

Case Report

Infectious mononucleosis, ruptured spleen and Cullen's sign

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Although Cullen's sign is usually associated with haemorrhagic pancreatitis, this report describes a case in which it occurred in a patient with infectious mononucleosis and non-traumatic rupture of the spleen. Thomas Stephen Cullen (1869-1953) professor of gynaecology at Johns Hopkins University Hospital, Baltimore USA, gave his name to a peri-umbilical ecchymosis resulting from a haemoperitoneum secondary to the rupture of an ectopic pregnancy. Over the years, it has usually been considered to be a sign of haemorrhagic pancreatitis, but it has also been associated with other conditions.¹ Although a similar case has been published,² we feel that its occurrence is rare enough to warrant mention, particularly in view of the opinion in a well-known medical text book that Cullen's sign is so infrequent in splenic rupture that it is academic,³ and a later (17th) edition does not make any mention of an association.

CASE REPORT A 22 year old male presented with an acute abdomen. He complained of pain localised to his left upper quadrant. There was no history of abdominal trauma. The diagnosis of infectious mononucleosis had recently been confirmed by a Paul Bunnell test. The patient's vital signs were stable on admission. There was no evidence of any lymphadenopathy. Abdominal examination revealed moderate tenderness, mild rigidity and guarding together with hepatosplenomegaly. Liver function tests (LFT) were markedly abnormal with elevated ALP, ALT and GGT. Full blood count (FBP) revealed a mild anaemia, but white cell count, platelets, urea and electrolytes (U&E) and amylase were normal. Abdominal radiograph (Fig. 1) confirmed an enlarged spleen, measured by ultrasound scan as being 19 cm from pole to pole. Hepatomegaly was also noted. The patient remained

haemodynamically stable and was treated conservatively with daily monitoring of FBP, U&E and LFTs.

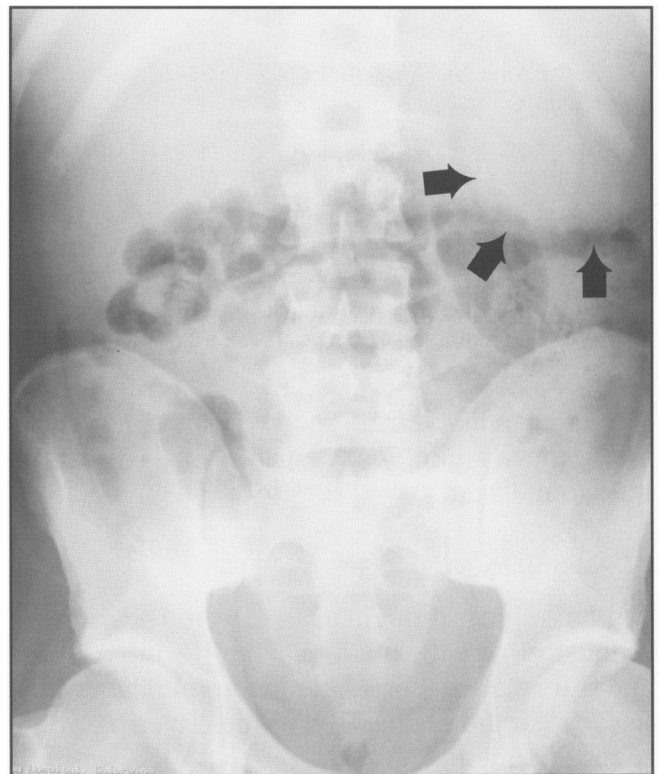


Fig 1. Abdominal radiograph demonstrating enlarged spleen.

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One week after admission, he had another episode of abdominal pain, which radiated to his left shoulder. Repeat bloods were unchanged. Abdominal examination now revealed a peri-umbilical ecchymosis, Cullen's sign (Fig. 2) Repeat abdominal ultrasound scan was unchanged. With the recurrence of his symptoms, the presence of Cullen's sign, and the ultrasound findings, a diagnosis of a further splenic rupture secondary to infectious mononucleosis was made. The patient remained haemodynamically stable, and the conservative approach to his management was continued.

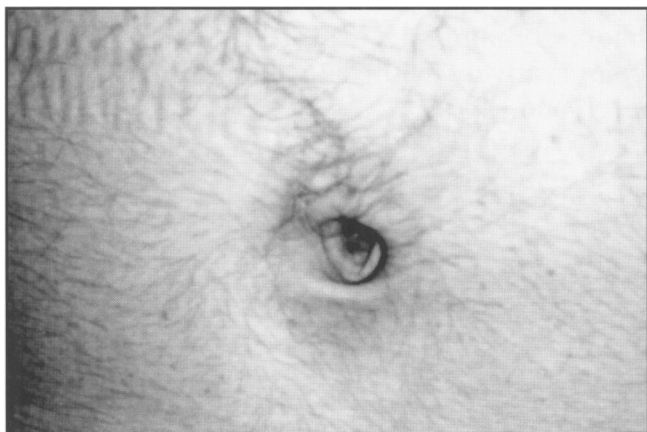


Fig 2. Periumbilical ecchymosis – Cullen's Sign.

He made an uneventful recovery and four weeks later the spleen was normal on follow-up ultrasound scan.

DISCUSSION

Cullen's sign is thought to arise by retroperitoneal blood tracking through the falciform ligament and from there to the subcutaneous peri-umbilical tissues via the connective tissue covering of the round ligament.⁴

Infectious mononucleosis is due to an infection with the Epstein-Barr virus (EBV). Transmitted primarily in saliva, its peak incidence occurs in the teenage years. It is usually a mild and self-limiting disease. Patients may, however, develop a variety of complications, some of which can be life threatening. The most common of these is spontaneous splenic rupture which occurs in 0.1-0.5% of cases.⁵ It is important to note that an absence of a history of trauma may delay the diagnosis of this potentially fatal complication, increasing mortality to around 30%.⁶ It is thought that rupture occurs as the result of infiltration by

mononuclear leucocytes, which in turn weakens the trabecular and capsular structure of the spleen.⁷

In this case, the diagnosis of splenic rupture was easily and confidently made with the aid of an abdominal ultrasound scan and the presence of Cullen's sign. Abdominal computed tomography (CT) scanning can also be useful to differentiate between those patients requiring surgery from those who do not.⁸

Other potentially serious physical and psychological complications with long term implications may also arise.^{9,10}

There appears to be little benefit in the use of anti-viral treatment in treating uncomplicated infectious mononucleosis. Steroids have been used with some success in some complications.¹¹

CONCLUSION

We would like to highlight that the presence of abdominal pain is an uncommon symptom in infectious mononucleosis and its occurrence is therefore a danger sign that a rare and potentially life threatening complication may have occurred.

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