**Data Analysis for Clicr**

**Sample: 8**

Title : 'BEG\_\_Surgical management\_\_END of BEG\_\_pheochromocytoma\_\_END in a 13 - week pregnant woman'

Context:

"Summary\n\nA 34 - year - old 13 - week pregnant woman presented with BEG\_\_hypertension\_\_END refractory to BEG\_\_medical therapy\_\_END and on BEG\_\_workup\_\_END was found to have a BEG\_\_right adrenal mass\_\_END .\nDue to her BEG\_\_persistent increased blood pressure\_\_END she was advised BEG\_\_urinary vanillylmandelic acid\_\_END ( VMA ) and its BEG\_\_level\_\_END was raised .\nBEG\_\_MRI of the abdomen\_\_END showed a BEG\_\_well - circumcised lesion in the right adrenal\_\_END of 3.0 × 2.5 cm suggestive of BEG\_\_pheochromocytoma\_\_END .\nThe patient was started on BEG\_\_antihypertensives\_\_END including α - blockers and β - blockers and planned for BEG\_\_right open adrenalectomy\_\_END .\nIntraoperatively , BEG\_\_blood pressure\_\_END was raised up to 180 / 110 mm Hg on BEG\_\_slight manipulation of adrenal gland\_\_END which was controlled with BEG\_\_glyceryl - trinitrate\_\_END and BEG\_\_volatile agents\_\_END .\nBEG\_\_Postoperatively urinary VMA\_\_END decreased to normal range and BEG\_\_all antihypertensives\_\_END were gradually stopped .\nShe had uneventful pregnancy and delivered vaginally .\nThis case report highlights the importance of BEG\_\_surgical management\_\_END of BEG\_\_pheochromocytoma\_\_END in second trimester of pregnancy to avoid BEG\_\_catastrophic complications\_\_END later in pregnancy .\n\nBackground\n\nBEG\_\_Pheochromocytoma\_\_END ( PCC ) is a BEG\_\_neuroendocrine tumour of the adrenal medulla\_\_END ( originating in the chromaffin cells ) .\nPCC is a very rare condition in pregnancy and it carries significant risks to the mother as well as to the fetus .\nTherefore , PCC should be considered as a possible cause of BEG\_\_refractory hypertension in pregnancy\_\_END and appropriate investigations should be carried out .\nThe diagnosis can be established by measuring BEG\_\_catecholamines\_\_END and BEG\_\_metanephrines levels\_\_END in the BEG\_\_plasma\_\_END ( blood ) or through a 24 - hour BEG\_\_urine collection for VMA\_\_END .\nThe BEG\_\_tumour\_\_END is generally localised by BEG\_\_MRI\_\_END during pregnancy .\nBEG\_\_Definitive treatment\_\_END of PCC is surgical but initially it should be treated medically to control BEG\_\_blood pressure\_\_END with α - BEG\_\_adrenergic blockers\_\_END , followed by β - blockers .\nIn this case report PCC was detected in the second trimester , and managed successfully .\n\nCase presentation\n\nA 34 - year pregnant woman was referred to our clinic because of BEG\_\_hypertension\_\_END refractory to BEG\_\_medical therapy\_\_END and BEG\_\_right adrenal mass\_\_END .\nShe had two normal deliveries before this pregnancy and had no BEG\_\_complications\_\_END .\nShe was diagnosed to have BEG\_\_essential hypertension\_\_END when non-pregnant and was prescribed BEG\_\_ACE inhibitor\_\_END ( enalapril 10 mg twice daily ) .\nBEG\_\_Calcium channel blocker\_\_END and BEG\_\_β - blocker\_\_END ( amlodipine 10 mg four times a day and BEG\_\_atenolol\_\_END 50 mg twice daily ) were later added by the family physician due to BEG\_\_refractory hypertension\_\_END .\nMeanwhile , the patient became pregnant .\n\nInvestigations\n\nOwing to BEG\_\_persistent increased blood pressure\_\_END ( BP ) she was advised BEG\_\_urinary vanillylmandelic acid\_\_END ( VMA ) which was raised 30 mg / 24 h ( normal level 2 – 7 mg / 24 h ) . Later the family physician advised BEG\_\_ultrasound\_\_END which revealed an BEG\_\_adrenal mass\_\_END .\nShe had an BEG\_\_MRI\_\_END subsequently which confirmed a well - BEG\_\_circumscibed lesion in the right adrenal mass\_\_END of 3.0 × 2.5 cm suggestive of PCC ( figures 1 and 2 ) .