A RARE CASE OF HYDROCOELE OF CANAL OF NUCK

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ABSTRACT

INTRODUCTION

Hydrocele of canal of Nuck of female is a rare developmental disorder corresponding to the hydrocele of the spermatic cord of males It results from the failure of obliteration of the distal portion of evaginated parietal peritoneum within the inguinal canal which forms a sac containing fluid. It can be diagnosed on the operating table at the time of operation of suspected incarcerated inguinal hernia.

We present a rare case of a 15 year old girl with right-sided groin swelling over 4 years, diagnosed as hydrocele of canal of Nuck. Patient underwent surgical exploration and excision of hydrocele. This entity should be considered in young females presenting with an inguinal swelling.

KEYWORDS

Hydrocoele, Canal, Nuck, Hernia.

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INTRODUCTION: The round ligament is attached to the uterus and a small evagination of the parietal peritoneum accompanies the round ligament through the inguinal ring into the inguinal canal in the female. This small evagination of the parietal peritoneum is the canal of Nuck in the female, which is homologous to the processus vaginalis in males. The canal of Nuck is normally obliterated in the first year of life.[1,2] Failure to achieve complete obliteration results in an indirect inguinal hernia or hydrocele of the canal of Nuck, 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.

CASE REPORT: A 15 year-old female presented with complaint of pain and swelling in her right inguinal region since 4yrs. Swelling was insidious in onset, with a slight increase in the size of the swelling since its occurrence. There was no history of vomiting, bowel and bladder dysfunction. On examination, an oval, approximately 3cmx2cm in size, tender, cystic and fluctuant swelling was present in the right inguinal region. Transillumination test was negative. Swelling was irreducible against manual pressure. There was no expansible cough impulse, peristaltic activity or abnormal vascularity-associated with the swelling. Signs of inflammation were absent. Lymph nodal examination was normal. Ultrasonography revealed right inguinal hernia, with well-defined, oval, anechoic cystic swelling within the inguinal canal measuring 3×2cm. Patient underwent right sided herniotomy with excision of hydrocele. Peritoneum was opened and hernia defect was identified. Round ligament was identified along with the hydrocele of the canal of Nuck. Cyst of canal of Nuck was separated from the round ligament and excision of the cyst of canal of Nuck was carried out. Peritoneal flaps were approximated. Post-operative period was uneventful and patient recovered satisfactorily. Histopathologic examination confirmed it as Hydrocoele of canal of Nuck. Patient is asymptomatic on follow up.

Fig. 1

Fig. 2

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Fig. 3

DISCUSSION: Anton Nuck in 1691 described canal of Nuck for the first time.[3] 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.[4] 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.[5]

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.[6]

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.[7]

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 inguinal hernias.[8]

The diagnosis is difficult on the basis of history and physical examination.[6,9,10]

These cases of canal of Nuck are more often reported in children but also rarely documented in adult females too.[6,11,12]

The differential diagnosis for an inguinal mass in a female includes indirect hernia, lymphadenopathy, Cold abscess, Bartholin's cyst, post-traumatic hematoma, rarely cystic lymphangioma, neuroblastoma metastasis in groin and ganglion.[13,14,15]

CONCLUSION: In conclusion, a hydrocoele of the canal of Nuck though rare should be considered in the differential diagnosis in young females presenting with an inguinal swelling. Establishing a definitive diagnosis on clinical examination is challenging, radiological imaging may assist in diagnosis but surgical exploration is critical for final diagnosis.

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