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Nuck canal cyst involving right femoral vein: management and therapy of a rare clinical case

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SUMMARY: **Nuck canal cyst involving right femoral vein: management and therapy of a rare clinical case.**

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We present a very rare case of a 49-year old woman suffering from Nuck canal cyst reaching and compressing femoral vein. Nuck canal cyst is very uncommon event because the pouch accompanying the gubernaculum *during intrauterine descent of ovaries usually obliterates, whereas when it persists a cystic cavity containing citrine fluid develops. A gravid 0 para 0 49 old woman was admitted to Catania University Surgery Department owing to suspected lymphatic tumor compressing right femoral vein and causing groin pain with ipsilateral leg partial stasis. Patient believed right venous stasis was due to fibromatous uterus. Ultrasounds and computed tomography (CT) scan defined size (7.1 × 4.2 × 1.5 cm), structure (cystic) of mass and its relation with femoral vein, although they were not diriment for diagnosing its nature. Color Doppler detected circulatory function of compressed femoral vein. Surgery was challenging and Nuck cyst was removed after accurate separation from the right femoral venous walls.*

A case of Nuck cyst involving femoral vein has never been reported so far.

KEY WORDS: Rectal cancer - Canal of Nuck - Hydrocele - Cyst - Groin - Sonography - Magnetic resonance imaging.

Introduction

Nuck canal, first reported by Anton Nuck in 1691 (1), is an abnormal and irregular peritoneal pouch enlarging into the *labia majora*.

In a man, it corresponds to a *processus vaginalis*. In rare cases, it causes either a cyst or a hydrocele in women as well and, sometimes, it may give rise to a hernial process of groin.

Normally the pouch accompanying the *gubernaculum* during intrauterine descent of ovaries obliterates, whereas, when it persists, a cystic cavity containing citrine fluid develops. Usually when Nuck cyst appears in the woman, it lies in the groin and does not reach the thigh. Imaging findings have been being described in a few reports (2, 3).

We present a very rare case of a 49-year old woman suffering from Nuck canal cyst reaching and compressing femoral vein.

Case report

A gravida 0 para 0 49-year old woman was admitted to Catania University Surgery Department owing to suspected lymphatic tumor compressing right femoral vein and causing groin pain with ipsilateral leg partial stasis. For the first time a year earlier, patient observed a right thigh growing mass. Initially, it was asymptomatic whereas for the last four months pain and stasis bothers have been increasing gradually. She had neither vomiting nor bowel or urinary complaint. The patient believed symptomatology was due to a fibrous uterus compressing pelvic right blood vessels.

Objectively a reducible, squashy and little sore mass without phlogosis on medial part of the right thigh was observed.

High resolution ultrasonography of pelvis, groin

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and thigh, detected a fibromatous uterus and a tubular cystic structure of 7.1 × 4.2 × 1.5 cm in diameter without septa involving both groin and medial apical aspect of thigh. The mass changed its shape when compressed. Color Doppler showed a close connection with the femoral vein. A contrast medium computed tomography (CT) scan confirmed, other than an uterus with multiple fibroids, a fluid density inguino-femoral oval formation in contact with common femoral vein and in correlation of continuity with minor venous branches (Figure 1). A hypothesis of lymphatic swelling was supposed although other diagnostic options were not excluded. Patient underwent surgery (Figure 2).

An inguino-femoral incision was performed. The mass was identified. Accurate separation of the cyst from the femoral vein walls was performed. This step was particularly challenging, a bleeding was caused and immediately blocked by means of accurate hemostasis. Coagulation of collateral venous branches was carried out. Removal of cyst and suture of tissue ended procedure. Postoperative course was uneventful and the following day patient was discharged. Six months follow-up was regular.

