Fundal Rupture of the Uterus following Blunt Abdominal Trauma in a Primigravida

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Abstract
A primigravida with a fundal uterine rupture of an unscarred uterus caused by a blunt abdominal trauma managed conservatively.

Introduction
The uterus is relatively resistant to blunt trauma, however, women sustaining such trauma should be watched carefully for signs of a ruptured uterus. Patients with severe abdominal trauma must be monitored for signs suggestive of a rupture regardless of their parity. Moreover, patients who undergo conservative surgery should always be counselled regarding the risk of a subsequent pregnancy, chances of a recurrent rupture, the need for an elective caesarean section, the chances of rupture prior to labour, the hazards of unattended labour and the signs of a possible uterine rupture.

Case Report
A 24 year old primigravida, was admitted in an emergency with evidence of polytrauma. On examination, the patient was drowsy and disoriented. No history could be obtained from the patient other than her age and the fact that this was her first pregnancy. No history as regards to her name, address or relatives could be obtained. No history regarding the nature of her trauma could be obtained.

On examination, the patient was drowsy, irritable, pale and did not show any sign of being in pain. Her pulse was 92/min with good volume and her blood pressure was 130/80 mm of Hg. Her cardiovascular and respiratory examination was normal. The patient had a small abrasion over her lower lip, a contusion on the left side of face measuring 3 x 3 cm, an abrasion over her right breast, a contusion measuring 3 x 3 cm over the left breast, a superficial laceration measuring 4 x 2 cm over her right thigh and bruises over both her inner thighs. She also had a 4 x 5 cm contusion and an abrasion on the left side of her abdominal wall.

On abdominal examination, the uterus was 32-34 weeks in size with a foetus in longitudinal lie and a cephalic presentation. No foetal heart sounds were audible. The abdomen was distended.

On vaginal examination, the cervix was posterior and uneffaced. The os was pinpoint and closed. There was fresh bleeding per vaginum.

After stabilization of the patient, an ultrasound examination was performed.

The ultrasound report showed a foetus lying free in the peritoneal cavity. The uterus was bulky. There was free fluid in the peritoneal cavity. A decision to take the patient up for an exploratory laparotomy for uterine rupture was made.

On laparotomy, the foetus was found lying free in the peritoneal cavity along with the placenta. On examining the uterus, a large fundal rupture measuring approximately 10-12 cm extending from one cornual end to the other was seen (Fig. 1). On the anterior wall of the uterus, below the fundus, two partial thickness tears of the uterine wall involving the serosa and the outer 1/3 of the myometrium with irregular margins measuring 10 cm and 8 cm each were observed. These probably represented the site of impact on the uterus. On the posterior wall of the uterus, another partial thickness tear measuring 8 cms in length was seen (Fig. 2). This was probably a contre-coup injury sustained by the uterus pushed against the sacral promontory.
A conservative surgical approach during which the fundal rupture was sutured using a no. 1 delayed absorbable suture in three layers was undertaken. The anterior and posterior myometrial tears were also sutured continuously with the same suture material in a single layer. The liver, spleen and the bowel was explored for any additional injury and none was found. A small ileal mesenteric tear was found measuring 3 - 4 cm which was sutured using 2 - 0 silk sutures. The patient received two units of packed cells intra-operatively.

The post-operative course of the patient was uneventful and the patient recovered well.

Discussion

Miller and Paul found that trauma accounted for a ruptured uterus in only 3 out of 150 women.\textsuperscript{1} Blunt trauma results in uterine rupture in less than one per cent of severe cases. Rupture is more common in a scarred uterus and that too on a direct impact of substantive force.\textsuperscript{2} Pearlman and Cunningham described a fundal ‘blow-out’ with a foetal decapitation in a 20 week pregnancy following a high-speed collision.\textsuperscript{3}

Sheth described outcomes in a series of forty-one mothers who underwent repair of a ruptured scar without tubal sterilization. Twenty-one subsequent pregnancies were noted in these patients and uterine rupture recurred in four of these women.\textsuperscript{4} Since this study dealt with rupture of only scarred uteri, it would not be possible to extrapolate these figures to a traumatic fundal rupture of unscarred uteri. Women with a previous rupture confined to the lower uterine segment have been reported to have a six per cent recurrence risk in subsequent labour whereas those with a prior rupture involving the upper segment have a recurrence risk of thirty-two per cent. Moreover these patients with a previous upper segment rupture are also susceptible to a spontaneous rupture prior to the onset of labour.\textsuperscript{5}

References