



Hydrocele of Canal of Nuck in an old woman: A Case Report

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Abstract

Background: The hydrocele of canal of Nuck is a rare condition. Mostly reported at a younger age and it is often misdiagnosed with other groin swellings. Due to its rarity, there are no standard treatment guidelines.

Case Report: Sixty years old lady presented with features of right side irreducible inguinal hernia. On exploration, it was consistent with type 1 hydrocele of canal of Nuck. And it was managed by hydrocelectomy.

Conclusion: The hydrocele of canal of Nuck is rare and often diagnosed at a younger age group. We may find this condition in older women above 60 years of age. Treatment of type 1 hydrocele of canal of Nuck is open hydrocelectomy.

Keywords: Hydrocele; Hydrocele of Canal of Nuck; HCN; Hydrocele in Old Women; Nepal; Canal of Nuck

Abbreviations

HCN: Hydrocele of Canal of Nuck; OPD: Out patient Department; USG: Ultrasonography; MRI: Magnetic Resonance Imaging

Introduction

The hydrocele of canal of Nuck (HCN) is a rare clinical condition reported only in case reports and very few of the case series [1]. Due to its rarity, HCN is often misdiagnosed for common groin masses [2]. It is often misdiagnosed as an inguinal hernia or femoral hernia on physical examination [3]. Historically, it has been observed more often in pediatric patients but with increased awareness, more cases of adult diagnoses have been made [4]. Most of the cases are reported in patients below 50 years of age. We report this rare case in a woman of 60 years of age.

Case Report

Sixty years old lady from Sindhupalchowk, Nepal presented to Surgery OPD of Nepal Medical College and Teaching Hospital, Kathmandu, Nepal with swelling over her right groin for 4 months. The swelling was insidious in onset, gradually progressive, non-painful with no sudden increase or decrease in size, and there was no relation to any position, cough or straining. It was irreducible and she had normal bladder and bowel habits. She experienced more discomfort over the swelling for 1 week and thus visited our OPD for further management of the condition. There was no history of trauma, surgical intervention and gynecological-related issues in the past. On examination she has an average built, general condition and vitals were essentially normal. Systemic examination including gynecological, genitalia and her left groin was normal whereas, in

her right groin, there was around 4 x 5 cm globular swelling with normal overlying skin. Swelling was non-tender, soft to firm in consistency, irreducible, and extended up to the right labia with a negative cough impulse and negative trans-illumination test (Figure 1).

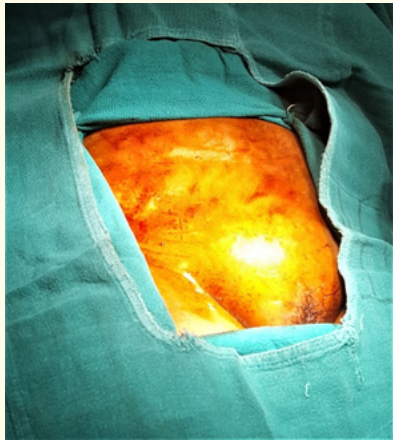


Figure 1

Clinical diagnosis of right sided irreducible indirect inguinal hernia was made and surgically explored. The right inguinal skin incision was given and the subcutaneous tissue was dissected. At this point, we could see a globular mass around 4x 4 cm coming from the superficial inguinal ring and extending up to right labia majora (Figure 2). On further exploration mass was ovoid in shape and cystic in nature. Its lower, medial and lateral margins were free but the upper margin was coming from the inguinal canal (Figure 3). Then the inguinal canal was opened dividing the external oblique fascia. On exploration, we could find an encysted mass of 6x4 cm which was ovoid, soft and cystic with positive trans-illumination. It was not communicating freely with the peritoneal cavity but was attached to the inguinal extent of the peritoneum (obliterated processus vaginalis) through deep inguinal ring (Figure 4). We could remove the cyst enblock like an egg (Figure 5). When incised extracorporeally in a kidney tray, its wall was thin like the peritoneum and there was light yellow coloured fluid as content (Figure 6). These findings were consistent with type I hydrocele of canal of Nuck [5]. Iatrogenic peritoneal opening at the level of the deep ring was closed. Since there was no frank hernial defect, only tissue repair was done and the wound was closed in layers.

