

Introduction

Intramural pregnancies are an exceedingly rare ^[1] form of ectopic pregnancy, where the embryo implants wholly within the myometrium away from the cavity or the Fallopian tube. Diagnosis of intramural implantation is particularly difficult. Previous authors ^[2]have reported on the role of ultrasound and MRI. The risk of life-threatening haemorrhage due to uterine rupture is significant and a hysterectomy is often required in such cases. The pathogenesis of intramural pregnancies is uncertain. Risk factors include history of uterine trauma, myomectomy, caesarean section or dilatation and curettage. Trauma results in the formation of a sinus tract within the endometrium, enabling the embryo to penetrate into the myometrium. Pegnancies rarely exceed 12 weeks’ gestation as the risk of uterine rupture and maternal mortality are substantial ^[3]. It is therefore remarkable that our patient’s pregnancy continued until 31 weeks’ gestation.

Case Report

A 33 year old woman, Para 0⁺¹ (previous miscarriage) with a history of open myomectomy presented at 6⁺⁵ weeks’ gestation with pelvic pain and vaginal bleeding. A TV scan queried the location of her pregnancy, there appeared to be a thin rim of myometrium around the gestation sac. Subsequent scans did not show any abnormal findings. Throughout her pregnancy she had repeated episodes of unexplained abdominal pains.

At 17⁺⁵ weeks gestation, she was admitted with right iliac fossa pain. She was treated for constipation and discharged. Four days later, she re-presented with identical symptoms. Differential diagnoses included: constipation, red degeneration of fibroids, ovarian cyst accident and appendicitis. She wall. The impression was of a ruptured haemorrhagic ovarian cyst. She had further bouts of abdominal pain over the subsequent weeks. underwent an open appendicectomy. The appendix looked normal and approximately 300mls of dark red blood was seen in the pelvis. An attempt to visualise her pelvic organs was limited by the “grid iron” incision.

At 31 weeks’ gestation she presented with significant abdominal pain with suspected preterm labour. She had a normal CTG. Her pain worsened several hours later and she transferred to the operating theatre for a Category1 Caesarean section for a possible abruption. On entry into the abdomen, there was extensive haemoperitoneum seen with a uterine rupture. A fresh stillborn baby was seen in the epigastrium. The placenta was morbidly adherent and was removed with significant difficulty. Her blood loss was uncontrollable and a subtotal hysterectomy was performed by two consultants. Following massive transfusions and a brief spell in the ITU, she recovered well and was discharged home within a week.

Histology of the uterus confirmed several leiomyomata. There was extensive infiltration of the myometrium by trophoblast and chorionic villi without associated decidualised endometrium. There appeared to have been serosal rupture and the appearances were consistent with placenta percreta..

Discussion:

Following a retrospective review of all her ultrasound images, it was clear that the presumed “failing second gestation sac” was in fact the uterine cavity. The pregnancy had never implanted in the cavity. It had implanted wholly within the myometrium and developed there until her uterus ruptured at 31 weeks. Intramural pregnancies are characterised by the presence of trophoblastic tissue beyond the endometrial/myometrial junction. although the pathophysiology is poorly understood, previous surgical trauma to the uterus for example myomectomy, as was the case in our patient, can result in the formation of myometrial defects, which predispose to intramural implantation. Given the variation in implantation sites, intramural pregnancies are notoriously difficult to diagnose.

Ultrasound criteria for intramural pregnancy include::

- Gestation sac or products of conception located above the internal os and media to the interstitial portion of Fallopian tube.
- Evidence of trophoblast breaching the endometrial/myometrial junction (partial intramural pregnancy) or completely surrounded by myometrium (complete intramural pregnancy)
- Lack of decidual reaction adjacent to the trophoblast

Evidence of increased peri-trophoblastic blood flow on colour doppler examination

Conclusion

On reflection of the course of this patient’s pregnancy, there were missed opportunities in making a diagnosis for the cause of her abdominal pain. Laparoscopy has a place in the investigation of pain in pregnancy. Although the safety of laparoscopy in pregnancy is the subject of debate in published literature, had a laparoscopy been performed at 17 weeks during the course of the investigation of this patient for appendicitis, it is likely that the diagnosis of her intramural pregnancy would have been made earlier. This would have enabled an honest an open discussion with the patient about the subsequent management of her pregnancy.

