Cyst of the canal of Nuck in non-reproductive adult women patient; a case report

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ABSTRACT

Introduction

The Nuck duct cyst (NCC) was initially documented by Anton Nuck in 1961 in a female patient. NCC is a rare condition in adult women, and its exact incidence is unknown. A small number of case reports have been documented in the literature.

Case report

This case report presents a 70-year-old female patient who underwent a conventional mass excision after being diagnosed with a cystic mass in the right inguinal region. The surgical specimen of the patient was histopathologically diagnosed as NCC.

Conclusion

Although NCC is typically diagnosed peroperatively, it is frequently misdiagnosed preoperatively as an inguinal hernia. Hence, the utilization of radiological imaging techniques is advised to facilitate treatment planning and differential diagnosis. NCC should be considered in the differential diagnosis, particularly in the context of inguinal region pathologies during the reproductive period, given that all of the patients in the aforementioned case reports in the literature are female in their reproductive years. NCC should remain in the differential diagnosis of inguinal region pathologies in elderly female patients in the non-reproductive period, given that the patient in this case report is in the non-reproductive period, in contrast to most patients described in the literature.

Keywords

Nuck cyst; inguinal; hernia; non-reproductive.

INTRODUCTION

The Nuck duct cyst (NCC) was first description by Anton Nuck in 1961 in a female patient [1,]. In the medical literature, it is referred to by various names such as Nuck duct cyst, Nuck hydrocele duct, Nuck cyst and female hydrocele. Etiology is not clearly known. It occurs more commonly in adult females and, to a lesser extent, in infants and postpubertal girls. The clearly defined pathogenesis involves the open processus vaginalis [2]. In girls, the Nuck canal typically closes within the first year of life. When it remains open, it may cause hydrocele or herniation of intra-abdominal structures through the patent Nuck canal. NCC is rare developmental anomaly affecting women, has been documented in a small number of case reports [3]. While it has been reported that 9-11% of premature infants experience Nuck hydrocele or inguinal hernia, the exact incidence in adult women remains unknown [4, 5].

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In light of the literature, the clinical manifestations, diagnosis, and treatment strategy of a 70-year-old female patient with NCC have been discussed in this case report. We believe that the patient in this case report is one of the oldest female patients diagnosed with NCC in the non-reproductive period.

CASE REPORT

The focus of this case report was a 70-year-old female patient who was diagnosed with NCC. The patient presented with a medical history indicating that she had been experiencing swelling in her right groin for about two decades. Pain has been a reported symptom for the past two years and has been accompanied by an increase in swelling. During the patient's physical examination, a soft, well-defined mass measuring around 7x8 cm was identified in the right inguinal region. The reduction to mass with palpation was not possible. The valsalva maneuver did not reveal any sign of a hernia. The diagnostic abdominal computed tomography (CT) revealed the presence of a cyst in the right inguinal canal, with a dimension of 100×65 mm. Figure 1 illustrates the abdominal CT image of the patient.

Figure 1. Abdominal CT image of patient

Surgical intervention was determined to be the most appropriate plan for treatment regarding the diagnosis of an inguinal canal cyst and the patient's intense pain symptoms. The patient's preoperative laboratory tests were normal. Complete excision of a well-defined cystic lesion, with dimensions of approximately 10x9 cm, was performed via a right inguinal incision under spinal anesthesia. Figure 2 and Figure 3 depict the peroperative image of the patient and the surgical specimen, respectively.

Figure 2. Peroperative image of the patient

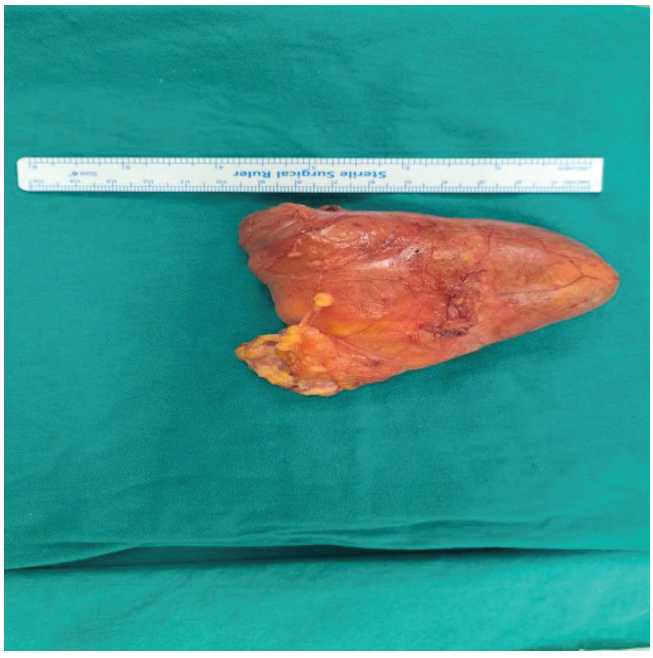

Figure 3. Image of the surgical specimen

The patient was discharged on the first postoperative day without any complications. The histopathological examination of the specimen was reported as a Nuck cyst.