\n\nDifferential diagnosis\n\nBEG\_\_Hypertension\_\_END during pregnancy is usually attributable to BEG\_\_pre-eclampsia\_\_END ( pregnancy - induced hypertension ) or BEG\_\_chronic hypertension\_\_END but secondary causes of BEG\_\_hypertension\_\_END should be considered in patients refractory to BEG\_\_medical therapy\_\_END .\nThese include BEG\_\_renal vascular hypertension\_\_END , BEG\_\_coarctation of the aorta\_\_END and adrenal causes of BEG\_\_hypertension\_\_END ( BEG\_\_Cushing syndrome\_\_END , BEG\_\_Conn 's syndrome\_\_END , PCC ) .\n\nBEG\_\_Treatment\_\_END\n\nSoon after these BEG\_\_diagnostic tests\_\_END , the patient developed BEG\_\_symptoms\_\_END including BEG\_\_sweating\_\_END , BEG\_\_flushing\_\_END and BEG\_\_chest pain\_\_END with BEG\_\_BP\_\_END 200 / 120 mm Hg .\nBEG\_\_Cardiac evaluation\_\_END was performed including BEG\_\_ECG\_\_END and BEG\_\_echocardiogram\_\_END which revealed no BEG\_\_abnormality\_\_END .\nThe BEG\_\_treatment\_\_END was revised and BEG\_\_phenoxybenzamine\_\_END 10 mg thrice daily was initiated resulting in adequate control of BEG\_\_hypertension\_\_END as well as BEG\_\_symptoms\_\_END .\nBEG\_\_Obstetric examination\_\_END and BEG\_\_ultrasound of the fetus\_\_END showed a BEG\_\_single alive fetus\_\_END with normal fetal growth parameters .\nConsidering the risk of BEG\_\_hypertension\_\_END during pregnancy and the possibility of aggravation during later stages of pregnancy we decided to excise the BEG\_\_mass\_\_END .\nSurgical risk and risk to fetus was discussed with the patient .\nObstetrician also agreed with the plan and counselled the patient about the possible chances of BEG\_\_miscarriage\_\_END .\nThe patient was planned for BEG\_\_adrenalectomy\_\_END during 13th week of pregnancy .\n\nThe patient was admitted for BEG\_\_right open adrenalectomy\_\_END and started on BEG\_\_progesterone pessaries\_\_END 400 mg twice daily .\nIntraoperatively , BEG\_\_BP\_\_END raised to 180 / 110 mm Hg on BEG\_\_slight manipulation of adrenal gland\_\_END which was controlled by the anaesthetist with BEG\_\_glyceryl - trinitrate\_\_END and BEG\_\_volatile agents\_\_END included BEG\_\_isoflurane\_\_END and BEG\_\_nitrous\_\_END to control the BEG\_\_BP\_\_END during BEG\_\_surgery\_\_END .\nOperative time was 160 min with a BEG\_\_blood loss\_\_END of only 200 mL and without any need of BEG\_\_transfusion\_\_END .\nPostoperatively in the recovery room the obstetrician performed BEG\_\_ultrasound\_\_END and the BEG\_\_fetal heart\_\_END was checked , which was found normal .\n\nFor BEG\_\_pain management\_\_END the anaesthetist started BEG\_\_pethidine\_\_END via patient - controlled BEG\_\_intravenous analgesia\_\_END ( PCIA ) .\nShe was prescribed BEG\_\_intravenous paracetamol\_\_END and BEG\_\_morphine\_\_END after discontinuation of PCIA .\nThe patient was kept in the intensive care unit for BEG\_\_labile BP\_\_END for 2 days which was managed by BEG\_\_fluid resuscitation\_\_END and adjustment of dosage of BEG\_\_antihypertensives\_\_END .\nThe endocrinologist gradually tapered off the BEG\_\_antihypertensive medication\_\_END over 3 days postoperatively .\nOn second postoperative day , slight per BEG\_\_vaginal spotting\_\_END was noticed which settled with observation .\nThe patient was discharged on seventh POD with BEG\_\_propranolol\_\_END 10 mg twice daily and BEG\_\_progesterone pessaries\_\_END 400 mg twice daily .\n\nOutcome and follow - up\n\nThe patient was followed up in the clinic after 2 weeks , she was fine with normal fetal growth parameters on BEG\_\_ultrasound\_\_END .\nBEG\_\_Urinary VMA\_\_END decreased to normal range and BEG\_\_all antihypertensives\_\_END were stopped .\nShe was followed up in the obstetric clinic , had safe pregnancy and delivered vaginally at term .\n\nDiscussion\n\nPCC accounts for 0.1 – 1 % of all cases of BEG\_\_hypertension\_\_END .