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Case report

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Inguinal herniation associated with hydrocele

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Abstract

An inguinal hernia is a condition characterized by the protrusion of the intestine through an opening in the abdominal wall into the inguinal canal. There are various techniques available for the surgical repair of inguinal hernias, including open and laparoscopic approaches. On the other hand, a hydrocele refers to the accumulation of fluid within the scrotum and is often referred to as a "water hernia." In adults, hydroceles can be caused by factors such as injury, infection, or radiation therapy. Definitive treatment typically involves a surgical approach, which has an excellent prognosis. This case report presents the clinical scenario of a 58-year-old male patient, who presented with pain in the right inguinal region that radiated to the right scrotum. Upon examination, mild swelling was observed in the right inguinal region, along with significant edema of the right scrotum, which was tender to touch. Following admission, the patient underwent surgical treatment. The purpose of this case presentation is to enhance understanding of inguinal hernias and hydroceles, facilitating their identification and diagnosis.

Keywords: inguinal hernia, hydrocele, Winkelmann, Liechtenstein

Introduction

Inguinal hernias can be categorized into different types, including congenital and acquired, as well as direct and indirect hernias. An indirect hernia occurs when there is weakness in the muscles and supporting structures of the inguinal canal, allowing the intestine to protrude through the internal and external inguinal rings and descend towards the scrotum. This type of hernia is often congenital or acquired and can occur bilaterally in about 30% of cases in men. In women, the hernia is located within the round ligament of the uterus.

On the other hand, a direct hernia is always acquired and is more common in middle-aged and older men. It occurs in Hesselbach's triangle, which is medial to the lower epigastric blood vessels [1]. Unlike an indirect hernia, a direct hernia is not located within the spermatic cord but can extend along the entire length of the inguinal canal to the scrotum. The lifetime prevalence of inguinal hernias is higher in men (27%) compared to women (3%) [2].

The primary symptom of an inguinal hernia is typically a painless lump in the groin area [3]. However, some patients may experience discomfort or a burning sensation in the inguinal region due to nerve compression. In addition to pain, complications such as obstruction and intestinal ischemia can occur [4]. Surgical treatment is the recommended approach for all hernias unless there are contraindications. Conservative management is not curative. There are several surgical methods available, including the tension method (introduced by Eduardo Basini) and the Lichtenstein method, which is considered the gold standard in modern surgery and involves the placement of a mesh (prosthetic material) to reinforce the area.

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Informed Consent
The authors stated that the written consent was obtained from the patient presented with images in the study.

Conflict of Interest
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A hydrocele is characterized by the collection of fluid inside the scrotum, following the processus vaginalis [5]. The processus vaginalis is a protrusion of abdominal tissue into the scrotum and follows the spermatic ducts within the inguinal canal. Hydroceles are often benign and do not have significant health consequences, but large hydroceles can exert pressure on the testicles, potentially leading to atrophy and sterility. In adults, hydroceles can occur due to injury, infection, or radiation therapy.

Most hydroceles do not cause symptoms, but they may result in painless enlargement of one or both scrotums. Patients may experience discomfort or pressure on the affected side. If an inguinal hernia coexists with a hydrocele, pain may be present.

In adults, it occurs in every hundred patients. The majority of hydroceles do not cause any symptoms. Painless enlargement of one or both scrotums occurs most often [5]. Patients may complain of a feeling of discomfort or pressure on the side where the hydrocele is located.

Definitive treatment for hydroceles usually involves a surgical approach, such as the Winkelmann method, which entails excising the hydrocele sac through an inguinal approach [6,7]. This approach is typically performed when a hydrocele is associated with an inguinal hernia.

Case presentation

A 58-year-old male patient presented with swelling and pain in the right inguinal region, along with pain spreading to the right hemiscrotum. The intensity of the pain was low a week before admission but became more intense immediately before seeking medical attention. Upon examination, there was swelling in the right inguinal region and right hemiscrotum, and the patient experienced significant pain sensitivity upon palpation. The patient was admitted to a surgery department, where preoperative preparation was conducted. Basic laboratory and biochemical analyses were performed, including white blood cell count (WBC), neutrophil percentage (NE), C-reactive protein (CRP), albumin, proteins, sodium (Na), potassium (K), calcium (Ca), and liver function tests (AST, ALT, ALP, and gGT), all of which were within the reference values. Additionally, the patient underwent a chest X-ray and an ECG, both of which yielded normal findings. An internist and an anesthesiologist were consulted to ensure appropriate medical care. After adequate preoperative preparation, the patient underwent operative treatment under OET anesthesia, while being positioned in a supine, horizontal position. During the surgery, a classic inguinal hernia incision was made in the right inguinal region to access the inguinal canal. Upon dissection of the hernia sac, an expansion resembling a sac was observed (Figure 1), which increased in size when pressure was applied to the right hemiscrotum. Further preparation revealed the presence of a hydrocele associated with the inguinal hernia (Figure 2).

