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Case report

Pneumatosis intestinalis after fistuloclysis

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ABSTRACT

We present an unique case report of pneumatosis intestinalis after fistuloclysis.

Introduction

In selected patients with enterocutaneous fistulae, distal limb feeding (fistuloclysis) has been found to be an effective means of nutritional supplementation, in some circumstances avoiding the need for total parenteral nutrition [1]. We present a unique case of pneumatosis intestinalis after fistuloclysis.

Case history

An otherwise fit and healthy 77-y-old man presented acutely with epigastric pain, collapse, and multiple organ failure. A computed tomography (CT) scan suggested this to be due to ischaemic bowel.

At laparotomy, the ischaemic small bowel segment was resected and the bowel stapled off 25 cm from the duodenojejunal flexure. Two hundred centimeters of healthy small bowel remained distally to the furthermost point of division. A double-barreled jejunostomy was fashioned at relook surgery the following day. His postoperative recovery was complicated by a prolonged intensive therapy unit stay and intra-abdominal collections requiring percutaneous drainage.

In addition to his ongoing total parenteral nutrition, fistuloclysis was commenced 40 days postoperatively. The fistuloclysis was provided by a pump (Abbott FreeGo Enteral Feeding Pump) that operates against a 103 to 124 kPa nominal back pressure before its occlusion alarm is activated. This was directly supervised throughout his inpatient hospital stay by a qualified team of stoma nurses.

Three months after starting distal limb feeding he became unwell with abdominal pain and rectal bleeding. A repeat CT scan revealed pneumatosis in smoothly thick-walled jejunum just beyond the tip of the feeding tube, along with slight engorgement/edematous combing of the adjacent mesentery (Figs. 1 and 2). In addition, pneumatosis was seen within the remaining small bowel, right colon, liver, and the rectum (Figs. 3 and 4).

At subsequent laparotomy, the small and large bowel were found to be edematous, with no evidence of ischemia. However, removal of the fistuloclysis catheter postoperatively resulted in a rapid full recovery. Restoration of gut continuity was performed more than 3 months later, and he is now nutritionally independent.

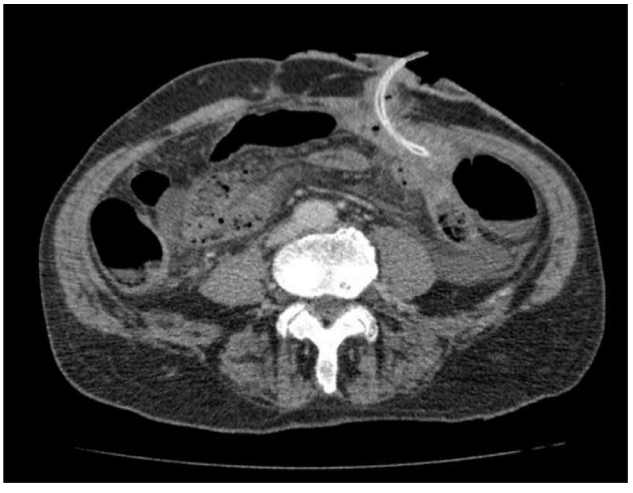

Fig. 1. Axial portal venous phase computed tomography screenshot showing the feeding tube within the distal limb of the jejunostomy. Pneumatosis seen in both the right colon and in the small bowel loops.

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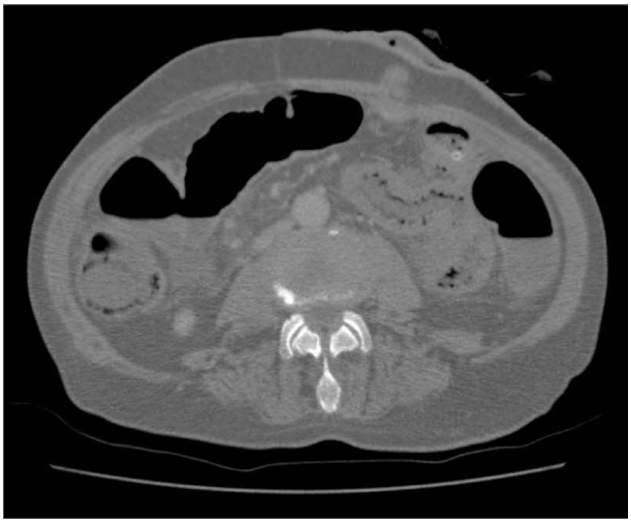

Fig. 2. Axial computed tomography lung window screenshot demonstrating pneumatosis in the right colon and the left upper quadrant jejunum just beyond the feeding tube, which can be seen anteriorly.

