

Hydrocele of canal of Nuck in adult females – A series of two cases

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Case Report

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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.

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 Reports

CASE 1...

A 45 year 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 4x2 cm on left side and 3x2 cm on right side.

Her USG showed lobulated, thick walled cystic lesions, few of which showing internal echos, seen in bilarteral inguinal regions measuring approximately 20x28mm on left side and 18x34mm 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 year old lady presented in OPD with swelling left Inguino-labial region for last 4-5 months. Earlier 2ml 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 1.6x0.8cm 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 it's 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.

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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Authors contribution Corresponding author is the main author. 2nd author has also contributed in surgery and taking care of patient. 3rd and 4th author has contributed in diagnosing these rare cases.

Ethics Approval Proper approval has been taken from the Ethical committee of the hospital

Consent for publication Written consent has been taken from the patient for publication

Figures

Figure 1



Figure 1

MRI of case 1 showing Bilateral Hydrocele of canal of Nuck

Figure 2

MRI of case 2 showing left sided Hydrocele of canal of Nuck