Figure 1: Bridled funiculus, saccular dilatation observed

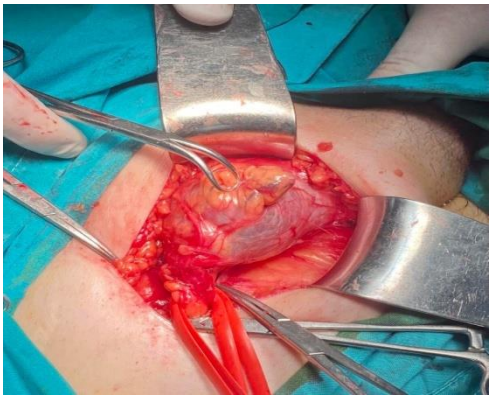
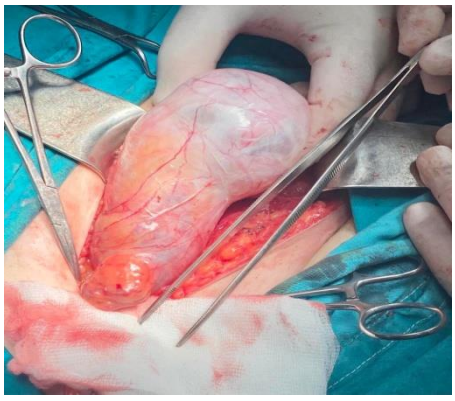


Figure 2: Prepared hydrocele



After dissection of the hernia sac, it is repositioned in the abdomen and reconstruction is performed. We evacuate the clear liquid content (about 50ml) from the hydrocele through an incision and approach the Winkelmann technique.

We return the testicle to the scrotum (Figure 3) and place the drain in the scrotal sac. After that, we perform reconstruction of the inguinal canal according to Lichtenstein (Figure 4, 5).

Figure 3: Condition after Winkelmann, the testicle

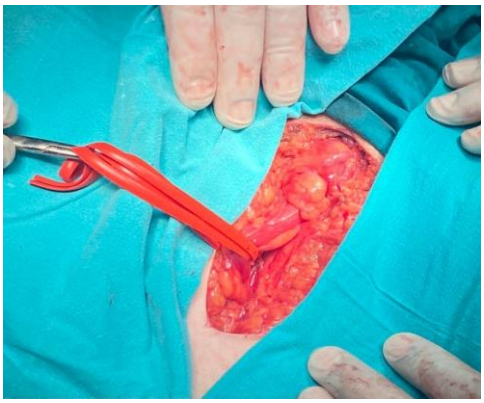


Figure 4: Reconstruction of the inguinal canal returned to the scrotum according to Lichtenstein

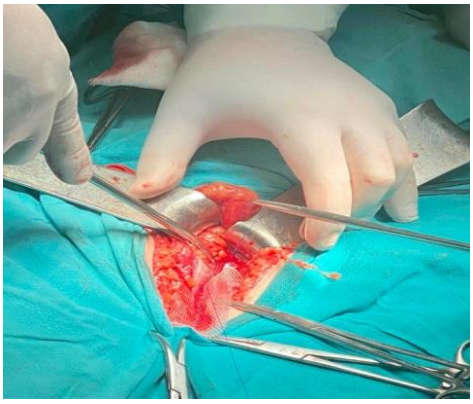


Figure 5: Placed drain in the right hemiscrotum

Discussion

Hernias are a common surgical condition, and their repair is one of the most frequently performed surgical procedures worldwide. Inguinal or groin hernias account for approximately 75% of all hernias, with indirect inguinal hernias comprising 50% and direct inguinal hernias comprising 25% of cases. Inguinal hernias are more prevalent in men, and they occur more frequently on the right side than on the left. Previous experience and research have shown favorable results in the management of hernias and hydroceles. The technique described in this case, accessing the hydrocele through the inguinal canal, is in line with previous studies that have reported successful outcomes and prevention of recurrence [8]. Elective surgeries under general anesthesia, often performed as "day surgery," are common in the treatment of hernias and hydroceles. Inguinal hernias associated with hydroceles are relatively uncommon, except in cases of incarcerated hernias where immediate surgery is necessary to prevent damage to the organs within the hernia sac due to compromised blood supply. Surgical approaches such as the Bestenstion method, characterized by proper tension adjustment during hernioplasty, have demonstrated advantages such as reduced postoperative pain, faster recovery, and quicker return to daily activities compared to open-tension hernioplasty [9]. A conservative approach may be considered for patients with minimally symptomatic inguinal hernias. In cases where hydroceles develop later in life, it is important to identify the underlying pathology as prognosis can vary depending on the specific cause. Overall, surgical intervention remains the definitive treatment for hernias and hydroceles, providing successful outcomes and alleviating symptoms for patients.

Conclusion

The presented case of a patient with an inguinal hernia associated with a hydrocele highlights a rare occurrence of these two conditions coexisting. While inguinal hernias and hydroceles individually are commonly encountered in clinical practice, their combined presentation is relatively uncommon. This case report serves to enhance understanding and awareness of this particular entity among healthcare professionals.

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