

Staphylococcal suppurative mesenteric lymphadenitis

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Summary

Two young adult males presenting with suppurative mesenteric lymphadenitis, caused by coagulase positive staphylococcus, with unusual clinical findings are reported. Pre-operative and operative differential diagnosis and management are discussed. Previous publications are briefly reviewed. The condition is extremely rare in adults and the pathogenesis is not well understood.

KEY WORDS: Staphylococcus, mesenteric lymphadenitis.

Introduction

Non-specific mesenteric lymphadenitis is one of the common causes of acute abdominal pain in children, although rarely seen in adults. Suppuration and abscess formation is not common. Very few cases have been reported in the world literature. *Streptococcus haemolyticus* is the commonest organism responsible for suppuration and abscess formation. However, other organisms have also been the culprits occasionally.

Coagulase positive staphylococcus has been cultured from only 5 patients suffering from acute mesenteric lymphadenitis so far in previous publications. There is only a solitary case report in a child, where it was the cause for actual pus formation along with *Streptococcus haemolyticus*. We are reporting 2 young adults who had staphylococcal suppurative mesenteric lymphadenitis.

Case reports

Case 1

An 18-year-old male was admitted with a 5 days history of left hypochondriac pain, vomiting, high

grade fever, constipation and awareness of a mass in the left upper abdomen.

On examination, he was toxic and febrile. He had a tender, firm lump 8×6 cm which was pulsatile, with restricted mobility in the left hypochondrium. There was no hepatosplenomegaly.

Investigations showed haemoglobin was 11.75 g/dl and white blood cell count 9.8×10^9 /litre with 71% neutrophils. Blood culture was sterile. Chest X-ray, intravenous pyelography and barium meal were essentially normal.

The pre-operative diagnosis was of perigastric abscess or mycotic aneurysm of splenic artery, and the patient was explored by a mid-line vertical supra-umbilical incision.

There was a soft lymph node mass, 14×10 cm, in the root of the mesentery near the duodeno-jejunal flexure, containing 150 ml of creamy pus which was drained. Biopsy was taken from the abscess wall and the cavity was closed with interrupted catgut sutures. Other mesenteric lymph nodes were discrete, firm and enlarged. Lymph node biopsy was taken and the abdomen was closed without drainage. Culture revealed coagulase-positive *Staphylococcus* sensitive to chloramphenicol, tetracycline, erythromycin, gentamicin and methicillin.

Histological examination showed non-specific organizing inflammation of the abscess and non-specific reactive lymph adenitis with sinus histiocytosis.

Postoperatively, the patient was given chloramphenicol and erythromycin for 2 weeks, but was readmitted 2 months later with small bowel obstruction. Exploration revealed one litre of blood-stained fluid in the peritoneal cavity and a tight band, causing volvulus and gangrene of 4 feet of ileum. Resection of the gangrenous ileum, appendix and caecum *en masse* and end-to-end ileo-ascending colon anastomosis was done. The previous mass of suppurative lymph nodes in the mesentery had almost disappeared. Postoperative course was uneventful and the patient remains well 3 years later.

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Case 2

A 22-year-old male was admitted with a 7 day history of abdominal pain, low grade fever, loss of appetite and awareness of a lump in the abdomen. On examination, he was ill-looking and febrile. Abdominal examination revealed a firm, mildly tender, mobile left para-umbilical mass 10×6 cm. Another firm mass, 4×3 cm, was felt in the left lumbar region. There was no hepato-splenomegaly.

Investigations showed haemoglobin was 10.2 g/dl and white blood cell count 15×10^9 /litre with 82% neutrophils. Chest X-ray, intravenous pyelography and barium enema studies were unremarkable.

One week after admission, the patient developed high grade fever, the abdominal pain increased in intensity and he had vomiting. He became toxic and the para-umbilical mass became prominent and tender. The white blood cell count was 24.6×10^9 /litre with 83% neutrophils. Emergency exploration was carried out by a mid-line vertical supra-umbilical abdominal incision. There was a lymph node mass, 12×8 cm, in the root of mesentery lying over the major vessels with softening at one place, containing 30–40 ml of creamy pus, which was drained. Biopsy was taken from the wall of the abscess cavity and it was closed with interrupted catgut. A further biopsy was taken from another lymph node mass at the root of the mesentery almost continuous with the main mass and the abdomen was closed without any drain. Pus culture revealed a full sensitive coagulase positive *Staphylococcus*. Histology revealed non-specific inflammation.

The patient was treated with penicillin and gentamicin, and later erythromycin. He had an uneventful postoperative recovery and 2 months later was symptom-free. The abdominal masses were no longer palpable.

Discussion

Mesenteric lymphadenitis is a well established clinical entity (McDonald, 1965). It has been classified into acute, chronic, acute fulminating and suppurative varieties (Rosenberg, 1937). Although acute mesenteric adenitis is a relatively common occurrence, the fact that in rare instances the lymph nodes can suppurate and form abscesses is not well known (Asch *et al.*, 1968; Herrington, 1962; Domingo *et al.* 1975).

Even though the first reported case was an adult (Mitchell, 1913), the majority of subsequently reported patients have been children (Asch *et al.*, 1968). Clinical presentation mimics acute appendicitis with or without perforation. Operative findings generally reveal intense inflammatory reaction in the ileo-caecal area with omental adhesions and periappendicitis which can be confused with acute appendicitis,

tuberculosis, lymphoma or regional enteritis. However, the finding of necrotic lymph nodes containing pus distinguishes the condition.

Recommended management has been drainage, culture and subsequently suitable antibiotics. Appendectomy has also been advocated, but the rationale is not clear (Asch *et al.* 1968; Herrington, 1962; Domingo *et al.*, 1975). Prognosis is good with proper drainage and antibiotics.

In mesenteric adenitis, organisms isolated in culture include *E. coli*, *Bacteroides*, *Clostridia* sp., *Enterococci*, beta-haemolytic *Streptococcus*, *Staphylococcus aureus* and *Yersinia* (Collins, 1936; Dudley and Maclaren, 1956; Asch *et al.*, 1968; Domingo *et al.*, 1975). Suppuration, however, has been uncommon and whenever reported, has been mostly caused by beta-haemolytic *Streptococcus* (Asch *et al.*, 1968). *S. aureus* has been cultured on a few occasions (McDonald, 1965; Poslethwatt, Self and Batchelar, 1942; Mckechnie and Priestley, 1937), but in only one case was it responsible for suppuration and then in association with beta-haemolytic *Streptococcus* (Asch *et al.* 1968). The route of entry of bacteria into the mesenteric nodes can be either via lymphatics or blood stream (Collins, 1976; Maule and Sachotello, 1974) but the pathogenesis, however, is not understood.

Our patients were both young adults who presented with a tender left-sided abdominal mass, which neither clinically nor on investigation could be definitely diagnosed as *S. aureus* was isolated in both from the large amount of pus that was drained. There was no clinical evidence of a depressed immune response and the outcome of drainage and antibiotics was excellent. The unusual features in our patients were therefore the age, the suppuration of mesenteric lymph nodes near the duodeno-jejunal flexure without the involvement of the ileo-caecal area, the finding of a large amount of pus and isolation of the *S. aureus* alone on culture.

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