Discussion

This case report is very interesting for the following reasons:

1) Rarity of case: it is very unusual that Nuck canal mass remains latent allowing cyst development in a adult woman. The canal of Nuck is a consequence of a peritoneal evagination along the lower part of the round ligament.
2) Difficulty of diagnosis: this sort of cyst is difficult to diagnose due to its rare incidence and because it is often mistaken for other pathologic processes of inguinal pain (4). The enlargement of cyst is a consequence of an imbalance of secretion and absorption of the secretory membranes covering the processus vaginalis. This imbalance may be caused by alteration on lymphatic drainage as well as trauma or infection. For this reason it could be incorrectly identified as a lymphatic swelling.

After visiting, ultrasounds are useful to detect both structure and size of mass (5). When it is anechoic, a citrine fluid is the content and we presume to find a simple cyst. Besides, when the structure is very dense an endometriosis associated with Nuck canal cyst has to be supposed. Usually, a cyst of the canal of Nuck differs from an hernial sac as there is neither omental nor intestinal content inside (6-22). Contrast medium CT and Magnetic Resonance Imaging (MRI) are useful for a better diagnostic accuracy, while Doppler allows vascular involvement when either veins or arteries are compressed.

3) Treatment: removal of cyst is compulsory

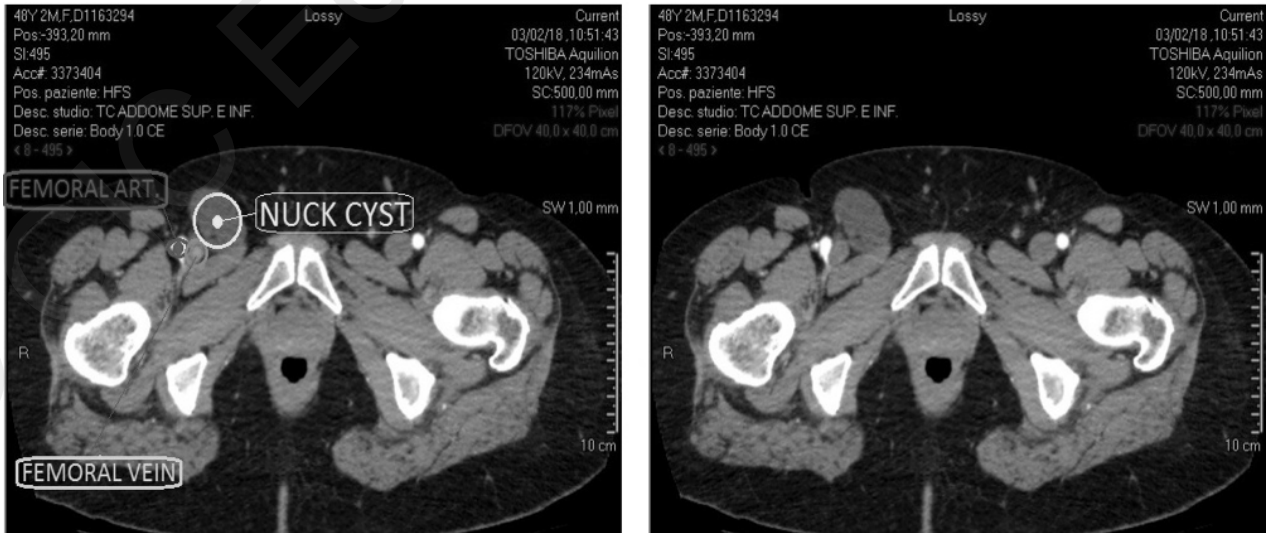

Figure 1 - CT showing correlation between femoral vein and nuck cyst.

Figure 2 - Surgery: Nuck cyst after separating from femoral vein.

for recovering and surgery is rather easy. Nevertheless when femoral vein is involved, surgery is challenging and vascular damage must be avoided. An inguino-femoral incision was performed. The mass was identified. Accurate separation of the cyst from the femoral vein walls was carried out. This step was particularly challenging, a bleeding was caused and immediately blocked by means of accurate hemostasis. Coagulation of collateral venous branches obtained. Removal of cyst and suture of tissue ended procedure. Postoperative course was uneventful and the following day patient was discharged. Six months follow-up was regular.

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