

## CASE NOTE

# Carcinoma of the sigmoid colon in an incarcerated inguinal hernia

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Inguinal hernias may contain small or large bowel. About 10% of inguinal hernias become incarcerated, causing strangulation, bowel obstruction or infarction.<sup>1</sup> Malignant lesions in groin hernias are rare; most intrasacculal neoplasms are colonic, and the most common reported site is the sigmoid colon, usually in a left inguinal hernia.<sup>2</sup> We report a case of an incarcerated inguinal hernia containing a perforated carcinoma of the sigmoid colon.

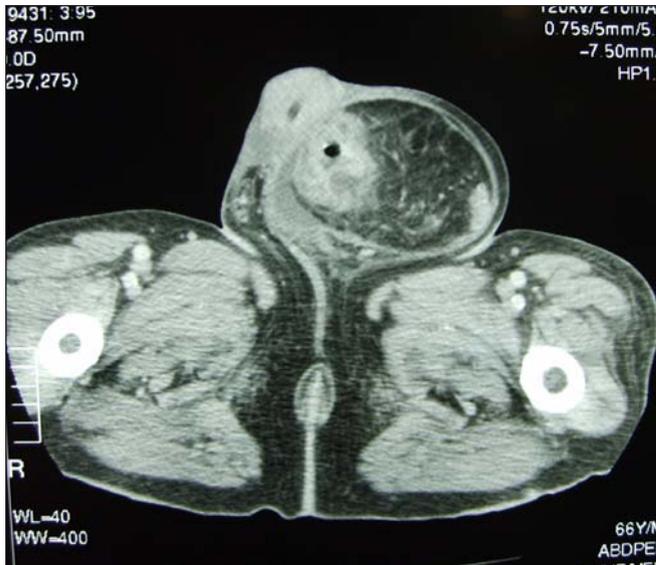
**CASE REPORT**

A 67-year-old man, with no relevant medical history, was admitted to the emergency department with a 7-day history of rectal bleeding, weakness and weight loss of 10 kg over 2 months. Physical examination revealed only a large, painful irreducible mass in the left groin. The patient had a left inguinal hernia for long time, but in the months before presentation it had enlarged and had become irreducible. Blood testing revealed a leukocyte count of  $14.0 \times 10^9/L$  and a hemoglobin value of 66 g/L. Colonoscopy revealed a stenotic tumour in the sigmoid colon, and a computed tomography (CT) scan showed a left inguinoscrotal hernia containing large bowel, with asymmetric wall thickening and luminal alterations, suggesting a neoplasm within the inguinal hernia (Fig. 1). The patient underwent elective surgery through a left standard inguinal incision and a formal median laparotomy. We found that the hernia contained sigmoid colon and could be reduced into the abdominal cavity (Fig. 2). The reduced sigmoid colon demonstrated a neoplastic tumour with a perforation site, but there were no feces inside the hernial sac or in the abdominal cavity. We performed a sigmoidectomy with primary manual laterolateral anastomosis and repaired the inguinal hernia according to the Lichtenstein technique. The patient recovered without complication and left the hospital on postoperative day 7. Pathological examination of the tumour revealed a well-differentiated adenocarcinoma with perforation of the serosa and local peritonitis with abscesses. Five involved lymph nodes were discovered (Dukes class C).

**DISCUSSION**

Malignant masses in inguinal hernias appear in less than 0.5% of excised sacs. The tumours can be classified as sacculal when they are primary (mesothelioma) or when metastatic disease involves the peritoneal sac itself, or as intrasacculal when the sac contains an organ with a primary malignant mass, as occurred in our case.<sup>2</sup>

Primary colonic malignant disease within inguinal hernial sacs has been reported only rarely. The first case was reported by Gerhardt and colleagues in 1938. A Medline search on inguinal hernias containing a primary colon carcinoma revealed 28 cases.<sup>3-5</sup> The sigmoid colon was involved in most cases, but



**Fig. 1.** Computed tomography scan showing the left inguino-scrotal hernia containing large bowel with asymmetric wall thickening and luminal alterations, suggesting a neoplasm within the inguinal hernia.

involvement of the cecum and ascending colon has also been described.<sup>2</sup> Kouraklis and colleagues<sup>1</sup> were the first to report a perforated carcinoma within an incarcerated inguinal hernia, followed by Boormans and colleagues,<sup>4</sup> and ours is the third published case. In the case reported by Kouraklis and colleagues,<sup>1</sup> there was a rupture of the colon into the inguinal hernia, limiting the infection to the inguinal region, without involvement of the peritoneal cavity. In the second case, there was fecal contamination in both the inguinal region and the peritoneal cavity. In our patient's case, there was no fecal contamination in either the inguinal region or the abdominal cavity; this probably means that the tumour perforated shortly before surgery, when oral uptake was stopped as a preventive measure for eventual emergency surgery for uncontrolled rectal bleeding. It is hypothesized that the neck of an inguinal hernial sac may act as a constrictor to prevent the peritoneal cavity from contamination. Rupture of a hollow organ into an inguinal hernia will therefore result in a limited infection associated with a better outcome, although any delay in treatment may lead to a rapidly progressive necrotizing fasciitis involving the genitalia. In any event, fecal peritonitis implies a worse outcome.<sup>1,2</sup>

It is unclear whether the best surgical approach is via an abdominal or inguinal incision, or both; this will depend on the patient's anatomy, the surgical findings and the surgeon's experience.<sup>1</sup> In the majority of reported cases, colonic resection at laparotomy is followed by conventional inguinal hernia repair through separate incisions.



**Fig. 2.** Surgical view showing the incisions (the left standard inguinal incision and the formal medium laparotomy). The left inguinal hernia contains the tumour.

Some authors defend a transverse left iliac fossa incision as the best approach, because it allows a good access to the left colon and inguinal region through a single incision, but the surgeon must be familiar with this approach.<sup>2</sup> In our patient's case, we made formal laparotomy and inguinal incisions when we saw that the incarcerated tumour could not be reached by either incision alone.

## CONCLUSIONS

Incarcerated inguinal hernias containing an adenocarcinoma of the colon are rare, but should be considered in patients presenting with an irreducible mass in the inguinal region. The association of colonic symptoms with irreducibility of a previously reducible hernia may provide a clue to neoplastic change within the sac.

**Competing interests:** None declared.

## References

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