DISCUSSION

NCC is usually detected in girls in the first 5 years of life. While the precise incidence rate among adult women remains unknown, Prodromidou et al. [3] reported that the literature documented the condition in 16 adult women until 2020 [4]. All sixteen of these patients were reported to be of reproductive age, with an average age of 38.15 years. The patient's age in this case report was 50 at the time of the first symptom and 70 at the time of diagnosis. Consistent with the findings of Prodromidou et al. [3], our literature review determined that the patients described in the case reports were not older than 44 years [2, 6]. According to these findings, most of NCC patient documented in the scientific literature is of reproductive age. In patients during the non-reproductive period, it has been documented with a lower incidence in the literature [7, 8]. The patient in this case report is reported as one of the patients in the non-reproductive period that is less frequently reported in the literature. Consistent with our literature review, we conclude that the patient described in this case report is among the oldest non-reproductive patients in whom rare NCC was identified.

NCC is classified into 3 types: Type 1, 2 and 3. Isolated cystic masses of type 1 mimic a direct hernia and have no connection with the peritoneal cavity. The peritoneal cavity is the site of type 2, which is associated with an indirect hernia. Type 3 is the combined type [1, 5]. In this case report, the patient was classified as having Type 1 NCC due to the absence of any evidence of its association with the peritoneal cavity during peroperative exploration; cyst excision was the only procedure performed.

The diagnosis of NCC is only confirmed intraoperatively, as it is frequently misdiagnosed as an inguinal hernia. Therefore, preoperative imaging techniques are important for accurate diagnosis and treatment planning. USG is the imaging method of first choice due to its low cost and widespread availability. For additional investigation and in more complicated cases, computed tomography (CT), magnetic resonance imaging (MRI), or a combination of the two may be required [1, 3]. In this case report, USG and CT were utilized for diagnostic purposes on the patient. Based on clinical and sonographic suspicion of direct inguinal hernia and her asymptomatic status, she was observed for a long time without any treatment. An abdominal CT scan identified a cystic lesion in the inguinal canal in association with the patient's pain symptoms; therefore, surgery was scheduled as a treatment option. In the differential diagnosis, hernia, lymphadenopathy, abscess, Bartholin's cyst, neurofibroma, lipoma, liposarcoma, sarcoma, leiomyoma, endometriosis, Burkitt lymphoma, and posttraumatic/postoperative hematoma should be considered [3, 9].

Surgery is the treatment method for NCC. Surgical open or closed cyst excision and hernia repair with or without mesh are recommended if a hernia is present [1, 3]. Open surgery was conducted on the patient described in this case report due to the suspicion of an NCC cyst on preoperative CT and because of the absence of any intra-abdominal relationship detected radiologically. As no hernia was identified during the operation, cyst excision was the only surgical procedure conducted.

Conclusion

Its exact incidence is unknown, but NCC is uncommon among adult women. A small number of case reports have been documented in the literature. Although NCC is typically diagnosed peroperatively, it is frequently misdiagnosed preoperatively as an inguinal hernia. Hence, the utilization of radiological imaging techniques is recommended to facilitate treatment planning and differential diagnosis. NCC should be considered in the differential diagnosis, particularly in the context of inguinal region pathologies during the reproductive period, given that most of the patients in these case reports in the literature are female in their reproductive years. However, the literature presents patients during the non-reproductive period less frequently, and the patient in the study in this case report is among the oldest patients during that period to have NCC detected. NCC should not be ignored as a potential differential diagnosis for pathologies affecting the inguinal region in non-reproductive elderly female patients.

Conflict of interest: None

Author contributions

Ugur Kesici: Study design, analysis, and interpretation, writing the article, critical revision of the article, and literature review.

Mehmet Guray Duman: Data Collections, Literature Review, English Editing.

Mustafa Ayvazoglu: Data Collections, Literature Review.

Orhan Yalcin: Analysis, Critical Revision of the Article, and Literature Review.

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