role of hypoaminoacidaemia leading to epidermal protein and micronutrient depletion, and necrosis.[10] Other postulated mechanisms involve fatty acid and zinc deficiencies, abnormal arachidonic acid distribution and diminished tryptophan levels.

With the benefit of hindsight, our patient's constellation of symptoms was typical of the paraneoplastic phenomena associated with glucagonoma syndrome, even in the absence of glucose intolerance. Unfortunately, plasma glucagon levels were not collected preoperatively to provide a biochemical correlation. Failure to recognize the associated paraneoplastic features of the glucagonoma syndrome is a common feature of other published case reports of glucagonoma. This is likely to contribute to the high rate of metastatic disease at diagnosis, and must be overcome in order to improve outcomes of this fascinating disease.

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Unique case of a laparoscopic hand-assisted repair of an intramesosigmoid hernia causing bowel obstruction in a virgin abdomen

Internal hernias involving the sigmoid mesentery are very rare. Intramesosigmoid hernias (IMSH) are the rarest of the three described. In 1964, Benson and Killen were the first to report this variety with barely more than 50 cases since described.[1] They carry an associated bowel resection of 80% due to rapid progression of necrosis.[2] This is the first report which details a laparoscopic hand-assisted repair of an IMSH.

An otherwise healthy 67-year-old male, presented with an 8-h history of generalized abdominal pain and obstipation. This was his first episode with no previous abdominal surgery. On examination, he was haemodynamically stable and afebrile. The abdomen was distended with tenderness over the suprapubic region. There were no features of peritonism, and bowel sounds were audible. Blood tests were unremarkable. A computed tomography (CT) scan revealed distended, faecally loaded small bowel loops suggestive of bowel obstruction with a transition zone identified in the left lower abdomen (Fig. 1). After resuscitation, he proceeded to laparoscopy.

A 10-mm supraumbilical port was inserted using Hasson technique, with an additional two 5-mm operating ports. Laparoscopy revealed a mechanical small bowel obstruction due to an IMSH. A loop of ileum had herniated superiorly through a small partial thickness defect within the lateral fold of the sigmoid mesentery. There was a bruised appearance to the strangulated bowel loop, which was visible through the lateral fold (Fig. 2).

It was clear that reduction and management of defect was not possible laparoscopically. Consequently, a hand port was inserted into the lower abdomen.

The sigmoid colon was densely adherent to the lateral wall. It was mobilized to aid traction and reduction of the IMSH, also serving to eliminate a potential hernia defect. The hernial defect was widened digitally to reduce the herniated loop, and prevent future

irreducibility. This was performed due to the unfavourable location for laparoscopic suturing.

The entire small bowel appeared viable and consequently no resection was required.

The recovery was uncomplicated and the patient was discharged home within 3 days.

Benson and Killen classically described three types of mesosigmoid hernias.[1]

The intersigmoidal types are the most common and involve herniation through the lateral aspect or to the left of the sigmoid mesentery into the intersigmoidal fossa. This occurs in the retroperitoneum where herniated bowel loops protrude into the congenital fossa (formed during fusion of lateral surface of the sigmoid mesocolon with the parental peritoneum of the abdominal wall).[1,2]

The transmesosigmoidal type describes herniation of bowel through an isolated oval defect in the mesosigmoid with involvement of both mesenteric leaves. Therefore, this type lacks a hernial sac.[1–3]

The third and rarest type of mesosigmoid hernias is IMSH. Bowel can herniated through either the lateral or medial aspect of the mesosigmoid, adjacent to the sigmoid colon. It involves only one leaf of the mesentery (Fig. 3).[1,2]

The precise aetiology of IMSH is unknown and several hypotheses have been postulated. The most accepted theories primarily involve blunt abdominal trauma or inflammatory processes.[4] However, Menegaux suggested the defect may arise during developmental enlargement of a hypovascularized area.[4] Federschimdt stated that the defect may represent a partial regression of the dorsal mesentery during development.[4]

This patient reported no such history of abdominal blunt trauma or pathology to explain a mesosigmoid defect, which remains a possible trigger regardless.

IMSH usually remains quiescent and mechanical intestinal obstruction is often its presenting feature. Conventional medical imaging may identify obstruction. However, the accuracy in diagnosing site and presence of strangulation is low. CT has a sensitivity and specificity of 63% and 73%, respectively, in diagnosing internal herniae.[1] Detection is significantly poorer for mesosigmoid herniae and virtually impossible to establish subtype.[3]

Though a rare presentation, principles of laparoscopic management of internal herniae were applied. Management of hernial orifices are dependant on anatomical location, surgical technique and viability of contents. This case highlighted the role of laparoscopic hand-assisted herniorrhaphy. The value of this technique is further enhanced in cases of bowel resection. The alternative would be to convert to laparotomy which would likely have poorer recovery outcomes.

