International Journal of Biomedical And Advance Research

ISSN: 2229-3809 (Online)
Journal DOI:10.7439/ijbar
CODEN:IJBABN

Case Report

A rare developmental disorder 'Hydrocele of canal of Nuck' - A case report

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Abstract

Hydrocele of canal of Nuck of female is a rare developmental disorder corresponding to the hydrocele of the spermatic cord of males and often misdiagnosed as this type of cases are rarely come acrossed in the clinical practice and due to the paucity of the literature available in the surgical and gynaecological textbooks. Hence, in a young female patient, reporting with an inguinal swelling, hydrocele of canal of Nuck should also be considered as the differential diagnosis.

Keywords: Hydrocele, canal of Nuck, spermatic cord, inguinal swelling

1. Introduction

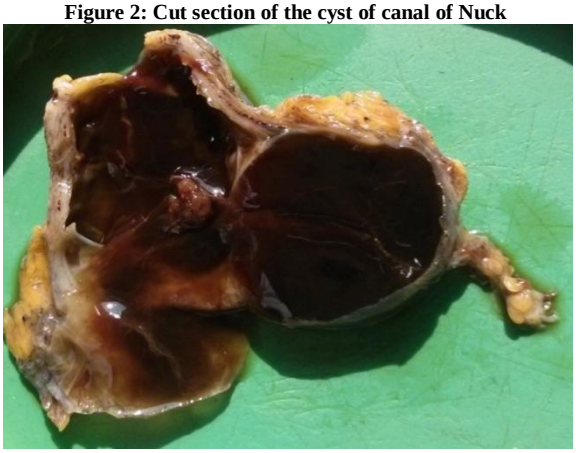
A small evagination of the parietal peritoneum that accompanies the round ligament into the inguinal canal during female development is called as the canal of Nuck, which is similar to the processus Vaginalis of male. It normally obliterates during the first year of life. The incomplete obliteration of the canal leads to formation of indirect inguinal hernia or a cyst (hydrocele) within the evaginated peritoneum.[1] this type of cases with developmental anomalies are rarely reported in literature. We report to you a rare case of hydrocele of canal of Nuck with its surgical and histopathological findings.

2. Case Report

A 31 year old female presented with painful swelling in the right inguinal region, insidious in onset, to the surgery outpatient department. On detailed history, patient had such complains one year back which subsided on medication. On physical examination, the swelling was tender, cystic, and transilluminating. No other abnormalities were found. All the lab investigations were normal. Ultrasonography of the right inguinal region revealed cystic swelling with internal septations. Patient underwent surgical exploration of the swelling through a right inguinal skin crease extending through subcutaneous tissue and external oblique muscle to reach the inguinal canal. It was noticed that cystic swelling lying in the inguinal canal extended from deep ring to superficial ring. Cyst was separated from the round ligament and excised in mass and sent for histopathological examination. External oblique muscle, subcutaneous tissue and skin were enclosed in layers. Histopathological report confirmed the diagnosis with the following findings: the gross specimen received was irregular globular mass measuring about 6x3x2cms (fig-1), the cut section of the cyst (fig-2) contained brown coloured mucoid fluid and the microscopic findings of the cyst showed chiefly fibro vascular tissue with a single layer of flattened cells (mesothelium) on the inner surface. Microbiology culture report for the fluid collected showed no growth. The patient reported to the surgery outpatient department after one month for follow up with uneventful recovery.

Figure 1: Gross specimen of cyst of canal of Nuck

Figure 2: Cut section of the cyst of canal of Nuck



2. Discussion

Anton Nuck in 1691 described canal of Nuck for the first time.[2] The processus vaginalis in male is termed as saccus vaginalis in females. Its prolongation into the inguinal canal is termed as canal of Nuck. It is normally completely obliterated during the first year of life, but may remain patent and form a potential site for indirect inguinal hernia.[3] The failure of obliteration of the distal portion of the canal results in the formation of a fluid-containing cyst also called as hydrocele of the canal of nuck.[4]

Over secretion or the under absorbtion of the peritoneal fluid by the secretory lining of the processus vaginalis may lead to the formation of the cystic swelling. The aetiological factors responsible for such cystic swelling are mostly idiopathic and other causes are inflammation, trauma, impairment of lymphatic drainage and meconium hydrocele.[5]

The Hydrocele of canal of Nuck is classified into three types: the most common type is the encysted hydrocele wherein there is no communication of the hydrocele with the peritoneal cavity and the cyst may be found anywhere along the course of the round ligament from the internal ring to the vulva. The Second type is similar to congenital hydrocele of the male where there is a persistent communication of the hydrocele with the peritoneal cavity. A third type or hour glass type where there is a constriction at the internal ring so that the upper sac is intra-abdominal but outside of the peritoneum and the lower sac is in the inguinal canal and simulates a hernia.[6]

As this type of case is rarely a crossed in the clinical practice and due to the paucity of the literature available in the surgical and gynaecological textbooks clinicians are unaware of such cases and misdiagnose it for the more commonly come acrossed inguinal hernias.[7]

The differential diagnosis for the swelling in the inguinal region in a female can be conditions like inguinal hernia, cysts, abscess, lymphadenopathy, tumours like lipoma, leiomyoma, sarcoma, rarely cystic lymphangioma, neuroblastoma metastasis in groin and hydrocele of canal of Nuck and the diagnosis is difficult on the basis of history and physical examination.[5,8,9]

These cases of canal of Nuck are more often reported in children but also rarely documented in adult females too. [6,10,11]

3. Conclusion

In a young female patient, reporting with an inguinal swelling hydrocele of canal of Nuck should also be considered as the differential diagnosis. History and physical examination is of no much help, radiology may help in the diagnosis but surgery and histopathology will confirm the diagnosis.

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