SPONTANEOUS RUPTURE OF THE SPLEEN IN PREGNANCY: REPORT OF A CASE

D. KRUGER, M.B., B.CH. (RAND), *Brakpan*, and L. J. G. KRUGER, F.R.C.S. (EDIN.), *Springs*

Mrs. E.C.V., a European female, aged 28 was admitted to the Far East Rand Hospital on 13 October 1958 at 3.30 p.m. with the following history:

She was 22 weeks pregnant, and that morning, on getting up from the breakfast table, she felt a sudden, sharp pain in her left hypochondrium. She felt nauseous and vomited twice. The pain radiated to her left shoulder, down the left arm and up the left side of her neck. Previously she felt quite well, apart from some dyspepsia, which she attributed to her pregnancy. She had had no previous illness apart from a few infectious diseases in childhood, and no operations; no malaria or typhoid. She had had 3 previous normal pregnancies and deliveries, the last being 6 years ago. She had not observed any vaginal bleeding, and no bowel or urinary symptoms. She emphatically denied any injury in the immediate past, and this was confirmed by her husband.

On Examination. She was pale and shocked. Blood pressure

80/50 mm. Hg. Pulse rate 110. Conjunctivae, gums and tongue were pale. No cyanosis. The abdomen moved very little with respiration. No evidence of bruising. Generalized abdominal tenderness. Rigidity and guarding more marked in the left hypochondrium. Rebound tenderness present. Shifting dullness present. Bowel sounds present but decreased. Vaginal examination revealed nothing abnormal. Rectal examination showed tenderness. Kehr's sign* and Saegesser's sign† were positive; a positive Ballance's sign‡ could not be elicited.

The diagnosis of splenic rupture was made and, after adequate blood transfusion, laparotomy was performed under general anaesthesia. A rupture 1 inch long into the splenic parenchyma at the upper pole on the convex surface near the superior border was found. The spleen felt normal in size and consistency, not unduly fixed nor unduly mobile. No perisplenic adhesions were present. Splenectomy was performed.

The spleen was normal in size and appearance, the laceration was fairly superficial, and sectioning showed no abnormality. The patient made an uninterruped recovery and was discharged on the 8th post-operative day. On 19 February 1959 she was delivered of a full-term normal boy weighing 9½ lb.

DISCUSSION

Spontaneous rupture of the spleen can be defined as 'rupture of the normal spleen occurring in the absence of trauma'. Since it was first described by Atkinson in 1874, reports have periodically appeared in the literature.

Indirect injuries, such as sudden rotation, flexion or extension of the trunk rarely cause rupture. Splenic enlargements, as those of malaria, typhoid fever and septicaemia predispose to easy and even spontaneous rupture, as also do perisplenic adhesions. Rupture may be caused by physiological strains of coitus, pregnancy, labour or defaecation. Spontaneous rupture of the normal spleen has been described, but in most cases it has been established that the history of injury was forgotten by the patient.[1]

Orloff and Peskin[2] found that, in all, 71 cases of spontaneous rupture of the spleen have been reported in the English literature. Of these, 43 cases could not be accepted by them because there was a possibility of trauma, or inquiry as regards injury was inadequate, or the spleen was pathological, or no histological report was available. Of the 28 accepted cases, 19 were male and 9 female, of whom 3 were pregnant but in good health.

Aetiology

The following theories have been advanced, but not one can wholly be accepted.

1. The spleen is diseased in only one area and since rupture occurs in this area all evidence of pathology is lost.

2. A state of portal congestion exists, giving rise to digestive symptoms and chronic venous congestion of the spleen, which ruptures as a result.

3. The spleen is abnormally mobile and undergoes repeated episodes of torsion, the resultant congestion causing rupture.

4. Reflex spasm of the splenic vein causes acute congestion with rupture.

5. Degenerative changes in arteries cause arterial rupture, interstitial haematoma, and subsequent rupture of the spleen.

6. Rupture of artery occurs owing to local vascular abnormality similar to congenital 'weak-spots' in the arteries at the base of the brain.

7. Changes take place in the spleen during parturition, predisposing it to rupture.

8. A normal spleen never ruptures, all supposed instances of spontaneous rupture being due to forgotten trauma.

In regard to the effect of pregnancy, Barcroft[3] showed in experiments on the exteriorized spleen of pregnant dogs that the organ shrinks during pregnancy, and observation in human beings indicate that the spleen neither enlarges nor becomes congested during parturition.

Trauma is difficult to confirm.

Symptoms

All 28 accepted cases in Orloff and Peskin's series had abdominal pain; in 54% the pain was initially in the left hypochondrium. Nausea and vomiting were noted in 68%, 71% felt faint or experienced dizziness, and Kehr's sign was present in 65%. Findings on examination were generally those of peritoneal irritation and loss of blood. In only 1 of the 28 cases was the correct diagnosis made before operation.

In our case the notable features are absence of trauma, absence of any disease which may have caused splenic pathology, absence of perisplenic adhesions, absence of undue mobility of the spleen, the presence of pregnancy, and physical findings identical with that of traumatic rupture of the spleen.

SUMMARY

A case of spontaneous rupture of an apparently normal spleen in pregnancy is described.

A review of the literature and theories on aetiology are mentioned.

The signs and symptoms in this case are identical with those in traumatic rupture of the spleen.

REFERENCES

1. Aird, I. (1957): *Companion of Surgical Studies*, 2nd ed., p. 1042. Edinburgh and London: Livingstone.
2. Orloff, M. J. and Peskin, G. W. (1958): Surg. Gynec. Obstet., **106**, 1.
3. Barcroft, J. (1930): Amer. J. Med. Sci., **179**, 1.

* Pain in left shoulder.
† Pain on pressure between two heads of sternomastoid muscle.
‡ Fixed dullness of left hypochondrium and shifting dullness of right flank.