Clinical diagnosis of an IMSH is challenging but failure to do so may have disastrous outcomes. Vigilance for internal herniae

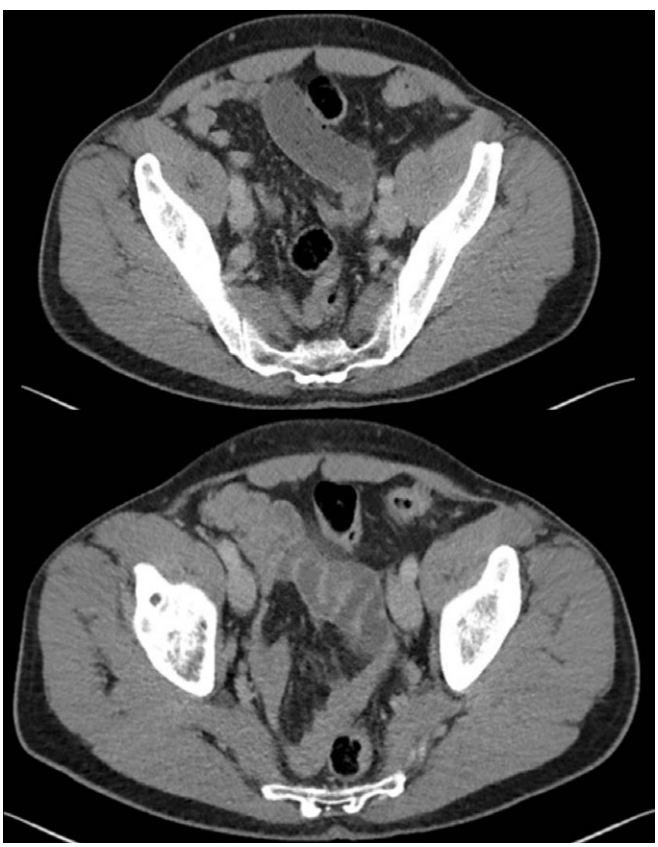

Fig. 1. Axial views of the patient's computed tomography abdomen.

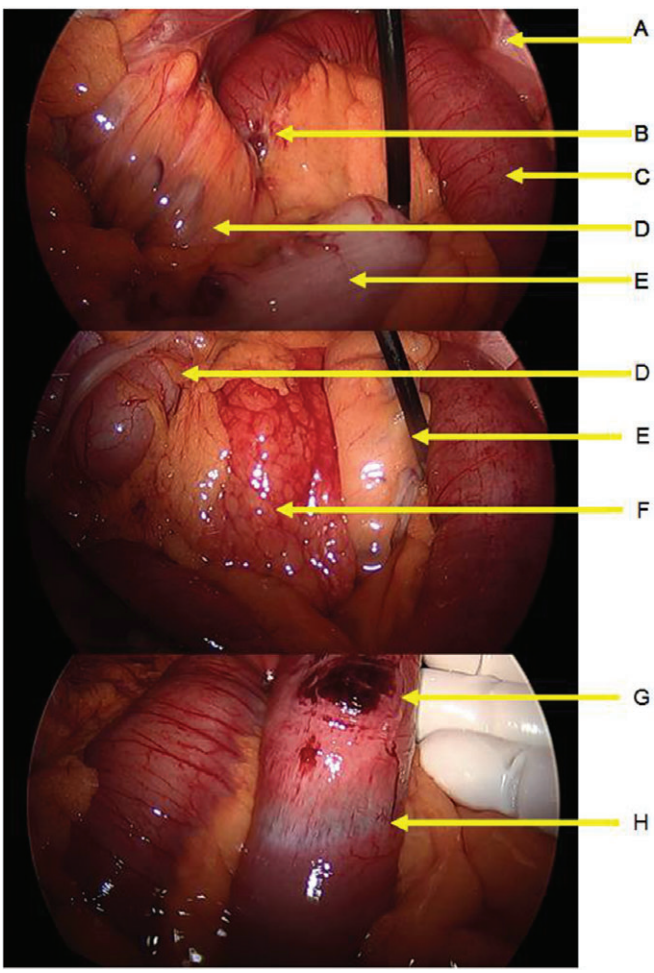

Fig. 2. Identification and laparoscopic reduction of intramesosigmoid hernia in sequence (A–H). (A) Pubic symphysis, (B) obstruction point, (C) obstructed mid small bowel, (D) proximal sigmoid, (E) distal sigmoid, (F) medial leaf of sigmoid mesentery, (G) superficial bruise, (H) ischaemic band.