\nPrecise incidence in pregnancy is difficult to determine but more than 200 cases have been reported in the published literature .\nPCC is a BEG\_\_very rare neuroendocrine tumour\_\_END which originates from the BEG\_\_adrenal medulla\_\_END ( chromaffin cells ) .\nThis BEG\_\_tumour\_\_END is notorious for its devastating consequences .\nPCC is occasionally referred to as ‘ 10 % tumors ’ because 10 % are bilateral , 10 % are extra-adrenal and 10 % are BEG\_\_malignant\_\_END .\nIn pregnancy , the presence of PCC may be difficult to detect owing to the more prevalent diagnosis of BEG\_\_pregnancy - induced hypertension\_\_END .\nIt is usually suspected when patient is not responding well to BEG\_\_antihypertensives\_\_END .\nBEG\_\_Untreated PCC\_\_END carries a risk of mortality for the mother and the fetus , as high as 58 % .\nEarly diagnosis is BEG\_\_vital\_\_END and BEG\_\_symptoms\_\_END and signs vary which includes : BEG\_\_hypertension\_\_END ( 98 % of cases ) , BEG\_\_orthostatic hypotension\_\_END , BEG\_\_palpitations\_\_END , BEG\_\_tachycardia\_\_END , BEG\_\_headache\_\_END , BEG\_\_sweating\_\_END , BEG\_\_seizure disorders\_\_END and BEG\_\_anxiety attacks\_\_END .\nBEG\_\_Other symptoms\_\_END are BEG\_\_chest pain\_\_END , BEG\_\_nausea\_\_END and BEG\_\_vomiting\_\_END , BEG\_\_pallor\_\_END and BEG\_\_flushing\_\_END .\nPregnancy does not BEG\_\_alter urinary catecholamines\_\_END hence diagnosis is confirmed by 24 h BEG\_\_urine VMA\_\_END , BEG\_\_metanephrines\_\_END or BEG\_\_catecholamines\_\_END .\nBEG\_\_Metanephrines\_\_END and BEG\_\_catecholamines\_\_END can be measured in the blood as well .\nIn adults , approximately 80 % of PCC are unilateral and solitary .\nFor BEG\_\_localisation ultrasound of the abdomen\_\_END should be performed as it is easily accessible , cheap and a BEG\_\_safe modality\_\_END in pregnancy and has 89 – 97 % sensitivity .\nMR has the advantages of greater accuracy , BEG\_\_high - quality images\_\_END and lack of BEG\_\_ionising radiation\_\_END .\n9 – 12 As the complication rate increases with progression of BEG\_\_pregnancy\_\_END , late first trimester and second trimester are the ideal times for BEG\_\_surgical treatment\_\_END after BEG\_\_organogenesis\_\_END is completed .\nBEG\_\_Surgery\_\_END should be avoided in early first trimester because of BEG\_\_high chances of miscarriage\_\_END and in late second trimester and third trimester because of BEG\_\_abdominal exploration\_\_END and access is difficult .\n12 , 13\n\nPCC should always be treated first medically to stabilise the BP and BEG\_\_symptoms\_\_END .\nα - BEG\_\_Adrenoceptor blockade\_\_END that is either BEG\_\_phenoxybenzamine\_\_END or BEG\_\_prazosin\_\_END and β - blockade is used to control BEG\_\_tachycardia\_\_END and BEG\_\_dysrhythmia\_\_END .\nThe aim of this pretreatment is twofold : first , before undergoing BEG\_\_surgery\_\_END , BEG\_\_blood pressure\_\_END , BEG\_\_heart rate\_\_END and BEG\_\_volume depletion\_\_END should be restored as far as possible .\nSecond , the patient should be protected from the BEG\_\_toxic cardiovascular effects\_\_END of BEG\_\_preoperative surges of catecholamines\_\_END .\nThe definitive treatment of PCC is BEG\_\_surgical excision\_\_END either open , laparoscopic or robotic .\nA brief literature review showed that patients with BEG\_\_PCC\_\_END during pregnancy were managed with one of the two approaches .\nFirst , medically up to the end of pregnancy and then BEG\_\_tumour excision\_\_END along with BEG\_\_C section\_\_END .\nThis approach appears to be more suitable for patients who present late in pregnancy and / or adequately manageable with BEG\_\_antihypertensives\_\_END .\nThe second approach is BEG\_\_resection of PCC preferably\_\_END during the second trimester .\nBEG\_\_Robotic adrenalectomy\_\_END during pregnancy has been reported and the patient had no BEG\_\_perioperative complication\_\_END .\n13 Individualised management is appropriate as no BEG\_\_single protocol\_\_END is suitable for all patients given the rarity and the complexity of the BEG\_\_problem\_\_END ."

