

CASE SERIES

# Hydrocele of Canal of Nuck in Adult Females – A Series of Two Cases

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## **ABSTRACT**

Hydrocele of canal of Nuck in adult females is exceptionally rare. The canal of Nuck is the portion of processus vaginalis in the inguinal canal in women. This is homologous to the processus vaginalis of male anatomy. Although canal of Nuck normally disappears without a trace in the first year of life but if it remains patent, then it can lead to development of indirect inguinal hernia or hydrocele of canal of Nuck. Ultrasonography is the preferred investigation. Magnetic resonance imaging (MRI) done to confirm the diagnosis preoperatively. The treatment remains the excision of hydrocele of canal of nuck. We are presenting two cases of hydrocele of canal of Nuck in adult female, one Bilateral and another unilateral which were treated by laparoscopic excision of hydrocele with mesh repair.

## **KEYWORD**

Hydrocele of canal of Nuck; Patent processus vaginalis; Canal of nuck; Female hydrocele

## **INTRODUCTION**

The canal of Nuck was first described by the Dutch anatomist Anton Nuck in 1691. The hydrocele of canal of Nuck, also called as female hydrocele is a very rare condition. Canal of Nuck is homologous to a patent processus vaginalis in males which also predispose to indirect inguinal hernia and hydrocele of spermatic cord. Thus hydrocele of canal of nuck in females is equivalent to encysted hydrocele of cord in males [1]. The canal of Nuck is normally obliterated in the first year of life but failure to achieve complete obliteration results in an indirect inguinal hernia or hydrocele of canal of Nuck. The fluid in the hydrocele of canal of Nuck is likely due to imbalance of the secretion and absorption of the secretory membrane lining the processus vaginalis. Usually, it is idiopathic but sometimes trauma or infection may cause disruption of lymphatic drainage which may lead to imbalance.

## **CASE PRESENTATION**

### ***Case 1***

A 45-years-old lady presented in OPD with swelling in bilateral inguino-labial region for last three months. There was no history of Diabetes, hypertension, any cardiac ailment, urinary tract infection, trauma or any infection in this region. On examination: The swellings were globular, cystic in consistency, not tender, about 4 cm × 2 cm on left side and 3 cm × 2 cm on right side.

Her USG showed lobulated, thick-walled cystic lesions, few of which showing internal echos, seen in bilateral inguinal regions measuring approximately 20 mm × 28 mm on left side and 18 mm × 34 mm on right side. Lymphangioma/Round ligament Cyst. MRI showed lobulated tubular fluid signal intensity lesions in left pelvic inguinolabial and right inguinolabial regions extending along the round ligaments suggestive of hydrocele of canal of Nuck/ Mesothelial cysts of the round ligament.

Laparoscopic excision of hydrocele of canal of Nuck on both sides with transabdominal preperitoneal repair was done. Her histo-pathological report revealed loose connective tissue with mesothelial lining with mild chronic inflammatory infiltrate, congestion of blood vessels and fibrosis suggestive of Bilateral hydrocele of canal of Nuck.

### ***Case 2***

A 35-years-old lady presented in OPD with swelling left Inguino-labial region for last 4 months - 5 months. Earlier 2 ml fluid was aspirated from it for FNAC. There is no history of DM, HT or any cardiac ailment. She is a known case of Hyperthyroidism. On examination it was a diffuse (not very prominent because size has reduced after aspiration) cystic swelling in left inguino-labial region.

USG showed left sided inguinal cystic mass of 1.6 cm × 0.8 cm size with clear fluid inside and no communication with the peritoneum. There was no change with the Valselva maneuver. Most likely Hydrocele of canal of Nuck. FNAC shows average cellular smear predominantly acellular necrotic material along with cyst macrophages and inflammatory cells- suggestive of cystic nature of swelling MRI Pelvis showed fluid in the inguinal canal from deep to superficial inguinal ring-possibility of Hydrocele of canal of Nuck.

Laparoscopic excision of Hydrocele of canal of Nuck along with mesh repair was done. Histopathology showed loose connective tissue with congested blood vessels and denuded ill-defined mesothelial lining. Focal mild chronic infiltrate, fibrosis and edema suggestive of Hydrocele of canal of Nuck

## **DISCUSSION**

The canal of Nuck was first described by a Dutch Anatomist Anton Nuck in 1691. The processus vaginalis in females is known as canal of Nuck. The homologous structure in men is called the processus vaginalis [2]. Hydrocele of canal of Nuck should always be considered in differential diagnosis of inguinal swelling in females along with hernia, lymphadenopathy, abscess, cyst, tumors like Lipoma, Liposarcoma, neurofibroma sarcoma, hematoma [3]. Hydrocele of canal of Nuck are usually painless but sometimes symptoms can be acute or chronic and infection of the hydrocele are also possible [4]. Ultrasonography can be initial imaging because of its low cost and wide availability, MRI could be used for complex cases and further investigations [5] because MRI can give

more precise images including septations and a communication between cystic lesion and the peritoneal cavity and information on the anatomical relations with adjacent structures. The hydrocelectomy with mesh repair is the treatment of choice.



**Figure 1:** MRI of Case 1 showing bilateral hydrocele of canal of nuck.



**Figure 2:** MRI of case 2 showing left hydrocele of canal of nuck.

## **CONCLUSION**

Hydrocele of canal of Nuck, although very rare, should always be considered in differential diagnosis of inguinal swelling in females along with hernia, lymphadenopathy, abscess, cyst, tumors like Lipoma, Liposarcoma, neurofibroma sarcoma, hematoma.

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