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Hydrocele of the Canal of Nuck: Case Report

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Abstract | **Case Report**

Swelling in the inguinal region of a woman may result from a number of conditions. Hydrocele of the canal of Nuck is a rare condition seen in females which is an extension of the peritoneum into the inguinal canal. It may be difficult to make a specific diagnosis based upon the history and physical examination alone. This report describes a symptomatic 44-year-old woman in whom CT and ultrasound were helpful in diagnosing a hydrocele of the canal of Nuck. Through this work, we will present the results of the imaging leading to its positive diagnosis and its characterization.

Keywords: Inguinal mass, the canal of Nuck, Hydrocele of the canal of Nuck, Hydrocele.

INTRODUCTION

Hydrocele of the Nuck's canal is a rare condition in women resulting from the persistence of the opening of the Nuck's canal; it is discovered rarely in adulthood. Imaging plays a crutial role in the diagnosis and management of this pathology, by estabilishing pre-therapeutic evaluation useful to the surgeon.

CASE REPORT

The case concerns a 44-year-old single nulliparous woman who presented to our departement for a left inguinal swelling. She had a history of menometrorrhagia secondary to uterine myomas, wich stopped the treatment; as well she beneffited of a biopsy cure of a left inguinal lymphadenopathy, which proved to be of reactive inflammatory origin and without signs of malignancy on anatomo-pathological examination.

The clinical examination revealed a left inguinal swelling progressing for four years without any notion of inguinal trauma or digestive disorder, evolving from an afebrile context and conservation of general condition. On palpation, the swelling was mobile, irreducible and slightly painful. Based on these clinical data, the following diagnoses were suggested: inguinal hernia, inguinal lymphadenopathy, soft tissue tumors, Nuck's canal hydrocele.

An abdominopelvic CT was performed first and revealed an enlarged uterus, with several lesional formations of variable size and shape that may be related to uterine myomas (Figure 1).

It also revealed a left inguinal cystic formation, oblong, with thin wall, not enhanced after injection of contrast; this cystic formation seems to extend to the large homolateral lip (Figure 2).

Additional ultrasound was indicated to complete the characterization: This cystic formation is anechoic, with a thin wall, well limited, containing a few thin partitions, non-vascularized on Doppler and not increasing after the Valsalva maneuver (Figure 3).

In view of these imaging results, we retained the diagnosis of Hydrocele of the Nuck's canal associated to uterine myomas.

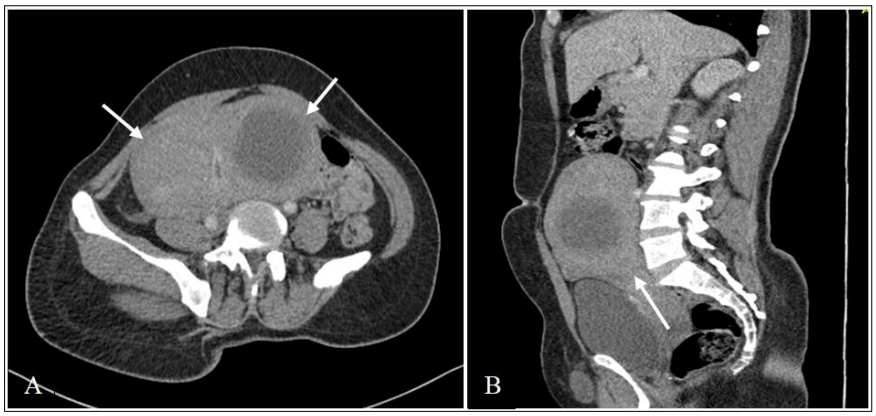

Figure 1: Axial (A) and sagittal (B) slices of abdominopelvic CT: Several lesional formations related to uterine myomas

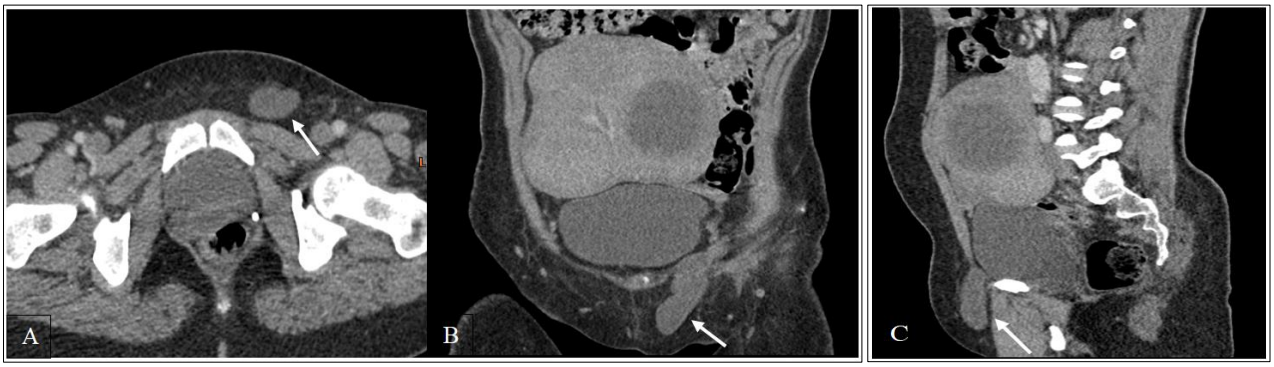

Figure 2: Axial (A) frontal (B) and sagittal (C) reconstructions of abdominopelvic CT: Left inguinal cystic formation, oblong, extended to the large homolateral lip related to Hydrocele of the canal of Nuck