Q1:

|  |  |
| --- | --- |
| Query | Answers |
| query': 'Although BEG\_\_pheochromocytoma\_\_END ( PCC ) has been treated by controlling @placeholder in the pregnancy , BEG\_\_surgical treatment\_\_END in the second trimester is preferable | [{'text': 'blood pressure',  'origin': 'dataset',  'sem\_type': 'test',  'cui': 'C0005823'},  {'text': 'BP', 'origin': 'UMLS', 'sem\_type': 'test', 'cui': 'C0005823'},  {'text': 'Blood pressure',  'origin': 'UMLS',  'sem\_type': 'test',  'cui': 'C0005823'},  {'text': 'BP - Blood pressure',  'origin': 'UMLS',  'sem\_type': 'test',  'cui': 'C0005823'},  {'text': 'Blood Pressure',  'origin': 'UMLS',  'sem\_type': 'test',  'cui': 'C0005823'},  {'text': 'Blood pressure, NOS',  'origin': 'UMLS',  'sem\_type': 'test',  'cui': 'C0005823'},  {'text': 'Pressure, Blood',  'origin': 'UMLS',  'sem\_type': 'test',  'cui': 'C0005823'},  {'text': 'BLOOD PRESSURE',  'origin': 'UMLS',  'sem\_type': 'test',  'cui': 'C0005823'},  {'text': 'Blood pressure (observable entity)',  'origin': 'UMLS',  'sem\_type': 'test',  'cui': 'C0005823'}] |
| Management of PCC should be multidisciplinary in which the endocrinologist , obstetrician , urologist and the anaesthesiologist should be included to minimise the probabilities of @placeholder | [{'text': 'complications',  'origin': 'dataset',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complication -RETIRED-',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complication (disorder)',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complications',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complication, NOS',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Other complication',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'complication',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complication',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'}] |
| perioperatively is the key to avoid BEG\_\_complications\_\_END .' | [{'text': 'Strict blood pressure control',  'origin': 'dataset',  'sem\_type': 'treatment',  'cui': 'C0919892'},  {'text': 'Blood pressure inadequately controlled',  'origin': 'UMLS',  'sem\_type': 'treatment',  'cui': 'C0919892'}] |
| 'BEG\_\_Strict blood pressure control\_\_END perioperatively is the key to avoid @placeholder .' | [{'text': 'complications',  'origin': 'dataset',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complication -RETIRED-',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complication (disorder)',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complications',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complication, NOS',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Other complication',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'complication',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complication',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'}] |
| 'PCC must be suspected as a cause of @placeholder .' | [{'text': 'complications',  'origin': 'dataset',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complication -RETIRED-',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complication (disorder)',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complications',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complication, NOS',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Other complication',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'complication',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'},  {'text': 'Complication',  'origin': 'UMLS',  'sem\_type': 'problem',  'cui': 'C0009566'}] |