



LARGE INGUINOSCROTAL HERNIA IN AN INFANT PRESENTING IN OBSTRUCTION: A CASE REPORT AND REVIEW OF REASONS FOR DELAYED PRESENTATION

Friday Emeakpor Ogbetere

Lecturer, Department of Surgery, Edo University, Iyamho, Edo State, Nigeria.

Email: fridayemeakpor@gmail.com

ABSTRACT: *An inguinal hernia is a common pathology requiring surgical treatment in infants and children. However, an inguinoscrotal hernia is less common when compared to an inguinal hernia and much under-reported in the medical literature. The majority of inguinoscrotal hernias in infants present without complications as anxious parents usually bring them early for treatment. In rare cases, however, patients may be brought due to complications. In this case report, a one-year-old boy was brought to the accident and emergency room with a giant swelling involving the left groin and the left hemiscrotum. Clinical examination revealed an irreducible left inguinoscrotal swelling with features suggestive of intestinal obstruction. During surgery, a large closed-loop obstructed bowel was found and successfully reduced. This case report highlights a relatively rare mode of presentation of a common groin pathology and provided a unique opportunity to evaluate the reasons for delayed presentation of patients with inguinoscrotal hernias in the West African subregion.*

KEYWORDS: Inguinoscrotal Hernia, Infants, Intestinal Obstruction, Hernia Repair, Delayed Presentation.

INTRODUCTION

The term hernia is derived from a Latin word meaning rupture of a part of a structure. It is defined as a protrusion of the whole or part of a viscus through a normal or an abnormal opening in the wall of its containing cavity.¹ An inguinoscrotal hernia in infants occurs when an intestinal segment or portion of the omentum or genital organs passes into the scrotal cavity through a patent processus vaginalis.²

An inguinal hernia is one of the most common findings and the subsequent reasons for surgery in infants and children. The incidence of inguinal hernias is approximately 3% to 5% in term infants and about 13% in infants born at less than 33 weeks of gestational age.^{2,3} The diagnosis of a large or giant inguinoscrotal hernia however is less common.⁴ About 60% of inguinal hernias are found on the right, 25% on the left side, and 15% are found bilateral.² Inguinal hernia is predominant in boys over girls.^{2,3}

Inguinoscrotal hernias in infants are repaired shortly after diagnosis to avoid complications, such as hernia incarceration or strangulation.^{2,3} The rates of complications in patients with inguinoscrotal hernias have been observed to be proportionally related to the length of delay in the presentation.⁵



This case report highlights a relatively uncommon mode of presentation of a common ailment in the paediatric age group and examines the reasons for delayed presentation of patients with inguinoscrotal hernias in our environment.

Case Presentation

AJ was a one-year-old infant who was brought by the parents to our accident and emergency room with a huge swelling extending from his groin to his scrotum noticed since birth. The swelling was initially only limited to the groin but gradually progressed into the scrotum. He had no history of cough or constipation. It was initially reducible but became irreducible two days before the presentation. He was also noticed to have been crying incessantly for two days before the presentation. The parents also gave a history of progressive abdominal swelling, refusal to feed, vomiting of greenish substances, and constipation about 36 hours prior to presentation. Examination revealed a temperature of 37.8⁰C, a pulse rate of 100 beats per minute, and a respiratory rate of 28 cycles per minute. There was a huge non-tender, irreducible left groin swelling extending into the left hemiscrotum (**Figure 1**) with differential warmth. The left testis was palpable but laterally displaced within the scrotum. The left epididymis and the spermatic cord were palpable and non-tender. There was no groin lymph node enlargement. The right testis was normal in size and orientation and the penis was essentially normal. The bowel sound was hyperactive.

An urgent scrotal ultrasound scan revealed a dilated intestinal segment with reduced blood flow and some fluid collection within the sac. The full blood count and other investigations were within a normal range. Informed consent was obtained from the parents after adequate counseling. Following a quick pre-operative preparation, an emergency open surgery was performed using a left groin incision. After splitting the external oblique aponeurosis, the glistening and huge hernia sac was delivered into the wound (**Figure 2**). The roof of the sac was incised and a long small bowel loop with about 10mls of a brownish fluid was discovered (**Figure 3**). The loop of the bowel was tested for viability (**Figure 4**) after widening the neck of the ring and untwisting the bowel segment. Then, the intestine was gradually reduced back from the bottom of the scrotum back into the peritoneal cavity without compromise in respiration. The scrotal part of the hernia sac, together with the spermatic cord and the left testis was then gently delivered into the wound. Following this, the whole hernia sac was meticulously dissected from the spermatic cord. The separated hernia sac was then twisted at the level of the preperitoneal fat, closed off by a purse-string suture, and resected. The testis was returned into the scrotum and fixed. The widened inguinal ring was narrowed and wound closed in layers using absorbable sutures. He had a smooth postoperative recovery and was discharged three days later with a mild scrotal swelling (**Figure 5**). His follow up visits have been uneventful.

