SPONTANEOUS RUPTURE OF THE SPLEEN IN *P. VIVAX* MALARIA

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Rupture of the spleen is a well recognised complication of malaria but is a rare occurrence in military practice. The following case is presented because it demonstrates many of the difficulties in the diagnosis and treatment of the condition.

Case Report

A previously fit airman aged 22 years reported to his sick quarters on 13th June, 1966, with fever. He had just returned from a visit to the East coast of Malaya and claimed that he had taken paludrine regularly. No clinical abnormality was noted apart from fever and he was better within a few days.

On 21st June he was well in the morning but developed further fever that evening and was admitted to hospital. The only clinical findings were that he had a fever of 102°F and that the tip of his spleen was palpable. A blood film contained *P. vivax* trophozoites in large numbers. He received chloroquine (base) 600 mg at 10 p.m.

On 22nd June it was noted that he looked unwell and icteric with slight abdominal distention. There was tenderness across his lower abdomen and in the left sub-costal region, but the spleen was not felt. Bowel sounds were heard. The possibility of double infection with *P. falciparum* was considered but the blood film showed scanty *P. vivax* rings only. Blood examination revealed:—Hb 39 per cent, PCV 20 per cent, WBC 3,000 cu mm. He had meanwhile received a further 300 mg of chloroquine, and primaquine 7.5 mg b.d. was commenced. During the afternoon he developed increasing abdominal pain which was later aggravated by respiration although no shoulder-tip pain occurred. Reviewed that evening his distension was the same, but there was now an area of dullness to percussion extending 3 finger-breadths below the left costal margin. No edge or notch could be felt. Bowel sounds were now diminished.

A diagnosis of splenic rupture was made and a transfusion set up. X-ray of abdomen showed an opacity in the left upper quadrant displacing the splenic flexure downwards.

At laparotomy (Lt-Col. I. S. Lister, R.A.M.C.), four and a half pints of blood were collected by the sucker in addition to loss in clots and on swabs. An enlarged spleen with sub-diaphragmatic rupture was removed and after securing haemostasis, the wound was closed with drainage. During operation and over the next twenty four hours, the patient received seven packs of whole blood and 2,850 ml of dextrose-saline.

Post-operative recovery was uneventful. He received two further doses of chloroquine and completed a two week course of primaquine prior to discharge for convalescence.

Discussion

Rupture of the spleen during the acute phase of a primary attack is more common with *P. falciparum* infection "But has been recorded with *P. vivax* as well" (Manson Bahr, 1960). One may get some idea of the rarity of splenic rupture if one considers that in Burma in May/June, 1963 the incidence of malaria approached a peak of 2.5/1000/day

(Cope, 1952). Despite the high incidence of malaria in South East Asia Command, Manson Bahr (1960) cites only 17 cases of ruptured spleen in service personnel in this and in the Korean campaign. On the other hand, Harkins & Kolinski (1944) state that spontaneous rupture is rare unless malaria is present and give the surprisingly high figure of 1 in 30 deaths from this cause in Calcutta. Rupture is often caused by trauma, a fact well known to the Greeks, and apparently also to the Dyaks who are reported to have had an instrument to facilitate murder by this means (Johnston-Abraham, 1951). Rupture may be precipitated by increased intra-abdominal pressure, produced by coughing, bending, or straining at stool (McIndoe, 1932). One is tempted to suggest that repeated abdominal palpation may also play some part. Difficulty in establishing a diagnosis of rupture from any cause is frequently recorded (McIndoe, 1932, British Medical Journal, 1951, Perisho and Steiner, 1945). The diagnosis would appear to be largely clinical whatever the aetiology of the rupture (British Medical Journal, 1966). Manson Bahr (1960) refers to a latent period with absence of symptoms, and McIndoe (1932) refers to "Symptomatic silence" in relation to traumatic rupture. Pain may be very variable and shoulder-tip pain occurs late if at all. Tenderness may be very slight. Meteorism is said to be frequent leading to resonance anteriorly and dullness in the left flank (British Medical Journal, 1951). The pulse is not a reliable guide as there may be little or no increase in rate until considerable bleeding has occurred. Bowel sounds may also persist until late. Perisho & Steiner (1945) stress the importance of radiology in diagnosis, describing absence of the normal splenic outline and an opaque area due to blood displacing the gastric air bubble medially and the splenic flexure downwards. On the other hand a more recent report suggests that X-ray examination may be of relatively little value (British Medical Journal, 1966). Massive fluid replacement is always necessary in splenic operations. Splenectomy does not cure the malaria, and a full course of chemotherapy is essential (Manson Bahr, 1960).

Summary

A case of spontaneous rupture of the spleen in *P. vivax* malaria is described. The rarity of the condition in military practice is stressed. Some features of diagnosis and management are discussed.

Acknowledgements

I wish to thank Brigadier R. M. Johnstone and Lt.-Col. A. T. Cook for their help and advice in preparing this article.

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