Case Series

Hydrocele of the Canal of Nuck in Infancy and Childhood: A Report of 4 Cases

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Abstract

Hydrocele formation in the incompletely obliterated processus vaginalis (Canal of Nuck) is an uncommon and infrequently reported finding in girls. Surgical literature contains sparse discussion on the hydrocele of the canal of Nuck. Four girls aged between 2 months and 7 years were treated in the Department of Pediatric surgery Medical University Plovdiv for the last 10 years. According to our clinical experience a presentation of an asymptomatic palpable movable mass over the labium majus pudendum always suggests sliding hernia containing an ovary. We've made an attempt to establish the precise diagnose and treatment strategy.

Key words: hydrocele, Nuck

Introduction

In 1650-1692 Anton Nuck[1] described an abnormal presence of patent processus vaginalis in the inguinal canal of women that now bears his name (Canal of Nuck). The canal of Nuck is analogous to the processus vaginalis and is an extension of the peritoneum into the inguinal canal adjacent to the round ligament. During the embryological development the round ligament is attached to the uterus near the origin of the Fallopian tube and ends just outside the external ring. The processus vaginalis accompanies the round ligament through the deep inguinal ring into the inguinal canal[2,3]. Hydrocele formation in the incompletely obliterated processus vaginalis is an uncommon and infrequently reported finding in girls so that literature contains sparse discussion on the hydrocele of the canal of Nuck. We reviewed our experience in our Department of Pediatric surgery for the last 10 years and we've made an attempt to establish the precise diagnose and treatment strategy.

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Patients and Methods

This is a retrospective review of the Medical records of children managed for hydrocele of Canal of Nuck between 1994 and 2003 (10 years) at the Department of Pediatric Surgery Medical University Plovdiv Bulgaria.

Results

There were 4 patients, all girls, in this report. They were aged between 2 months and 7 years (2 months, 4 years, 6 years and 7 years, respectively). All our patients presented with palpable movable mass in the inguinal region. In addition, the oldest presented with pain. The pain was absent in the morning and worsened by the end of the day. The girl had discomfort several months before the appearance of a swelling in the right groin. The swelling was firm, smooth and fixed, with an absent cough impulse. The youngest of our patients was admitted to the clinic because of suspected "incarcerated inguinal hernia". All of the girls had operation. Apart from the youngest who had emergency surgery, all the others had elective procedure. A superficial skin incision was made and a cystic mass protruding through the external ring

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Fig. 1: A cystic mass (hydrocele of canal of Nuck) protruding through the external ring after the superficial incision in a 2 month-old girl.

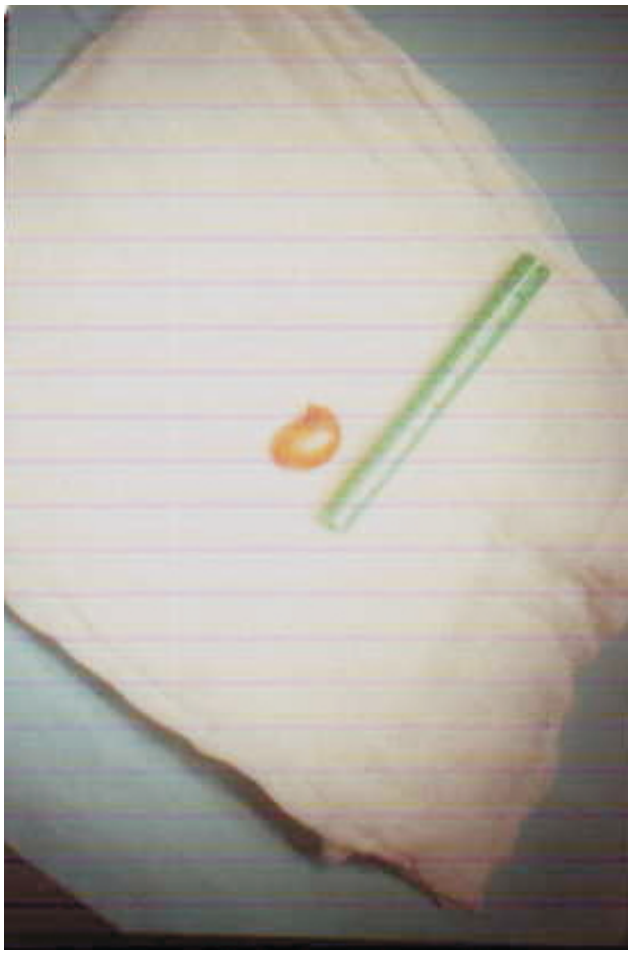


Fig. 2: The same mass (hydrocele of canal of Nuck) after total excision with the round ligament.

was noted (Fig 1). The external oblique muscle was opened and the cyst was dissected free of underlying muscle. The cyst was totally excised together with the round ligament (Fig 2) and then the canal was closed. We used this approach of surgical treatment in all our patients. All of them made uneventful recovery. The cyst was sent for pathologic examination. At histology the wall of the cyst was lined by low columnar epithelium, surrounded by cellular fibrous tissue and smooth muscle.

Discussion

A review of medical literature shows that hydrocele is rare in females. Aetius was the first to report of a hydrocele of the canal of Nuck, when he described 17 cases between AD 543 and 1860[3]. Dawam and Kanu reported a giant hydrocele of the canal of Nuck in 1998[4]. There are scanty references on hydrocele of canal of Nuck in children, particularly in neonates.

The diagnosis of hydrocele of canal of Nuck can be confusing. All our patients, except one, presented with a painless, irreducible swelling that was mobile in all directions, in the inguinal region. Nausea or vomiting is unusual. The differentiation between an inguinal hernia and a hydrocele of the canal of Nuck in girls may be difficult[5]. For instance,

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the youngest of our patients presented different from the rest, with a rapid appearance of a swelling associated with vomiting thus mimicking an obstructed hernia or an inflammatory mass. Ultrasonography may be needed to diagnose hydrocele of the canal of Nuck. In majority of cases diagnosis is made at surgery, as was our experience.

The treatment of the hydrocele of the canal of Nuck is a complete surgical resection, done in all our cases[5,6].

In conclusion the diagnosis hydrocele of the canal of Nuck should be considered in any girl presenting with either an assymptomatic movable mass in the inguinal region or an incarcerated inguinal hernia.

References

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