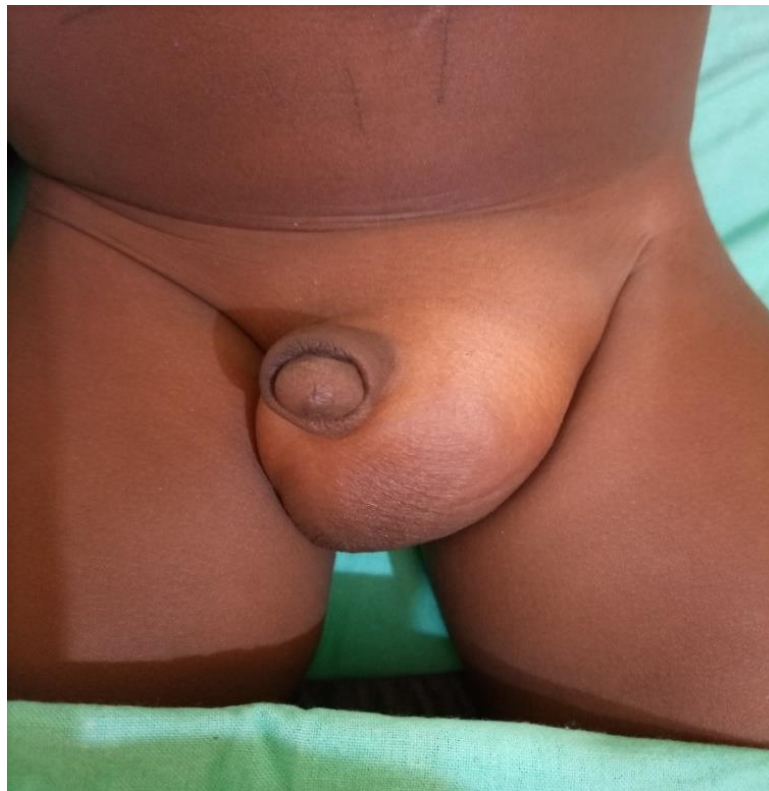


Figure 1: A large inguinoscrotal hernia with a near-buried penis in an infant.

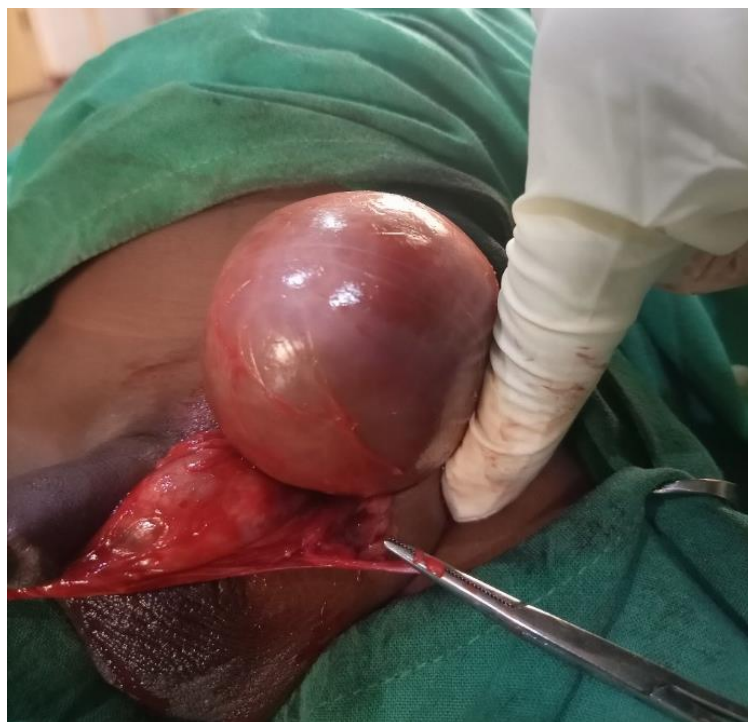


Figure 2: Inguinoscrotal hernia sac and content delivered into the wound intact.



