ENTEROLITHS PROXIMAL TO TUBERCULOUS ILEAL STRICTURES

(A Report of 3 Cases)

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ABSTRACT

Enteroliths proximal to tuberculous ileal strictures are an uncommon cause of recurrent or subacute intestinal obstruction and the radiopaque shadows cast by them give rise to a diagnostic dilemma. Three such cases are reported and the etio-pathology and diagnosis of intestinal calculi discussed.

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KEY WORDS : Enteroliths; Ileal strictures.

Introduction

Enteroliths or stercoroliths are described in literature as being rarely found proximal to tubercular strictures of the small intestine [1,2]. However, they are not so uncommon and in one series of 400 cases of tubercular strictures, 3.2% showed enterolithiasis [3]. These intestinal calculi give rise to repeated episodes of intestinal obstruction [4] and their appearance on radiography poses a diagnostic problem. Three such cases seen at Command Hospital (WC), Chandimandir are reported and the etio-pathology and diagnosis of enterolithiasis is discussed.

CASE REPORTS

Case No. 1

A 64 year old woman presented to a peripheral hospital complaining of repeated attacks of peri-umbilical colicky pain for the last 20 years which had become frequent in the past one month. Pain was associated with nausea and constipation, and followed by diarrhoea. She also had post prandial fullness of abdomen, anorexia, and had lost 17 kilograms of weight in the past six months. She was pale, had pedal edema but there was no lymphadenopathy. The abdomen was mildly distended, soft, with no organomegaly or ascites. Her hemoglobin was 7 gm/dl, she had relative lymphocytosis and her erythrocytic sedimentation rate was 28 mm fall in first hour. Her biochemical parameters were normal. Abdominal radiograph revealed four rounded radiopaque shadows of varying density, 2 to 4 cm in diameter lying in the pelvis. Chest radiograph was normal, ultrasound scan

(USS) of the pelvis excluded calcified fibroids of the uterus, intravenous urography excluded vesical calculi and barium enema examination excluded the diagnosis of fecoliths in the colon.

She was examined at this hospital during an attack of abdominal pain and had all the clinical features of intestinal obstruction, which was confirmed, by the distended loops of ileum seen in the abdominal radiogram (Fig. 1), to be in the terminal ileum. The episode responded to conservative treatment. The radiopaque shadows were considered to be either enteroliths proximal to an ileal stricture or calcified mesenteric lymphnodes following tuberculous infection, or gall stones. USS did not reveal any abnormality of the gall bladder. She was put on anti-tubercular chemotherapy and was taken up for laparotomy.

Laparotomy revealed a 3 cm long stricture of the terminal ileum, with gross dilatation and hypertrophy of the proximal small intestine which contained 4 light-weight, yellow coloured, smooth surfaced, brittle calculi. Resection of the stricture along with the proximal dilated small intestine containing the calculi was performed. Histopathology confirmed the stricture to be of tuberculous etiology. Biochemical analysis of the calculi showed them to contain calcium, magnesium, phosphorus and traces of sulphur.

Case No. 2

A woman aged 35 years, presented with similar clinical and radiological findings (Fig. 2), except that her chest radiograph revealed a non-homogeneous opacity in the apex of the left lung suggestive of pulmonary tuberculosis. Laparotomy revealed multiple ileal strictures with rough surfaced black hard calculi lying proximal to them. Multiple stricturoplasties and resection of a 30 cm segment of ileum containing multiple strictures was performed. Histopathology confirmed tuberculous enteritis.

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Fig. 1 Abdominal radiograph showing distended loops of ileum.

Fig. 2 Barium meal and follow through showing solitary round radio-opaque shadow.

Case No. 3

The third patient, a 47 years old soldier, had been operated for tuberculosis of the abdomen with mesenteric lymphadenitis in 1980 and had completed 18 months of anti-tubercular chemotherapy in 1982. He also presented with symptoms of repeated attacks of intestinal colic, anaemia, anorexia and loss of weight. Abdominal radiograph had revealed a solitary rounded radio-opaque shadow (Fig. 3), which moved with change of posture. He had been investigated in detail in the past, including a scan with a metal detector to look for the cause of the shadow. Barium meal and follow through examination confirmed a stricture of the jejunum with an enterolith lying proximal to it (Fig. 4). The patient was not willing for surgery and is under observation.

Discussion

Intestinal calculi are formed in the stagnant alkaline contents of the intestine by the deposition of salts around a nidus, which may be a fruit seed, or even a nonabsorbable suture [5]. Relative stasis leads to the formation of enteroliths in duodenal [6], jejunal [4], or Meckel's diverticula [7]. However they are

more commonly found in chronically obstructed bowel, proximal to a stricture or in a megacolon; the terminal ileum and pelvic colon being the commonest sites [6]. They have also been reported proximal to a congenital mucosal diaphragm [8].

Bacterial overgrowth may be a further factor causing bile salts to deconjugate, thereby reducing their solubility [4]. The prolonged administration of calcium, magnesium and bismuth also predisposes to the formation of enteroliths and they usually contain the carbonate and phosphate salts of calcium [6]. The composition of enteroliths depends on the site of formation [9]. The relative acidity of the jejunum encourages precipitation of bile salts, thus when the stricture is high in the small bowel, the calculi are usually composed of choleic acid and nonopaque. The higher pH more distally favours precipitation

Fig. 3 Abdominal radiograph showing solitary rounded radio-opaque shadow.

Fig. 4 Barium meal and follow through showing a jejunal stricture with a fecolith lying proximally.

of calcium salts, and these calculi tend to have radio-opaque laminated calcifications [7].

They vary from multiple small stones to a single large laminated calculus and are smooth, round or barrel shaped and often faceted [7]. If there is a facet, it is essential to palpate the intestine above for a possible fellow calculus. They are usually yellow-brown in colour, but rough surfaced calculi cause mucosal hemorrhage [3] and the iron salts deposited on the surface turn them black.

These calculi usually present with recurrent episodes of acute-on-chronic intestinal obstruction, hemorrhage or perforation [3,4]. The stasis proximal to a tuberculous ileal stricture also gives rise to a blind loop effect and is common cause of malabsorption syndrome, manifesting with loss of weight, anaemia, avitaminosis and steatorrhoea, as was

seen in all three of our cases.

Rounded radio-opaque shadows on abdominal radiograph which move on change of posture may either be ingested foreign bodies, gall stones which are ulcerated through the duodenal wall [6], enteroliths, calcified mesenteric lymph nodes or calcified fat deposits in the omentum. The concentric calcification seen in enteroliths helps to differentiate them from the irregular stippled appearance of calcified lymph nodes or omental fat deposits [7], and a USS will rule out any abnormality of the gall bladder.

Thus, a patient presenting with features of recurrent or subacute intestinal obstruction and malabsorption syndrome, who on abdominal radiography has rounded radioopaque shadows which move with change of posture, should be considered to have enteroliths lying proximal to strictures of the

ileum or in a megacolon, and investigated further on those lines.

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