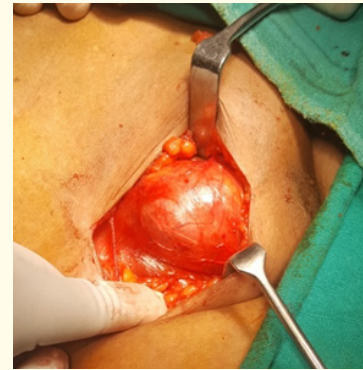


Figure 2



Figure 3

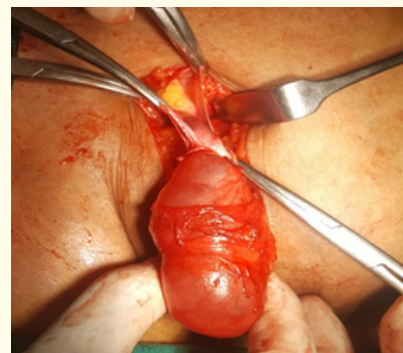


Figure 4



Figure 5



Figure 6

Histopathology was consistent with hydrocele of the canal of Nuck. The patient recovered normally in the post-operative period and was absolutely fine at 3 months of follow-up.

Discussion

The canal of Nuck which is homologous to processes vaginalis in male anatomy is a small evagination of the parietal peritoneum. It was first defined by Dutch anatomist Anton Nuck in the seventeen centuries [6]. This peritoneum usually obliterates by the first year of life, but a patent peritoneal fold can give rise to indirect hernias and hydroceles termed canal of Nuck cysts [3]. Thorough search in PubMed, Scholar and other data bases we could find no more than 150 publications and only two cases were reported from Nepal [7,8]. Variety of masses can be found in the female inguinal region. And the differential diagnosis includes hernia, lymphadenopathy, abscess, Bartholin's cyst, neurofibroma, sarcoma, liposarcoma, Burkitt lymphoma and posttraumatic or postoperative hematomas [9]. Although rare it should always come in the differential for any groin mass in females [1]. HCN are often diagnosed at a very early

age and most of the reported cases are among females below 50 years of age [1,4,10]. Apart from our case we could find only one case reported in an old lady at 70 years of age and surprisingly that had presented as a femoral hernia [3]. Hydrocele of canal of Nuck has been classified into three types in the literature [5].

- **Type 1:** No communication between the hydrocele and peritoneal cavity. It mostly appears as an encysted mass without a hernial defect.
- **Type 2:** Hydrocele communicates with the peritoneal cavity, thus mostly resulting in an indirect hernia.
- **Type 3:** Combined type has an encysted part that does not communicate with the peritoneal cavity and another that does. Its appearance resembles an hourglass and commonly causes a hernia.

When the proximal portion of the processus vaginalis closes, and the distal portion is still patent, the processus vaginalis which is lined by mesothelial cells will secrete fluid that accumulates in the potential space. The disproportion between production and absorption of this fluid will lead to the formation of the encysted and external type of hydrocele (Type 1 HCN) [11].

Ultrasonography (USG) is the initial investigation of choice and may sometimes require Magnetic Resonance Imaging (MRI) for complex cases [1,2,4,12]. Even with these investigations, HCN may be undiagnosed if the examiner is not familiar with the condition. Thus radiological findings have to be confirmed intraoperatively and by the histopathological report [1,13].

Treatment for HCN is complete surgical excision and it has always been open [2,13]. Although some surgeons have done it laparoscopically, [14] it will be very difficult for Type 1 (encysted and external) variety to treat laparoscopically. Fikatas P, *et al.* in their study does recommend a conventional approach for type 1 and a laparoscopic approach for type 2 Nuck's hydroceles. Type 3 has to be evaluated individually and managed either way depending on the surgeon's skills [1].

Conclusion

Hydrocele of canal of Nuck is a rare condition and it is commonly diagnosed in younger girls or young adult women. We may find

this condition in older women above 60 years of age. Hence, hydrocele of canal of Nuck should always come in differentials for groin swelling in females of any age group. Type I hydrocele of canal of Nuck is treated with open exploration and hydrocelectomy.

Conflict of Interest

No conflict of interest.

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