Figure 3: A closed loop obstructed intestinal segment that was the content of the hernia.



Figure 4: Intestinal segment showing bright red bleeding on needle prick after untwisting.



Figure 5: Third day post-operative picture of the patient just before discharge.

DISCUSSION

Hernias are common, constituting about 12.5% of the surgical workload in the low- and middle-income countries with inguinal hernia contributing about 77-90% of all hernia cases.⁶ Large or giant inguinoscrotal hernias are, however, uncommon. It accounted for only 2.8% of all 285 cases of inguinal hernias reviewed by Akhator and Oside in Warri, Nigeria.⁷ The low incidence was attributed to better awareness and access to surgical services.

Generally, the modes of presentation of inguinoscrotal hernias range from simple bulging reducible mass to irreducible and strangulated mass with occasional peritonitis. In patients presenting with complications such as irreducibility, obstruction, and strangulation, urgent surgical exploration is required due to the high morbidity and mortality associated with delayed surgical intervention.^{2,3} The mortality rate of one percent in a series of 918 patients with inguinal and inguinoscrotal hernias reviewed by Garba in Zaria, Nigeria were all linked to complications like obstruction and strangulation.⁶ This index patient was brought after about 36 hours of hernia irreducibility with features of intestinal obstruction and possible strangulation. They had earlier presented to a health practitioner who advised the parents on conservative management citing age as a contraindication for surgical treatment.

This index patient had an emergency ultrasound done which showed an intestinal segment within the left hemi-scrotum with reduced blood flow. He had emergency groin exploration done following the ultrasound scan. With a good history, a thorough physical examination, and



cautious use of ultrasonography, all scrotal pathologic conditions like hernias and hydroceles, particularly in infants, can be differentiated. Ultrasound provides a very good anatomic details, cheap with no danger of irradiation, and can be done at the patient's bedside. However, in rural and remote practice centres where ultrasonography may not be available, groin exploration can be done on the strength of history and physical examination alone.

Repair of a giant or large inguinoscrotal hernia can be challenging and can result in some potentially fatal complications. The reduction of large inguinoscrotal hernias can result in a life-threatening cardiorespiratory failure as a result of a sudden increase in intra-abdominal pressure.⁷ This patient had a gradual reduction of the herniated intestinal segment over about five minutes without any cardiorespiratory sequelae.

The management outcomes of complicated large inguinoscrotal hernias at both extremes of age are usually associated with more postoperative complications compared to other age brackets.^{5,8} Delayed presentation particularly in the emergency situation makes the surgical management of inguinoscrotal hernia challenging in infants and children with associated high morbidity and mortality.^{5,9}

In the West African subregion, the presentation of patients with a large inguinoscrotal hernia is delayed for a number of reasons. Notable among these reasons, according to the work of Ogbuanya and Amah⁵ are financial challenges, treatment in the homes of herbalists, prayer houses, advice that hernia is harmless, and conservative management by non-surgical doctors. The parents of this index patient delayed in seeking appropriate medical attention for him because he was being managed conservatively by a non-medical health worker who assured them that hernias are generally harmless and the patient was too young to undergo surgery under general anaesthesia. This costly misinformation brings to the fore the need for all health workers' regulating bodies to develop a system of continuous education for their members with the aim of updating them on the current management of common pathologies. This will go a long way to strengthening the referral chain. Other reasons for delayed presentation in our environment include the long distance between homes and hospital with poor access roads, fear of surgery, and lack of strong confidence in the surgical management of inguinoscrotal hernias.^{5,9,10}

The majority of these factors responsible for delayed presentation of patients with inguinal hernias can be surmounted by public sensitization and enlightenment campaigns, construction of access road, the establishment of mobile clinics, and revitalization of health insurance schemes in the West African subregion.

CONCLUSION

The threat to loss of testis, ovary, or a segment of the bowel due to obstruction or strangulation is real. Early presentation and prompt surgical management of inguinal hernias should be encouraged by attending to all factors contributing to delay in presentation in order to avoid the high morbidity and mortality associated with these complications.



Declaration of patient Consent

The author declared that he has obtained all necessary consent. The patient's parents have also given consent for his clinical photographs and information to be published in the medical journal. They understand that his name and initials will not be published and necessary effort will be made to hide his identity, but anonymity cannot be guaranteed.

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