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Uterine rupture in three Saudi pregnant ladies withco-existingplacenta accreta, ectopic pregnancy, multiple leiomyomas and molar pregnancy: A case series and review of literature

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ABSTRACT

This is a case series of three Saudi pregnant ladies who presented within a week interval with moderate abdominal pain and cardiovascular shock, each presenting with additional obstetric or gynecologically significant condition(s). All cases presented with clinical shock, necessitating the need for prompt resuscitation as they were all transfused with packed red cells and fresh frozen plasma peri- and/or intraoperatively. There were high indices of suspicion at presentation for serious obstetric emergencies.

Two of the cases had previous uterine scar from caesarean section. Aside the uterine rupture, there were other pathologies: Case 1 had lower uterine segment placental implantation and accreta. Case 2 had ectopic pregnancy and utero-vesical adhesion, in addition to the ruptured uterine wall. There was an associated anterior abdominal wall endometriosis, ectopic pregnancy and molar pregnancy in case 3.

This case series was able to demonstrate other possible predisposing factors or precipitants of uterine rupture, aside the generally implicated previous uterine scar. Thus, there must be a high index of suspicion for these other conditions whenever there is a uterine rupture, with or without previous scar.

KEYWORDS: Ectopic pregnancy, Molar pregnancy, Placental accreta, Uterine rupture, Uterine scar.

I. INTRODUCTION

Uterine rupture is defined as the separation of all layers of tissue covering the fetus, which include the fetal membranes, decidua, myometrium, and serosa.[1]Previous scar, usually through caesarean section has been severally established as a known and most prevalent risk factor for uterine rupture.[2–4] It could however be either partial (dehiscence) or complete rupture. [1–3] Various factors/ conditions have been identified has possible predisposing factors for rupture of the uterus with previous scars. These are midline uterine scar (classical C-section), previous rupture, short pregnancy interval, labor induction (especially with Prostaglandins), macrosomic baby and more than one previous C-section.[5,6]Uterine rupture in the early/ mid pregnancy is generally uncommon.[7]

Imaging has a fundamental role in determining the status of the uterus, mother and fetus in patients at risk, whether a rupture is suspected or not. Ultrasonography, as a readily available imaging tool, as well as magnetic resonance imaging are well established tools for this task.[8–11] Computed tomography despite using an ionizing radiation, can also be utilized in emergency when the benefit outweighs the risk, especially when there is cardiovascular compromise and diagnosis is in doubt.[12]

The rupture of the uterus is known for major morbidity and mortality to both mother and fetus, if not diagnosed early.[3,13] Better foeto-maternal outcomes have been reported with availability of standard obstetric practice and prompt surgical intervention.[14]

II. CASE REPORT

Case 1

Patient is a G4P3 Saudi who presented with severe loin and epigastric pain of a day duration. She was referred on account of clinical shock from a suspected internal bleeding. She was at 21weeks gestation with two previous caesarean sections, the last operation was about two years earlier. At presentation she was normotensive (already resuscitated from referral center), but tachycardic and had generalized abdominal moderate

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tenderness. Patient was diagnosed of uterine scar rupture for which she had exploratory laparotomy and repair of the tear. Intraoperatively, there was moderate haemoperitoneum (with clots) of about 2litres and a left sided scar rupture with a small opening. The placenta was accreta with lower segment implantation. She had blood transfusion of 2units intraoperatively.

Patent had abdominopelvic ultrasound and computed tomography (CT) scans. The ultrasound showed an intrauterine viable fetus with fetal tachycardia, and moderate free intraperitoneal fluid, showing some low-level echoes (Figure 1A). There was a right sided mild hydronephrosis (backpressure effect from pregnancy). The CT was however requested due to high level of suspicion of an intraabdominal bleed and verbal consent was obtained, after explaining the potential risk of ionizing radiation to the mother and baby.CT showed a gravid uterus with moderate dense intraperitoneal fluid, denser in the pelvic region and around the uterus, which was more suggestive of hemoperitoneum. The right sided hydronephrosis was also confirmed (Figure 1B).

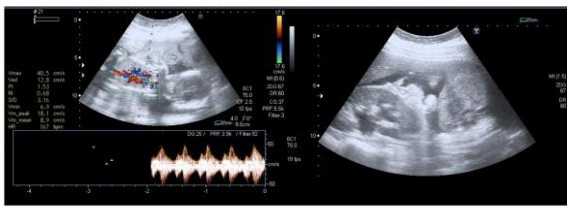

Figure 1A: Ultrasound showing moderate free intraperitoneal fluid with low level echoes (hematoma) and fetal tachycardia

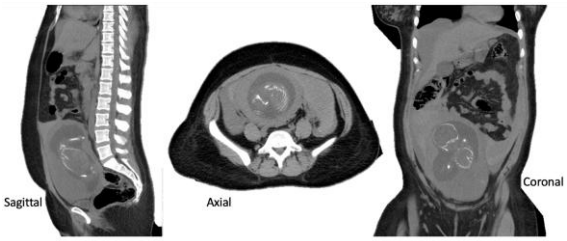

Figure 1B: CT abdominopelvic showing moderate free intraperitoneal fluid, of hyper- and hypo-dense appearance suggestive of hematoma

