

## Canal of Nuck Hernia Presenting as a Labial Mass: Case Report

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### Abstract

Canal of Nuck hernia is a rare congenital condition occurring in female children caused by incomplete closure of processus vaginalis. The canal of Nuck is an extension of continuous outpouching parietal peritoneal fold through the inguinal canal to the labia majora. We report one case of canal of Nuck hernia which presented as labia majora swelling in female child.

**Keywords:** *Canal of Nuck hernia; Pediatric Hernia; Labial Mass*

### Introduction

Failure of processus vaginalis closure in females leads to the presence of a space between the peritoneum, inguinal canal and labia majora, which is known as the canal of Nuck. Hernia of canal of Nuck is an extension of peritoneal fold through the inguinal canal up to the labia majora. Incomplete obliteration of this parietal peritoneal fold leads to herniation of abdominal content into the inguinal canal [1].

Here we present a case of canal of Nuck hernia in female child, who presented with a right labial swelling.

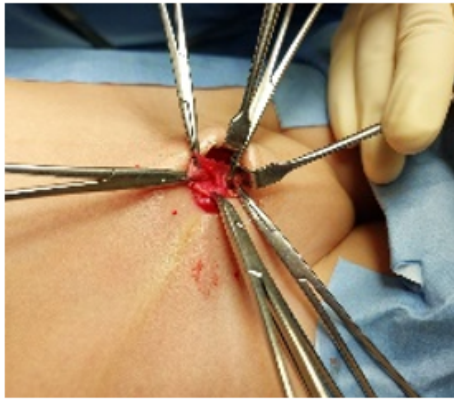
### Case Presentation

A 4-year-old female patient came with complaints of palpable right labial swelling since birth that increased in size upon crying. The right labial swelling was gradually increasing in size and was noticed by her mother.

Physical examination: A pear-shaped swelling (about 4 X 3 cm), exhibiting cough impulse was presented in the right inguino-labial region which was soft, nontender, and reducible. A diagnosis of indirect inguinal hernia from patent processus vaginalis was made. An ultrasound examination was performed, which demonstrated a right inguinal hernia extending into the right labia with omental fat as sac content when the patient had a valsalva maneuver. An elective hernia surgery was planned. At herniotomy surgery, there was no content in hernial sac (Figure 1). High ligation of the hernial sac was performed and the rest of the wound was closed in layers. Postoperatively, the patient discharged, with uneventful recovery period on follow-up.

### Discussion

Asymptomatic palpable mass in the inguinolabial region of female child has a relatively narrow range of differentials, including groin lymphadenopathy, canal of Nuck hernia, lipoma, hydrocele of the canal of Nuck, femoral hernia, Bartholin gland cyst, hemangiomas, post-traumatic hematoma, and epidermal cysts [2].



**Figure 1:** Sac opened and no contents of the sac.

The incidence of pediatric inguinal hernia ranges from 0.8% to 4.4%. Indirect inguinal hernia are 6 - 10 times more common in boys than in girls. In female children, the hernia protrusion through a patent processus vaginalis is known as the canal of Nuck hernia [3].

The canal of Nuck is a small protrusion of parietal peritoneum, which corresponds to the processus vaginalis in male. The extension of this parietal peritoneal fold obliterates into the fibrous cord during the first year of age. Incomplete obliteration leads to canal of Nuck hernia or hydrocele [1].

The canal of Nuck allows contents such as bowel, omental fat, fluid, ovary, fallopian tube, the uterus, and the urinary bladder to herniate through the inguinal canal into the labia majora [4].

The diagnosis of canal of Nuck hernia based on the clinical presentation. Ultrasound is the common investigation in the evaluation of the inguinal masses. It can characterize the contents and proceed to surgical planning [5].

In pediatric surgery literature, the risk of incarceration is highly increased in ovary containing hernias in comparison to the bowel containing hernias [6].

Ovary containing canal of Nuck hernias and incarceration of hernia contents are most common in children. Female inguinal hernia repair should be carried out promptly due to more opportunity of incarceration of hernia content occurring during first year of life [7].

### Conclusion

Canal of Nuck hernia is an uncommon condition that should be considered as differential in female child with inguinal or labial mass. Ultrasound is the modality in assessment the hernia contents and proper diagnosis. Definitive diagnosis is established through surgical inguinal explorations. This case report demonstrates a rare condition of female hernia. Prompt surgical management should be performed with early diagnosis.

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