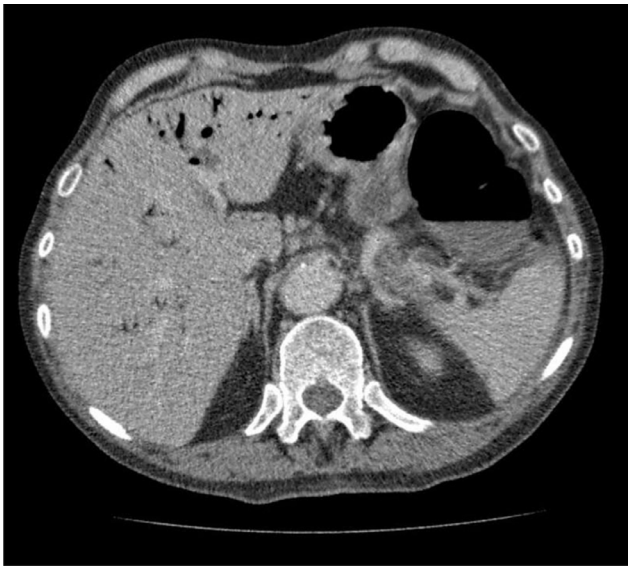

Fig. 3. Axial computed tomography screenshot with pneumatosis seen in the periphery of the left lobe of the liver.

Discussion

Pneumatosis intestinalis (PI), the presence of gas within the bowel wall, can be a potentially life-threatening condition when associated with bowel ischaemia, enterocolitis, or trauma. Other, more benign causes include respiratory disease, connective tissue disease, inflammatory bowel disease, and intra-abdominal infection.[2] There are several reported cases of PI after insertion of feeding jejunostomies [2–4] (which alerted us to the possible causality); however, to our knowledge, this is the first reported case secondary to fistuloclysis.

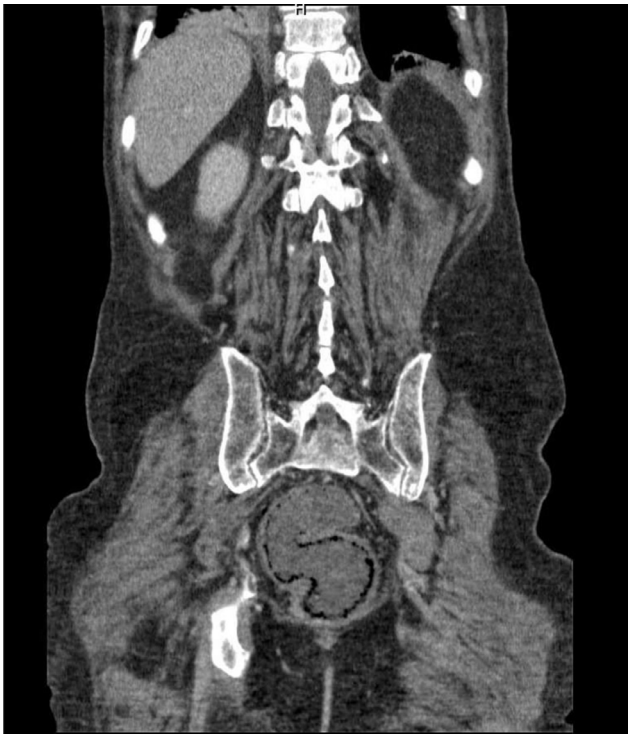

Fig. 4. Coronal reformatted computed tomography screenshot showing pneumatosis in the rectum.

Although the exact pathophysiology of PI is not fully understood, three main theories have been proposed [2]. First, mechanical disruption of the bowel mucosa with increased intraluminal pressure may allow gas to penetrate the bowel wall. Second, PI may result from the ingress or translocation of gas-producing bacteria. Finally, it is feasible that air may track to the bowel mesentery via the retroperitoneum from a pulmonary source.

This unique case of pneumatosis intestinalis secondary to fistuloclysis highlights that consideration of this cause as part of the differential diagnosis for PI may avert the need for an explorative laparotomy.

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