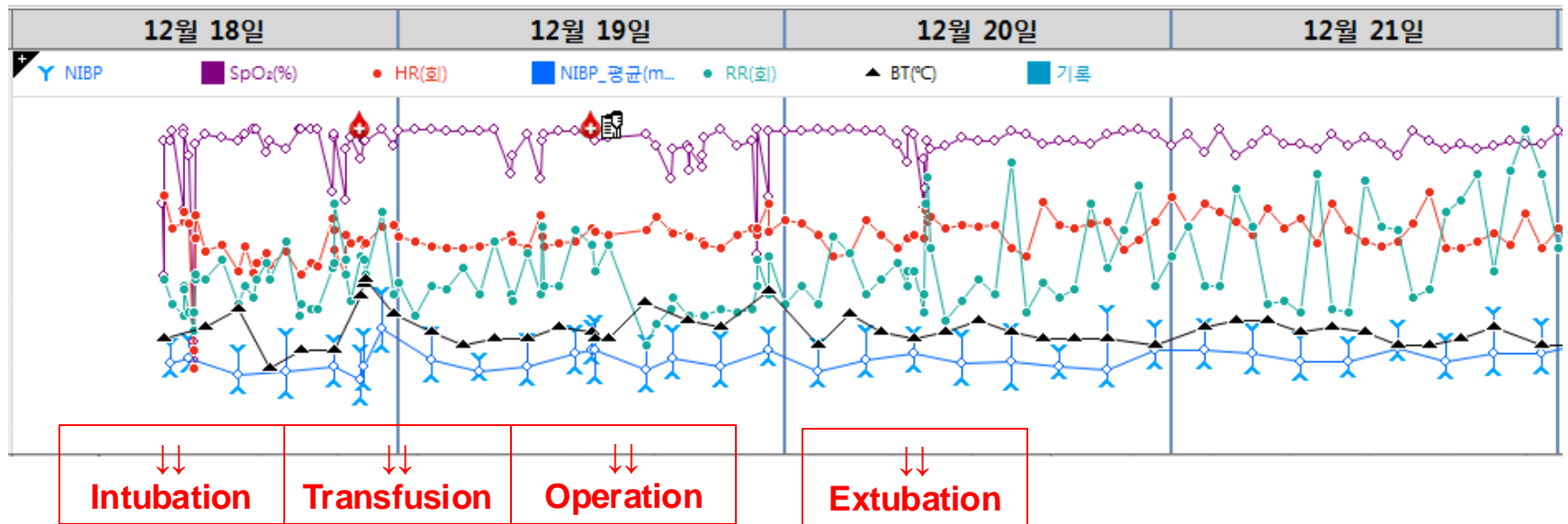
1. R/O Huge **meconium pseudocyst** with mass effect.
 - Echogenic small bowel with interbowel meconium.
 - Spilled meconium in both inguinal canal.
2. Increased parenchymal echogenicities of both kidneys.
R/O Renal medical disease.

Abdomen x-ray (HD#2)



→ Emergency Operation

Hospital course



Hospital course

18.12.20 Post op care & extubation, RA 에서 saturation 안정

18.12.24 IV nutrition support 하였으며 general condition 양호

18.12.24 feeding start 하였으나 residual 많이 남는 것 확인 됨

→ gastrografen enema 시행 : N/S

19.01.08 Discharge

Brain Ultrasound

Probable normal blush.

2-D Echocardiography

- 1) Good LV contractility (EF : 57.5%)
- 2) Normal LV dimension
- 3) No intra-cardiac anomaly (pin-point PFO)
- 4) Trivial TR, No MR, No AR
- 5) No LVOTO, No RVOTO, No CoA
- 6) Normal coronary arteries