References:

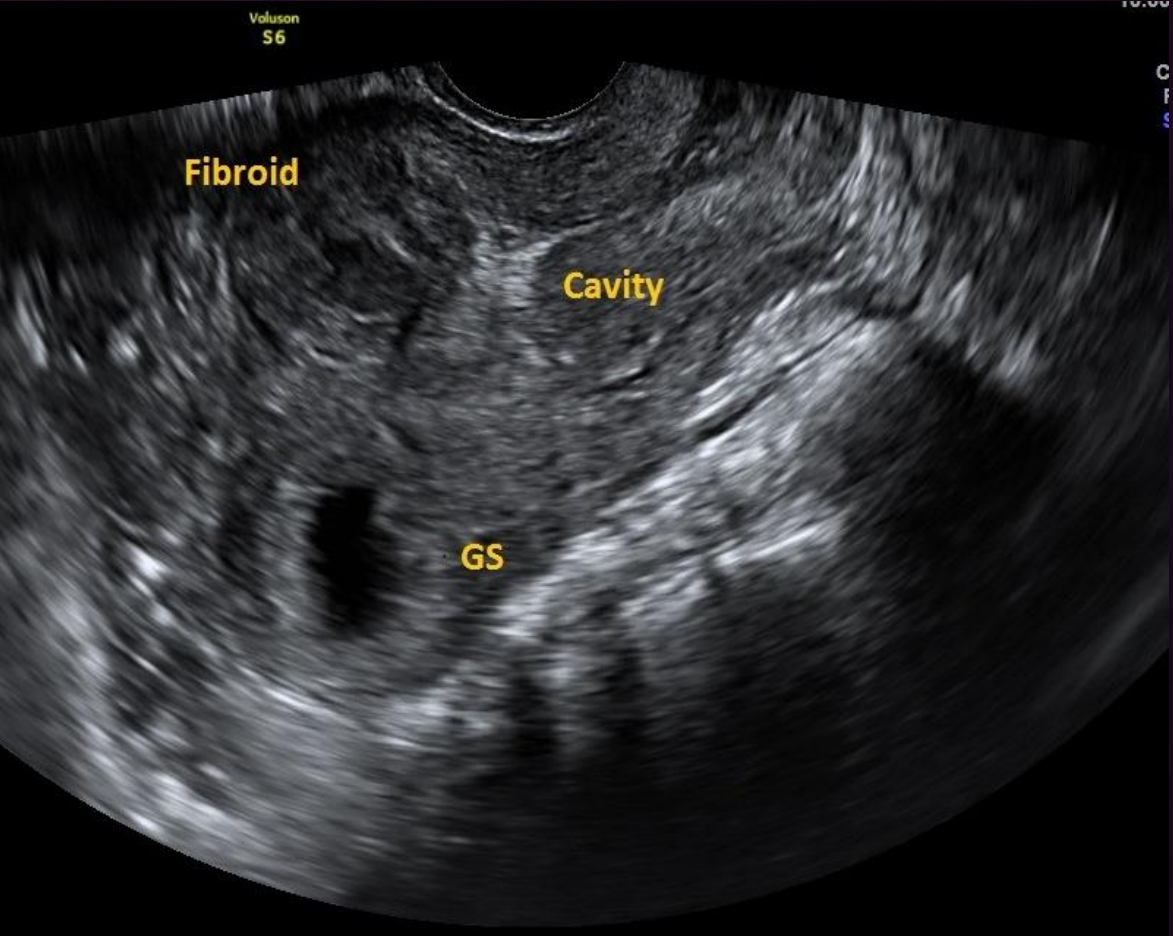
1. Boukhanni L, Benkaddour YA, Bassir A, Aboulfalah A, Asmouki H, et al. (2014) A Rare Localisation of Ectopic Pregnancy: Intramyometrial Pregnancy in Twin Pregnancy following IVF: case ports in Obstetrics and Gynaecology 2014: 1-2.

2. Reddy R, Sarkar PS, Pinto DS, Philip B (2017) Intramyometrial Gestation: A Rare Localisation of Ectopic Pregnancy. Int J Radiol Radiat Ther 2(5): 00037.DOI: 10.1015406/ijrrt.2017.02.00037

3. Kirk E, Bottomley C, Bourne T (2014) Diagnosing ectopic pregnancy and current concepts in the management of pregnancy of unknown location. Hum Reprod Update 20 (2): 250-261



TVS showing empty cavity and an intramural GS and YS with very thin myometrium



TVS showing empty cavity and intramural GS and anterior fibroid.