



E-ISSN: 2616-3470

P-ISSN: 2616-3462

© Surgery Science

[www.surgeryscience.com](http://www.surgeryscience.com)

2022; 6(3): 25-26

Received: 20-04-2022

Accepted: 27-05-2022

**Dr. Kalpesh Chaudhari**

Assistant Professor, Department of  
General Surgery, Dr. D.Y. Patil  
Medical College and Hospital, Navi  
Mumbai, Maharashtra, India

**Dr. Sandeep Nagare**

Junior Resident, Department of  
General Surgery, Dr. D.Y. Patil  
Medical College and Hospital, Navi  
Mumbai, Maharashtra, India

**Dr. Anurag Dasari**

Junior Resident, Department of  
General Surgery, Dr. D.Y. Patil  
Medical College and Hospital, Navi  
Mumbai, Maharashtra, India

## Hydrocele of the canal of nuck: A case

**Dr. Kalpesh Chaudhari, Dr. Sandeep Nagare and Dr. Anurag Dasari**

DOI: <https://doi.org/10.33545/surgery.2022.v6.i3a.912>

### Abstract

The canal of Nuck is a small evagination of the parietal peritoneum, which is attached to the uterus by the round ligament through the internal inguinal ring into the inguinal canal. This structure is homologous to the processus vaginalis of the male anatomy. Hydrocele of the canal of Nuck is a rare disease that occurs in the inguinal area or labium as a painless edema before adolescence. We report the case of a hydrocele of the canal of Nuck in a female adult.

**Keywords:** Hydrocele, processus vaginalis, inguinal canal

### Introduction

The canal of Nuck is a small evagination of the parietal peritoneum. The inguinal canal is traversed by the spermatic cord in men and the round ligament of the uterus in women. The round ligament is attached to the uterine cornua near the origin of the fallopian tube at one end and to the ipsilateral labia majora at the other. The round ligament accompanies a pouch of parietal peritoneum in the inguinal canal, which is known as 'canal of nuck'. Although the canal of Nuck normally disappears without a trace in the first year of life, it can cause an indirect inguinal hernia or hydrocele of the canal of Nuck when, in rare cases, it does not disappear completely

### Case report

A 42 year old female was referred from a rural hospital for a suspected incarcerated right-sided inguinal hernia. She first noticed a peanut-sized swelling in the right groin 6-months back; it gradually enlarged to reach the present size. She sought medical attention because of moderate pain in her right groin for the last 4-days. There were no complaints of abdominal pain, distension of abdomen or vomiting. The patient did not have any history of trauma to the right inguinal region. There was no change in her bowel and bladder habit in the last four days. Local examination revealed a pear shaped 5 × 2.5 cm irreducible, fluctuant swelling in the right inguino-labial region. There was no expansile impulse on straining (coughing). The swelling was transilluminant but no thrill or bruit was noted over the swelling. Overlying skin was normal and free from the groin lump. Her complete blood count and urinalysis was normal. A differential diagnosis of an inguinal hernia or hydrocele was made from the aforesaid clinical examination. Ultrasonography of the right inguino-labial region revealed e/o 5 x 2cm sized cystic swelling right inguinal region.



**Fig 1:** Intra operative picture of hydrocele of canal of nuck

**Corresponding Author:**

**Dr. Kalpesh Chaudhari**

Assistant Professor, Department of  
General Surgery, Dr. D.Y. Patil  
Medical College and Hospital, Navi  
Mumbai, Maharashtra, India

Then she underwent surgical exploration through right inguinal incision, where after cutting the skin and subcutaneous tissue we encountered a cystic lesion. Then we open the external oblique aponeurosis to delineate the extension of the lesion. Cyst was extended down to the right labia majora and it was clearly seen to be an encysted hydrocele of canal of the nuck, without any evidence of associated inguinal hernia. The cyst was carefully dissected from the round ligament and ligation of the canal of nuck done near a deep inguinal ring and prolene mesh was placed and fixed and the wound closed in layers. The histopathological findings of the cyst wall showed that the cyst chiefly comprised vascularised fibrous tissue and flattened mesothelial cells lining the inner surface.

### Discussion

During embryonic development in females, the cranial part of gubernaculum becomes the ovarian ligament, and the caudal part forms the round ligament of the uterus. As the round ligament passes through the inguinal canal into the labium majora, it is accompanied by the peritoneal fold "processus vaginalis" which is known as canal of Nuck. It was first described by the anatomist Anton Nuck in 1691. Normally, this peritoneal evagination undergoes complete obliteration during the first year of life. Failure of obliteration may result in indirect inguinal hernia or fluid collection within the processus vaginalis, forming hydrocele of the canal of Nuck. The formed hydrocele is the rarely seen equivalent of a spermatic cord hydrocele in males.

