

Case Report

Strangulated interstitial hernia with undescended testis – A rare surgical emergency: A case report

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Introduction

Interstitial hernias are a sub-type of intraparietal hernias where the hernia sac lies between the internal oblique and external oblique muscles. They are commoner in children, compared to adults, with a reported incidence between 0.08% and 1.6% [1]. Undescended testis is a genital malformation affecting 2 to 5% of full-term boys and up to 1/3rd of premature boys [2]. The diagnosis is made primarily by clinical examination and imaging. After an extensive survey on literature, we found only a few cases of interstitial hernia with undescended testis that presented with strangulation and bowel obstruction [3]. We present a case of a 7-year-old boy presenting with a left-sided painful groin lump and found to have an undescended testis with strangulated interstitial hernia and a gangrenous small bowel segment. This article has been reported in line with SCARE criteria [4]

Case presentation

A 7-year-old boy, without any significant past illness, presented with left iliac fossa pain and left groin lump of one day's duration (Figure 1). Pain was intermittent and colicky in nature. The child had a history of mild pain, on and off, in the left groin for the previous year which had worsened over the last 24 hours. He had nausea and several episodes of vomiting. His bowels had not opened for two days. He had not undergone surgery in the past. On examination, he was in severe pain and ill looking. His blood pressure was 105/70mmHg, saturation on air was 99% with a pulse rate of 90bpm. On abdominal examination, there was a tender firm lump in the left inguinal region. The patient did not allow further examination

of the abdomen due to pain. His scrotal examination revealed an absent testis on the left side. White cell count, CRP and serum electrolytes were within the normal range. Even though an ultra sound scan of the region suggested an abdominal wall haematoma, we opted for an emergency exploration of the inguinal region, having a clinical diagnosis of strangulated hernia.



Figure 1: Groin Lump

Initially, inguinal exploration was done with a transverse left groin incision. Intraoperatively, an undescended testis in the inguinal canal and a strangulated interstitial hernia, protruding between the external oblique and internal oblique muscle layers with a gangrenous small bowel segment were noted. As we found it difficult to deliver the gangrenous bowel segment through the inguinal incision, it was decided to approach with a lower midline incision. The small bowel was delivered through the lower midline incision and the gangrenous segment was resected and end to end anastomosis was done (Figure 2). The hernial sac was repaired and the deep inguinal ring was reinforced. The undescended testis was mobilized from the surrounding tissues and brought to the left hemiscrotum (Figure 3). He was started on intravenous antibiotics, postoperatively and a normal diet was started on post-op day 5. His post-operative recovery was uneventful and he was discharged from the ward on post-op day 10.

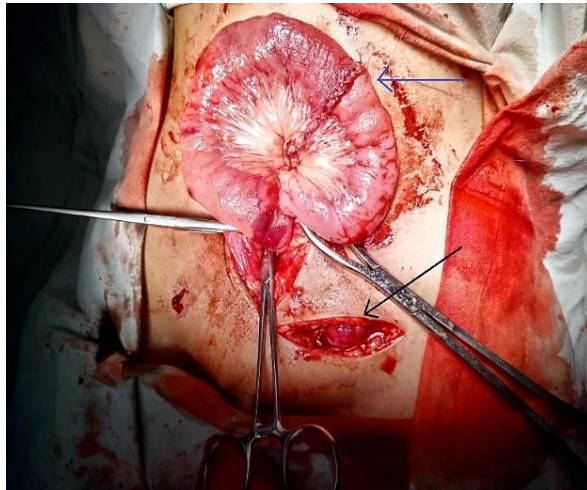


Figure 2: Small bowel resection

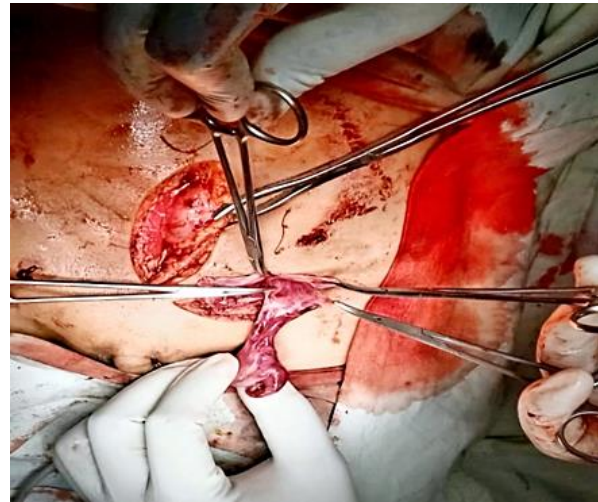


Figure 3: Orchidopexy

Discussion

Strangulated inguinal hernia causing intestinal obstruction is a common surgical emergency in the general surgical setup. Interstitial hernia is the commonest among the intra parietal hernias comprising 60% [5]. There are many theories that explain the reason why the hernial sac tends to protrude between the abdominal muscle layers. One theory states that the inguinal canal becomes narrowed at the superficial inguinal ring because of the coexisting undescended testis and makes it impossible for the hernia to descend through the inguinal canal [6]. Descent of testes occurs in two major phases. They are a transabdominal phase and an inguinoscrotal phase [7]. Enlargement of the gubernaculum and regression of the cranial ligament occurs at the first stage with insulin like hormone 3 being the primary regulator of this phase. This phase is assisted by Müllerian inhibiting substance and regression of the cranial suspensory ligament is induced by testosterone [8]. During the second phase, migration of the gubernaculum from the groin into the scrotum occurs guided by calcitonin gene-related peptide released by the genitofemoral nerve and androgens [8]. Alterations in these regulatory mechanisms will lead to aberrations in testicular descent, hydrocele, interparietal hernias and cryptorchidism [9].

Because of the difficulty in diagnosing interstitial hernias by clinical examination, it is important to assess the patients with imaging, especially in patients with undescended testis. When a patient presents with an obstructed inguinal hernia it should be explored through the inguinal region first and, if there is a difficulty, it is acceptable to go ahead with a lower midline incision [10].

Conclusions

Systematic clinical examination and imaging is crucial in the diagnosis of interstitial hernias associated with undescended testis. Because of the difficulties encountered in diagnosing this type of hernias, they usually present late, as a surgical emergency with strangulation or bowel obstruction. Surgery, at the earliest in such cases, will reduce postoperative complications and increase the probability of salvaging the ectopic / undescended testis, as in our case. Elective orchidectomy with hernioplasty should be considered in adults who have completed family life.

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