Undiagnosed Left Renal Artery Aneurysm causing maternal and fetal death in late pregnancy: A case report.

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ABSTRACT

Introduction: Rupture of a renal artery aneurysm during pregnancy is a rare event, and is associated with high mortality and morbidity not only for the mother but also for the fetus. Increase in cardiac output and blood volume, with increased intra-abdominal pressure from enlarging uterus, and hormonal factors acting on blood vessel walls causing a relaxation of vascular walls are predisposing factors to the increased risk of rupture during pregnancy.

Case presentation: We report a case of undiagnosed rupture of renal artery aneurysm in a pregnant woman during labour. The diagnosis was made during caesarean section and confirmed by pelvic CT scan in spite of massive blood transfusion. Unfortunately the mother and her baby died due to severe retroperitoneal hemorrhage.

Conclusion: The possibility of a ruptured renal artery aneurysm should be considered in pregnant women with evidence of retroperitoneal hemorrhage.

Key words: aneurysm, renal artery, pregnancy

Case Report

A 35 year old female patient, Gravida 9 para 8, in her 38th week of pregnancy, with no significant medical history, presented to our obstetric unit at Al-karak Military hospital as labour pain. On examination her blood pressure was 140/90 mmHg and pulse rate 80 beats per min. An ultrasound was performed which revealed a viable fetus in cephalic presentation with normal growth matching the gestational age. Doppler studies were within normal values and amniotic fluid was reported as normal. The cervix was 3 cm dilated.

Three hours after admission in the labour ward the patient started to have sudden onset of severe left flank pain associated with nausea. Repeated vitals were taken; they demonstrated an increase in heart rate up to 120 beats/min and systolic blood pressure at 90 mm Hg. Her laboratory values revealed hemoglobin of 4.7 g/dL and hematocrit of 15.5%. The patient was aggressively resuscitated with isotonic fluids and 3 units of packed red blood cells. She responded appropriately to transfusion. When stable, she underwent a computed tomography scan of the abdomen and pelvis which demonstrated a moderately sized retroperitoneal hematoma surrounding the left kidney. The patient was taken to the operating room with suspicion of ruptured uterus; the patient looked pale with evidence of blood loss. Re-assessment of the fetus showed absence of fetal heart motion.

The patient continued to show drop of blood pressure, 90/50, thready pulse of 100 and marked tenderness to palpation of her left flank.

The patient underwent urgent laparatomy. A classical caesarean section was performed under another blood . Four units of whole blood were transfused rapidly but deterioration continued. Blood pressure was un-recordable; the pulse volume was very weak. Still birth fetus was extracted in cephalic presentation with no signs of obvious structural abnormalities. There was no active bleeding in the abdominal cavity but the uterus was pushed to the right side by a large retroperitoneal hematoma. Hematoma was opened; left renal artery was seen to be dilated and ruptured. Trial of clamping of the artery was performed; at that time the patient arrested despite having received 21 units of blood.

Discussion

Renal artery aneurysm (RAA) is a rare condition, with an incidence ranging between 0.01% and 0.09%, and accounts for 1% of all aneurysms. In the past this condition was discovered accidentally or only diagnosed after autopsy(1).

Nowadays with the introduction of angiography imaging techniques in practice, more frequent cases have been diagnosed but the incidence is still low(2).Risk factors for rupture include incomplete calcification, size >2 cm, progressive enlargement and pregnancy(3). Rupture of RAA in a kidney during pregnancy is a rare and well described catastrophic event, with a high mortality rate for both mother and fetus(4).

RAA are divided into true and false. True aneurysms are caused by congenital weakness; atherosclerosis and trauma. False aneurysms are posttraumatic, with rupture of the artery and occlusion of the defect by blood clot.

Reviews of rupture of RAA during pregnancy were made by Burt in 1956 and by Pedowitz in 1957. Factors that appear to increase the incidence of rupture during the third trimester of pregnancy are: an increase in cardiac output and blood volume, an increase of intra-abdominal pressure with enlarging uterus and hormonal factors acting on blood vessel walls causing a relaxation of vascular walls.

Diagnosis of rupture of RAA during pregnancy is very difficult as there is no pathognomonic pain or presentation. When rupture occurs during pregnancy the clinical presentation is easy to be confused with those more common conditions like placental abruption or ruptured uterus as in our case. Most of the cases were discovered incidentally or after autopsy. When rupture of RAA occurs during pregnancy it carries a high fatality or poor feto-maternal outcomes. When RAA is diagnosed during pregnancy the treatment modalities, are conservative if non calcified and small < 2 cm or aneurismal resection and vascular reconstruction. End to end anastomosis or nephrectomy is done when the patient has extensive renal injury or is haemodynamically unstable. It is usually done as a life saving procedure.

The clinical presentation of our case was easily confused with those more common conditions, as she was thought to have either a placental abruption or ruptured uterus.

Dayton et al(4), reported that in a case of ruptured RAA during pregnancy, the retroperitoneal anatomy may be severely distorted by massive haematoma. It may be nearly impossible to determine the exact anatomy of renal vessels and the presence or absence of the contra-lateral kidney at the time of surgery.

Spontaneous rupture of RAA is more likely to occur during pregnancy and when it does, it is associated with high mortality for both the mother and fetus. Increased blood flow and intra-abdominal pressure, and vascular changes secondary to increased steroid production are postulated as contributory to the increased risk of rupture of RAA during pregnancy(5).

Conclusion

The possibility of a ruptured RAA should be considered in pregnant women with evidence of retroperitoneal hemorrhage.

References

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