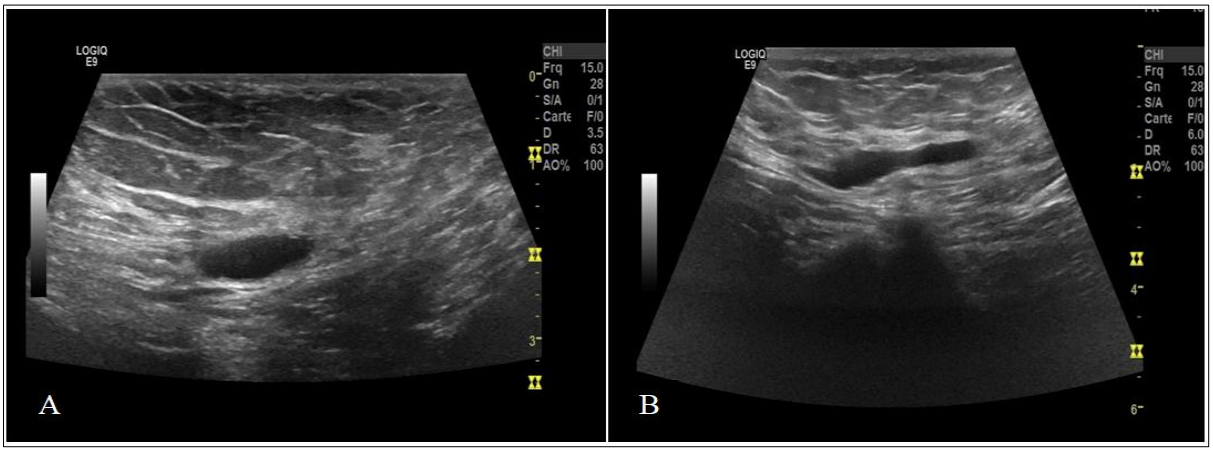

Figure 3: Axial (A) and Sagittal (B) slices of pelvic ultrasound: Anechoic cyst formation, related to the Hydrocele of the Nuck's canal

DISCUSSION

Nuck's canal is an abnormally permeable pocket formed from the parietal peritoneum and extending anterior to the round ligament towards the labia majora in the inguinal canal [1].

Nuck's canal normally disappears during the first year of life. It closes gradually from top to bottom; when it remains permeable, it leads to the formation of the hydrocele. The diagnosis of this pathology is most often discovered incidentally in adult women [2].

During the development of the male fetus, the testis goes down along the gubernaculum through the inguinal canal into the scrotum; it is enveloped in an extension of the parietal peritoneum called the process vaginalis. When the testicle is immobilized in the scrotum, the process vaginalis closes [3].

The same peritoneal evagination occurs in women along the round ligament in the inguinal canal; the canal of Nuck refers to the section of the processus vaginalis that is located in the inguinal canal in females, failure of closure can lead to hydrocele, or hernia of the abdominal organs through this canal [4, 5].

The most frequently presenting symptom is a fluctuating, irreducible, painless mass in the inguinal or labia majora region [6].

Ultrasound is the first examination to be carried out. It is simple to make, innocuous and affordable; he locates the anomaly, and characterizes it. It can differentiate the hydrocele from a possible inguinal hernia (by the maneuver of Valsalva). The sonographic appearance of the Nuck hydrocele is anechoic tubular well defined cyst formation with a thin wall. Nuck duct cyst does not show internal vascularization [7, 8].

CT and MRI can be complementary when ultrasound results are not conclusive. The hydrocele appears on CT as a cystic, oblong, hypo-dense structure not enhanced by the contrast, he also performs the pre-surgical assessment, by analyzing the relationship with the various adjacent structures. The communication with the inguinal canal may not be identified on CT [9].

MRI is the reference imaging. It generally appears as a cystic lesion with a thin wall, hypointense on T1 and hyperintense on T2, with a few thin septa [9].

Surgical treatment remains the only curative treatment by removing the cyst and closing the defect; the indications for surgery are essentially based on the symptomatology, the extent of the anomaly and the coexistence of pathology, in particular a concomitant inguinal hernia [10].

CONCLUSION

Nuck's canal hydrocele is rare in women and can be confused with other pathologies; imaging plays a crucial role in diagnostic, management and pre-surgical assessment. Ultrasound is the examination of choice to establish the positive diagnosis; MRI remains complementary in case of diagnostic difficulty and for the detailed pre-surgical anatomical assessment.

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