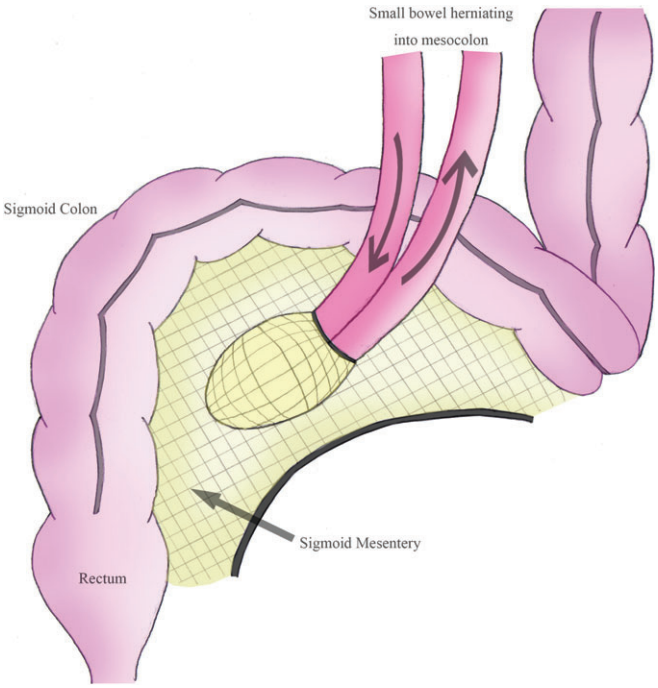

Fig. 3. Graphic illustration of an intramesosigmoid hernia; depicting loop of small bowel prolapsing (curved arrow) through mesenteric defect (straight arrow).

should be maintained for patients with features of intestinal obstruction, particularly without an alternative cause. Better outcomes are associated with early operative intervention. This case underlines the feasibility and safety of a hand-assisted approach even in a rare presentation such as this.

Informed consent was obtained from the patient for publication of this case report and accompanying images. Approval was also granted from the ethics committee.

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Rare finding of a giant ischioanal lipoma

A 54-year-old lady presented to the colorectal clinic with a 12-month history of an increasing lump in her buttock, with symptoms alternating between faecal urgency and obstructed defaecation during this period.

She had no history of per rectal blood loss or weight loss. Her past history included an appendicectomy, previous bladder sling operation and two vaginal deliveries. Her last colonoscopy was 2 years ago and was reported to be normal. She was otherwise in good health. There was no family history of colorectal cancer.

On examination, there was a palpable, soft swelling in the left ischiorectal area, which was palpable externally and on digital rectal examination (DRE). There was no abnormality of the rectal mucosa.

She was investigated with anal manometry and pudendal nerve latency testing, computed tomography (CT) and magnetic resonance imaging (MRI) of her pelvis. Manometry confirmed normal anal tone, with evidence of left pudendal nerve neuropathy. The pudendal nerve latency was 2.0 ms on the right side and 3.2 ms on the left (normal <2.6 ms). Pre-operative anal resting pressure (mean 50 mmHg, maximum 75 mmHg) and squeeze pressure (97 mmHg, maximum 111 mmHg) were both normal.

Colonoscopy did not reveal any mucosal lesions. CT scan and MRI revealed a 12 × 6 × 5 cm well circumscribed, encapsulated, fat containing soft tissue density in the left ischiorectal space, elevating the left levator muscle. It had mass effect, displacing puborectalis and the anal canal to the right. There was no imaging evidence of rectal obstruction. Its overall appearances were suggestive of a lipoma (Fig. 1).

Given her symptoms and increasing size of the mass, she underwent operative excision of this lesion. Operative technique involved making a hemi-circumferential incision in the ischioanal space with the patient in the prone position. The external anal sphincter (EAS) was identified and dissection remained lateral to it. The EAS was followed up to the levator muscle. The lesion shelled out with a combination of blunt and sharp dissection. It had gross appearances in keeping with a lipoma. The pudendal bundle was identified and preserved. The lesion was completely removed and the wound was closed primarily over a drain tube (Figs 2,3). The patient made an uneventful recovery. She did not have any perianal numbness, bladder or bowel dysfunction post-operatively. As she did not report any symptoms post operatively, no formal post-operative anal manometry and nerve latency testing were undertaken.

Histology confirmed the lesion to be a large lipoma.

The ischioanal fossa is a pyramidal space bordered by the anal canal medially, obturator internus with its overlying fascia