Case Report

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An unusual foreign body in an inguinal hernia sac: Case report and literature review

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ABSTRACT

A 13-month-old boy accidentally ingested a 5 cm dressmaker's pin. On presentation, the pin was in the duodenum and there was a right inguinal hernia. After 17 days, the pin failed to progress. At surgery, the sac contained appendix perforated by the pin. This is the first case in the literature.

Key words: Amyand's hernia, dressmaker's pin, inguinal hernia repair

INTRODUCTION

Small children can swallow an array of bizarre items, most of which pass through the alimentary canal without incident, although complications can occur if there is penetration or impaction.

The chance of finding the appendix within an inguinal hernia sac, or Amyand's hernia, is reported to be approximately 1% of all inguinal hernias.[1] However, Amyand's hernia is extremely rare in infants and neonates and its actual incidence cannot be estimated because there are less than 20 cases reported in the literature.[2] To the best of our knowledge, a case of congenital inguinal hernia with a foreign body in the appendix within the inguinal sac has never been reported.

CASE REPORT

A 13-month-old Japanese boy was admitted following accidental ingestion of a 5 cm dressmaker's pin. On physical examination at presentation, an easily reducible right inguinal hernia was noted. Plain abdominal radiography performed at presentation showed the pin to be in the duodenum. Because there were no specific symptoms, the boy was hospitalised for observation, follow-up abdominal radiography and conservative management. The pin progressed through the bowel, and on day 17 after ingestion, simple abdominal radiography showed it to be in the inguinal sac [Figure 1]. As the position of the pin did not change for 3 days more, inguinal hernia repair without extraction of the pin was planned with the expectation that the pin would be passed naturally once the contents of the sac were returned to the bowel. No trial of manual reduction of the hernia was attempted for fear of perforating the sac. At laparotomy, inguinal exploration with meticulous dissection revealed there was a slightly inflamed appendix within the sac of the inguinal hernia with some fibrous omentum attached to a 5 cm long dressmaker's pin that had perforated the appendix. Since the appendix was adhered to the inner surface of the sac, the initial incision was converted to a Pfannenstiel incision to allow better exposure of the base of the appendix at the caecum and to inspect the entire inguinal region [Figure 2]. Further adhesiolysis was performed and the contents of the inguinal hernia were released from the inguinal canal. Appendectomy with excision of the pin and primary hernia repair were performed together; the postoperative course was uneventful.



Figure 1: Plain abdominal film. The pin can be seen outside the intra-abdominal cavity

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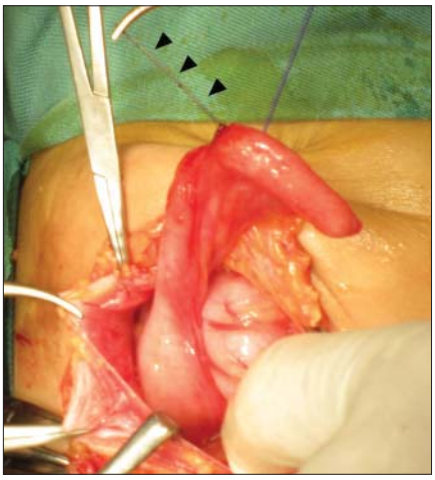


Figure 2: Pfannenstiel exploration (intraoperative photo). The initial inguinal incision has been converted to a pfannenstiel incision to allow better exposure of the base of the appendix at the caecum, and to inspect the entire inguinal region. Arrowheads: dressmaker's pin

Written informed consent was obtained from the parents of the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-chief of this journal. The authors declare that they have no competing interest. All authors read and approved the final manuscript.

DISCUSSION

There are only two cases of foreign bodies lodging in an inguinal hernia sac in children reported in the English literature. In one case, a 7-month-old boy presented with an acute inguinal swelling that was an inguinal hernia containing sigmoid colon that had perforated because of a safety pin; the safety pin was found in the sac. The pin was removed with a small wedge of sigmoid colon. Recovery was uneventful.[3] In the other case, a 2-year-old boy was admitted for an acute scrotal condition. At surgery, incomplete torsion of the spermatic cord with good perfusion of the testis was found. The inguinal canal was explored because the processus vaginalis was patent and in the middle part, a fibrous mass, 2.5 cm in diameter containing vas and vessels, some fibrous omentum and two fish bones was found.[4] The mass was excised and postoperatively, abdominal ultrasonography (US) excluded the presence of retained fish bones in the abdomen. Recovery was uneventful.

Some 80 to 90% of ingested foreign bodies pass through the alimentary tract uneventfully, while 10 to 20% require endoscopic removal, and 1% or less ultimately require surgical intervention.[5] Intestinal foreign bodies rarely cause complications, but there is a risk for bowel perforation that is increased when the foreign body lodges in certain blind structures such as Meckel's diverticulum or the appendix vermiformis.[6] Similarly, if a foreign body somehow enters an inguinal hernia sac, there is also a risk for perforation that may be increased by compression of the contents of the sac. In our case, because the incidental inguinal hernia was easily reducible with a wide internal inguinal ring, we assumed that the pin would progress uneventfully through the bowel, even when the pin was found to be in the sac.

Preoperative US has been reported to be useful for diagnosing uncommon and rare conditions such as Amyand's hernia.[7,8] If we had used US earlier in our case to diagnose Amyand's hernia containing the dressmaker's pin, we may have decided to operate earlier because of a high risk for possible perforation. The pin would then not have perforated through the appendix to cause dense adhesions and there would have been no need for further exploration through a pfannenstiel incision.

When there is foreign body ingestion in a child with a congenital inguinal hernia, surgical repair of inguinal hernia should be considered first. A swelling of the inguinoscrotal region which contains a foreign body should be considered as a case of Amyand's hernia with the foreign body lodged in the appendix inside the inguinal hernia sac.

When there is foreign body ingestion in a child with a congenital inguinal hernia, progress of the foreign body should be monitored closely to ensure there is progress through the bowel. Inguinal hernia repair should be considered early because of an increased risk for perforation if the foreign body lodges in the sac. Similarly, if an inguinoscrotal swelling containing a foreign body is encountered, Amyand's hernia with the foreign body lodged in the appendix inside the inguinal hernia sac should be considered.

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