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Spontaneous Rupture of Spleen

SUMMARY

Spontaneous rupture of spleen, is a rare abdominal catastrophy, during pregnancy and labour, associated with 100% maternal and foetal mortality if not diagnosed in time. An awareness about this rare entity on the part of an obstetrician leading to timely diagnosis, prompt splenectomy and proper replacement of blood provides good prognosis for mother and foetus. A rare case of spontaneous rupture of NORMAL spleen during labour with delivery of a live baby by lower segment caesarean section followed by splenectomy is presented and the literature is reviewed.

INTRODUCTION

Spontaneous rupture of spleen during pregnancy, a potentially fatal condition, was first reported by Atkinson in 1874. Since then the existence of this entity has remained debatable. Many authors deny its existence (Anderson 1961, Robins 1962). Orloff and Peskin (1958) put forward four criteria to decide this entity and reported 28 cases of spontaneous rupture of NORMAL spleen.

The criteria are:

1. No H/O trauma after close questioning.
2. No evidence of disease that may have adverse effect on the spleen.
3. No evidence of perisplenic adhesions to to suggest previous trauma.
4. Spleen should be normal on macroscopic and microscopic examination.

The case presented here fulfills these criteria and therefore can be classified under the spontaneous rupture of normal spleen.

Case History

Mrs E.I. a Zambian lady aged 32 years, para 4 gravida 5 was admitted to labour ward with complaints of lower abdominal pain and backache for six hours. On examination, the patient was conscious, afebrile, the pulse was rapid and thready, she was remarkably pale, and blood pressure was 100/60 mm Hg. Patient seemed to be in shock with cold extremities. There was history of strong uterine ocontractions for last five hours. There was no history of bleeding per vaginum, haematuria, or trauma.

On examination the abdomen was very tender, the fundal height was of 38 weeks gestation and the foetal parts were difficult to define. The foetal heart sounds were absent. There was evidence of free fluid and shifting dullness. Vaginal examination revealed the Cervix to be Multiparous, effaced, the membrane was intact and the pelvic capacity was adequate for vaginal delivery. A diagnosis of Haemoperituneum with probability of ruptured uterus was made. The patient was prepared for emergency laparotomy and an urgent haemogram showed H.B. 7.6 gms%.

On exploratory laprotomy through subumblical mid-line incision, the uterus and adenexa were found intact. Three litres of blood and clots were removed from abdomen. Lower segment caesarean section was done and an asphyxiated male baby weighing 3 kg delivered and responded well to resuscitation. The incision was then extended above umblicus towards left, hypochondrim to trace the source of bleeding.

A vertical tear in the splenic capsule extending into the substance of the spleen was found. The spleen was otherwise normal in size and shape. The splenic vessels were intact. There were no perisplenic adhesions. Splenectomy was done. Patient had an uneventful recovery after splenectomy.

Microscopically, the specimen showed disruption of the capsule and underlying substance by recent haemorrhage. There was no evidence of any organic pathology.

DISCUSSION

Celsus in 15th century first reported the case of splenic rupture. (Blain 1951). After three decades in 1803 Saxtorph reported rupture of spleen during

pregnancy, for the first time.

Aetiology

During pregnancy spleen is predisposed to trauma because of changes in organ positions due to growing uterus, bearing down efforts in labour, enlargement of spleen or hypervolemia in pregnancy. (Paley 1968, Bankole and Kent 1966, O'Brein 1963, Gilbert 1964).

Many classifications have been put forward as far as etiology is concerned. For an obstetrician following classification would be practicable.

A. Traumatic Rupture:
   (a) Internal injury e.g. sneezing, coughing, coitus.
   (b) External injury – Penetrating injury;
   – non-penetrating injury.

B. Spontaneous Rupture of:
   (a) Diseased spleen e.g. malaria, lukaemia, sarcoidosis.
   (b) Normal spleen.

C. Toxaemia:

Research in pathological changes in eclampsia has revealed that vessels undergo fibrinoid vasculosis (Govan 1961) and can lead to complete necrosis of the vessel with subsequent haemorrhage. Sparkman (1958) has reported four cases of rupture of toxaemic spleen. However, the relationship between these vascular changes and isolated rupture of the spleen seems to be remote.

CLINICAL PICTURE AND DIAGNOSIS

Preoperative diagnosis of rupture of spleen during pregnancy is difficult unless there is history of trauma. In early pregnancy, the condition is usually misdiagnosed as ruptured ectopic pregnancy, rupture or torsion of an ovarian cyst of perforated viscus (Paley 1968) and in late pregnancy as abruptio placentae, ruptured viscus, rupture of uterus or conditions associated with shock like pulmonary embolism or mycardial infraction.

The diagnostic aids are history of trauma (may or may not be there) to the upper left abdomen or lower chest followed by pain, tenderness and spasm in the left upper quadrant with shoulder pain, declining haemoglobin and signs of shock if intra-peritoneal bleeding continues. Kehr's sign i.e. Accentuation of left shoulder pain in Trendelenburg position and by pressure on left upper abdominal wall was found to be positive in 40% of Willox's (1965) series and is a valuable aid. Saegesser's sign is lesser known sign.

Culdocentesis and four quardrant paracentesis has limited value in presence of gravid uterus. X-ray signs as suggested by Cimmino (1964) may be of assistance but rapidly deteriorating condition of the patient and the intrauterine gestation often precludes this investigation.

TREATMENT

The basic treatment is to replace blood and do splenectomy irrespective of general and gravid condition of the patient. Even if the patient is in poor condition and hypotensive, should she fail to respond to blood transfusion, exploration and splenectomy is indicated (Woolridge 1969).

Apart from splenectomy, the obstetric management is equally important. The review of literature by Buchsbaum (1967) shows that the foetal wastage is as high as 69.5% and no infant survived when splenic rupture occured in third trimester. It seems that unless the gravid uterus mechanically interferes with access to the spleen, the pregnancy should not be terminated. It is also important to note that preoperative foetal heart sound should not have any bearing on management. In the case presented, the foetal heart sound were thought to be absent pre-operatively but to our surprise the baby was delivered live and responded well to resuscitation.

I regret to mention that because of the fire mishap to the Medical Illustration Unit in 1979, the Photomicrographs for this article are not available.

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