F/U laboratory finding

검사명	단위	2018-12-31 04:54
WBC Count, Blood	x10 ³ /μL	▲11.87
RBC Count, Blood	x100 ³ /μL	▼4.19
Hemoglobin, Blood	g/dL	13.9
Hematocrit, Blood	%	41.0
MCV (Mean Corpuscular Volu...	fL	97.9
MCH (Mean Corpuscular Hem...	pg	33.2
MCHC (Mean Corpuscular He...	g/dL	33.9
Platelet Count, Blood	x10 ³ /μL	▲368
Blast	%	0
Promyelocyte	%	0
Myelocyte	%	0
Metamyelocyte	%	0
Band neutrophil	%	0
Segmented neutrophil	%	51.3
Eosinophil	%	1.6
Basophil	%	0.3
Lymphocyte	%	32.1
Monocyte	%	▲14.7
Atypical Lymphocyte	%	0
Immature cell	%	0
Plasma cell	%	0
Nucleated RBC	/100WBC	0
ANC (Absolute Neutrophil Co...	x10 ³ /μL	6.09
ALC (Absolute Lymphocyte Co...	x10 ³ /μL	3.81
Abnormal Lymphoid cell	%	0

검사명	단위	2018-12-31 04:51
Protein, Total	g/dL	▼4.9
Albumin	g/dL	▼3.2
Globulin	g/dL	▼1.6
A/G ratio		2.0
Cholesterol	mg/dL	
Bilirubin, Total	mg/dL	▲2.4
AST	U/L	▲46
ALT	U/L	9
ALP	U/L	▲369
Glucose, Fasting	mg/dL	88
BUN	mg/dL	8.2
Creatinine	mg/dL	▼0.25
BUN & Creatinine ratio		▲32.8
Estimated GFR	mL/min...	60.6
Uric Acid	mg/dL	▼1.3
Ca	mg/dL	10.0
P	mg/dL	▲5.2
Bilirubin, Direct	mg/dL	
Na	mmol/L	139
Potassium (K)	mmol/L	4.9
Cl	mmol/L	103
Mg	mg/dL	
CRP, Quantitative (High Sensi...	mg/dL	0.18

Final diagnosis

Meconium Peritonitis

MECONIUM PERITONITIS: THE ROLE OF POSTNATAL RADIOGRAPHIC AND SONOGRAPHIC FINDINGS IN PREDICTING THE NEED FOR SURGERY

Pediatric Radiology 2018, Pablo Caro-Domínguez et al.

Objective

- To compare the role of postnatal radiographic and sonographic findings in predicting the need for surgery in neonates with meconium peritonitis

Material and methods

- Retrospective analysis
- Neonates with meconium peritonitis (1999–2014)
- Operative vs. Non-operative groups

Result

Meconium peritonitis : 37 neonates (22 males, 15 females)

- 23 (62%) required surgery

- 14 (38%) successfully treated non-surgically

Table 1

Imaging findings in 37 children diagnosed with meconium peritonitis

Imaging findings		Radiographs	Ultrasound	P-value
Median day performed (standard deviation)		1 (34)	2 (36)	NS
Calcifications	Diffuse peritoneal calcification	21	22	NS
	Meconium pseudocyst	8	11	NS
Signs of obstruction		13	9	NS
Pneumoperitoneum		1	3	NS
Ascites		3	7	NS
Volvulus		0	1	NS

NS not significant

Result

Table 2

Radiographic and sonographic findings in neonates with meconium peritonitis treated operatively and non-operatively

Findings on radiography		Non-operative group (n=14)	Operative group (n=23)	P-value
Calcifications	Diffuse peritoneal	9	12	NS
	Meconium pseudocyst	4	4	NS
Signs of obstruction		1	12	0.01
Pneumoperitoneum		0	1	NS
Ascites		0	3	NS
Findings on sonography		Non-operative group (n=14)	Operative group (n=23)	P-value
Calcifications	Diffuse peritoneal	11	11	NS
	Meconium pseudocyst	3	8	NS
Signs of obstruction		0	9	0.04
Pneumoperitoneum		0	3	NS
Ascites		0	7	0.01
Volvulus		0	1	NS

NS not significant. P-values <0.05 were considered statistically significant

Conclusion

- Predicted **the need for surgery**
→ intestinal obstruction, ascites
- Neonates with **meconium pseudocysts**
→ **Not require surgery** if they were not associated with the described findings
- **Diffuse peritoneal calcification** as an isolated finding
→ Successfully treated **non-operatively**

THANK YOU