



A RARE CASE OF GROIN SWELLING

General Surgery

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KEYWORDS

INTRODUCTION

The canal of Nuck is a vestigial peritoneal extension that accompanies the round ligament through the inguinal canal in females. It was first described in 1691 by the Dutch anatomist Anton Nuck. Under normal embryological development, this canal undergoes complete obliteration. When this process fails—particularly in the distal portion—a fluid-filled sac can form, leading to a hydrocele of the canal of Nuck. This entity is considered the female counterpart of a patent processus vaginalis in males and is associated with conditions such as indirect inguinal hernias and hydroceles. Due to its rarity, with fewer than 400 cases reported globally, diagnosis is often delayed or misinterpreted.

Case Report

A 38-year-old female presented with a gradually enlarging swelling in the right groin, initially noticed at the age of 10. Over the previous month, she had begun experiencing intermittent discomfort in the area. She denied any significant past medical or surgical history.

Clinical Examination

On physical examination, a soft, cystic, fluctuant, and transilluminant swelling measuring approximately 4 × 3 cm was identified in the right inguinal region. The mass was irreducible, showed no cough impulse, and lacked signs of inflammation or lymphadenopathy.

Investigations

- Ultrasound (USG) Abdomen: Detected a well-demarcated cystic lesion in the right subcutaneous inguinal region. Further imaging was advised for better delineation.
- CT Scan: Confirmed the presence of a 3.2 × 3.3 × 4.2 cm well-defined cystic lesion, suggestive of a hydrocele of the canal of Nuck.

Histopathology

Microscopic analysis revealed a cystic structure lined by proliferating mesothelial cells, consistent with the diagnosis of a canal of Nuck hydrocele.

Surgical Management

Surgical exploration and complete excision of the hydrocele were performed. The procedure also involved removal of the round ligament and right-sided meshplasty to reinforce the inguinal wall.

DISCUSSION

Hydroceles involving the canal of Nuck are a rare differential diagnosis for inguinal swellings in females. Based on anatomical and pathological features, they are categorized into three types:

1. Type I – Non-communicating hydrocele: The most common form, characterized by an isolated cystic swelling along the round ligament. This was the type observed in our patient.
2. Type II – Communicating hydrocele: Maintains a direct connection with the peritoneal cavity, analogous to congenital hydroceles in males.

3. Type III – Hourglass-type hydrocele: Exhibits a constriction at the deep inguinal ring, forming a sac with both intra-abdominal and inguinal components, and often mimics an inguinal hernia.

Due to the non-specific nature of physical findings, diagnosis often requires radiological imaging. Ultrasonography serves as a useful initial tool, while CT or MRI may be needed for precise anatomical localization. Histological confirmation is essential for definitive diagnosis. Treatment involves complete surgical excision, which is usually curative.

CONCLUSION

Although exceedingly rare, hydrocele of the canal of Nuck should be considered in female patients presenting with groin or labial swellings. Clinical evaluation alone may be insufficient; hence, imaging studies play a pivotal role in diagnosis. Early surgical intervention, including excision of the cyst and any associated structures, remains the gold standard for effective management and recurrence prevention.

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