Case 2

She is a Para-5, all alive with previous caesarean section in all deliveries. Patient presented with severe right iliac/ abdominal pain, headache and bleeding PV. There was background history of multiple leiomyomas. As at the surgical induction time, she was in shock. A diagnosis of left sided ruptured ectopic pregnancy with associated uterine scar rupture was made at surgery. The uterine scar rupture was left-sided and posterolateral extending to the cervix. There was anterior uterine adhesion with urinary bladder. There was moderate hemoperitoneum (old dark colored) with clots and no active bleeding. She had subtotal hysterectomy and left salpingo-oophorectomy. Estimated blood loss was about 3litres and she had 6units of pack cells and 6units of fresh frozen plasma (FFP).

Patient had a pelvic ultrasound which showed a poorly defined mass in the left adnaexium/pelvis with an echogenic oval shaped structure within it. The outline of the uterus could not be well delineated. There was moderate free intraperitoneal collection (Figure 2).

Figure 2: Ultrasound showing poor delineation of uterine margin (A), poorly defined mass in the left adnexium with central echogenic structure (B) and free intraperitoneal fluid (C)

Case 3

She is G3P2 22week pregnant Saudi with no previous uterine scar, who presented with moderate abdominal and back pain. As of the time of surgery, patient was also in shock for which she had 4units of packed cells and 4units of FFP. Endometriotic tissue was found in the rectus sheath. There was moderate intraperitoneal active bleeding from the right cornual (angle) region and right tube. There were vesicles, suggestive of partial molar pregnancy. A diagnosis of right ectopic pregnancy and uterine rupture with co-existing partial mole was made. Patient had partial hysterectomy and right salpingectomy.

Patient had pelvic ultrasound which showed bulky uterus. There was a fetal pole with no active cardiac activity, consistent with intrauterine fetal death (IUFD). There was a multi-cystic/ vesicular mass within the endometrial cavity, giving the so-called snow- storm appearance of molar pregnancy. A hypoechoiec area was seen in the fundal region with an overlying hyperechoiec collection (hematoma). Moderate intraperitoneal fluid of varying echoes was seen, in keeping with intraperitoneal hematoma (Figure 3).

Figure 3: Ultrasound showing fetus with no cardiac activity (A), a multicystic mass giving the snow storm appearance of molar pregnancy (B) and free intraperitoneal fluid (C)

III. DISCUSSION

Case 1 and case 2 had previous caesarean scar which is an established risk factor for uterine rupture, as documented in other studies.[3,7,15] Case 3

however had no previous uterine scar, though there was the presence of other risk factors like hydatidiform mole and a rupture ectopic pregnancy. Aside previous uterine scar, other risk factors had been reported, just like the presence of multiple leiomyomas, placenta accreta, ectopic pregnancies and molar pregnancy in these cases.[15–22]

All these patients had history of shock, which is consistent with the severity of a ruptured uterus. This had also been documented in previous research.[14,15,17]Two of the cases presented with absent fetal heart, which is in agreement with other studies in which there were various forms of abnormal fetal heart or outright intrauterine death.[3,5,14]Presence of a haemoperitoneum has also been reported as the hallmark of a ruptured uterus, as obviously seen in the cases under review.[15,23,24] Two of the cases (case 2 and case 3) were offered partial hysterectomy, which is the usual endpoint.[15,23,25,26]Uterine rupture in unscarred uterus had been reported to be associated with more feto-maternal morbidity, such as more haemoperitoneum, fetal loss and hysterectomy, just as seen in case 3.[17] Presence of hematoma around the previous uterine scar had also been stated to indicate possible scar rupture[15]Despite association of uterine rupture with urinary bladder rupture, none of the cases show any associated urinary bladder rupture, except for case 2 that demonstrated adhesion with previous scar tissue.[15]Despite the established feto-maternal complications associated with uterine rupture, a better outcome had been reported in an institution with close foeto-maternal wellbeing monitoring and in-house obstetric, anesthetic and surgical staff.[14] Computed tomography has been utilised in a case of emergency to resolve a diagnostic dilemma in a suspected uterine rupture, in which ultrasound was inconclusive just like in case 1.[24] Ultrasound have however generally been shown to be of great relevance in the diagnosis/ management of uterine rupture due to the usual acute presentation and need for urgent intervention. Free intraperitoneal fluid with/ without echogenic appearance has been described as the usual appearance. Occasionally, the precise location of the rupture might be demonstrable.[26,27]

IV. CONCLUSION

This case series was able to demonstrate other possible predisposing factors or precipitants of uterine rupture, aside the generally implicated previous uterine scar (caesarean section and/or myomectomy). Thus, there must be a high index of suspicion for these other conditions, such as multiple leiomyomas, molar pregnancy, abnormal placental implantation, and ectopic cyesis whenever there is a uterine rupture, with or without previous scar.

Consent

A verbal consent was obtained from the parents, having assured them of maintaining strict patient's anonymity in all writings and images involved in this publication.

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There was neither external funding nor any competing interest.

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