The Hydrocele of canal of Nuck is classified into three types: (I) The most common type is the encysted type where 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 deep ring to the labia majora. (II) The Second type is similar to congenital hydrocele seen in male where there is a persistent communication between hydrocele and the peritoneal cavity; (III) In third variety there is a constriction at the deep ring like an hour-glass, so that the proximal part of the sac is retroperitoneal and the distal portion of the sac is in the inguinal canal and clinically simulates an inguinal hernia.

There are many differentials to inguinal swelling in females including inguinal hernia, tumor (lipoma, leiomyoma, sarcoma), Bartholin's cyst, abscess, lymphadenopathy. Hence, to diagnose hydrocele of the canal of Nuck based on clinical examination only is challenging. Many studies have reported the use of radiologic diagnostic tools such as sonography and MRI in the diagnosis

### Conclusion

Despite the fact that hydrocele of the canal of Nuck occurs mainly in adolescence, we strongly suspected hydrocele of the canal of Nuck in this case based on the clinical symptoms and imaging diagnosis, and confirmed the diagnosis by surgical exploration without delay. This case suggests that hydrocele of the canal of Nuck should be included in the differential diagnosis of masses occurring in the inguinal area in adult females.

### References

1. Martha A, Kaeser Daniel W, Haun John CS Cho, Norman W. Kettner Hydrocele in the canal of Nuck J Med Ultrasound. 2011;19:138-140.
2. Kono R, Terasaki H, Murakami N, Tanaka M, Takeda J, Abe T. Hydrocele of the canal of Nuck: a case report with magnetic resonance hydrography findings Surg Case Rep. 2015;1:86. [PubMed: PMC4579258]

3. Yu Mi Choi, Gyu Min Lee, Jung Bin Yi, Kyung Lim Yoon, Kye Shik Shim, Chong Woo Bae, *et al.* Two cases of female hydrocele of the canal of nuck Korean J Pediatr. 2012;55(4):143-146 [PubMed: PMC3346837]
4. Manjunatha Y, Beeregowda Y, Bhaskaran A. Hydrocele of the canal of Nuck: imaging findings Acta Radiol Short Rep. 2012, 1(3). arsr.2012.110016. [PubMed: PMC3738346]
5. Husaric E, Hotic N, Halilbasic A, Husaric S, Rahmanovic E, Suljendic S. Cyst of the canal of nuck in a two year old girl Med Arch. 2014;68(4):289-290. [PubMed: PMC4240559]
6. Santanu Sarkar, Soumyajyoti Panja, Sandeep Kumar. Hydrocele of the canal of nuck (female hydrocele): a rare differential for inguino-labial swelling J Clin Diagn Res. 2016;10(2):PD21-2 [PubMed: 27042529]
7. Rambhia SU, Ayyar P. Hydrocele of canal of nuck: a case report Int Surg J. 2015;2:396-397.
8. Akkoyun I, Kucukosmanoglu I, Yalinkilinc E. Cyst of the canal of nuck in pediatric patients N Am J Med Sci. 2013;5(6):353-356, [PubMed: 23923108]
9. Kimberly Janssen, Denise Klinkner, Tarun Kumar. Encysted hydrocele of canal of nuck: A case report with review of literature. J Surg Tech Case Rep. 2011;3(2)97-98[PubMed: 22413054]
10. Nourah AL Saleh, Abdulrahman AL Maghrabi, Abdulaziz Banaja. Hydrocele of the canal of Nuck Journal of Pediatric Surgery Case Reports. 2018;29:36-38.
11. Anderson CC, Broadie TA, Mackey JE, *et al.* Hydrocele of the canal of Nuck: ultrasound appearance. Am Surg. 1995;61:959-961.
12. Manjunatha Y, Beeregowda Y, Bhaskaran A. Hydrocele of the canal of Nuck: imaging findings. Acta Radiol Short Rep. 2012, 1. doi: 10.1258/arsr.2012.110016.]
13. Akkoyun I, Kucukosmanoglu I, Yalinkilinc E. Cyst of the canal of nuck in pediatric patients. N Am J Med Sci. 2013;5:353-356.
14. Hydrocele of the Canal of Nuck (Female Hydrocele): A Rare Differential for Inguino-Labial Swelling. Santanu Sarkar, Soumyajyoti Panja and Sandeep Kumar