VIA MEDICA

CASE REPORT

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A rare case report on bilateral scrotal lipoma — the largest tumor in Vietnam

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ABSTRACT

Scrotal lipoma is benign and still, one of the rarest cancers, with very few cases previously reported in the world. The exact pathogenesis of lipomas remains unknown. Scrotal lipomas can be classified into three categories based on their origins: scrotal lipoma, spermatic cord and tunica vaginalis tumor, and primary scrotal lipoma. The disease may be misdiagnosed or diagnosed inaccurately. We present a case of a 46-year-old male with a giant bilateral scrotal lipoma presenting as scrotal swelling and discomfort, which was first diagnosed as an inguinal hernia. Computed tomography, ultrasound, and fine needle aspiration were performed and aroused a suspicion of lipoma. An operation was performed, and the tumor was completely excised and histologically confirmed as a lipoma. To our knowledge, this is the largest scrotal tumor reported in Vietnam, which led to not only diagnostic but also treatment challenges. Therefore, it is significant to report similar cases that can help clinicians diagnose and handle such tumors in a timely manner.

Keywords: liposarcoma, inguinal hernia, scrotal lipoma, tumor

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Introduction

Lipomas are one of the most common benign mesenchymal tumors, and they vary in size. When the diameter of a lipoma is at least 10 cm, it is considered a giant lipoma [1]. A giant scrotal lipoma is a rare manifestation so making a correct diagnosis is challenging [2, 3]. Radiological examination has an important role in preoperative diagnosis and surgical planning [4]. Surgical resection is the best treatment of scrotal lipoma and postoperative pathologic diagnosis is necessary [5, 6]. Here, we report a rare case of a 46-year-old male patient with a giant lipoma in the bilateral scrotum measuring 30 × 10 cm.

Case presentation

A 46-year-old male presented with a rapid scrotal enlargement over a period of 3 months. Earlier, the patient's clinical presentation appeared to a bilateral inguinal hernia. At that time, he refused any treatment. However, in the following 3 months, both sides of his scrotum rapidly enlarged. The patient reported no associated symptoms. He had no history of surgery, scrotal trauma, tuberculosis, or other relevant diseases and denied any family history.

On examination, double 30 × 10 cm, slightly moveable, solid masses were palpated in the scrotum. They were painless, lobulated, and had no skin changes or

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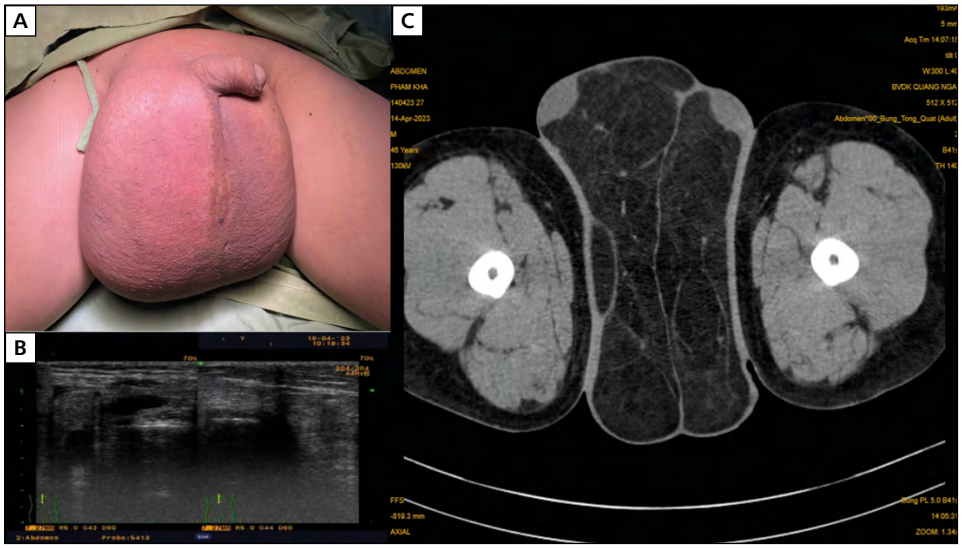

Figure 1. Clinical aspect, ultrasound and computed tomography (CT) images of the tumor; **A.** Visible scrotal mass; **B.** Ultrasonography showed a slightly higher echogenic mass; **C.** CT scan revealed multilobulated fatty mass in the scrotum

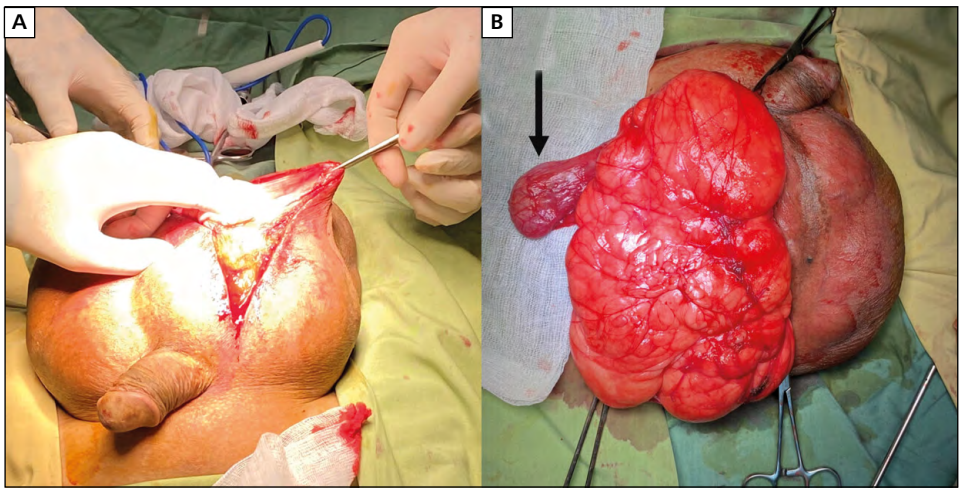

Figure 2. Scrotal exposure and operative picture; **A.** Longitudinal incision on the right hemiscrotum; **B.** Multilobulated fatty lipomas that squeezed the testis; black arrow — right testis

negative light transmission test. No testes and spermatic cords were palpated (Fig. 1A).

Complete blood count (CBC), human chorionic gonadotropin (HCG), and alpha-fetoprotein were normal. A scrotal ultrasound examination revealed a giant extra-testicular homogenous echotexture of fat (Fig. 1B). Computed tomography showed a multilobulated fatty mass in the scrotum suggestive of a lipoma (Fig. 1C). A fine needle aspiration (FNA) was performed and showed mature adipocytes.

The patient was counseled and subsequently underwent open lipoma excision under endotracheal anesthesia. Longitudinal incisions on the right and left hemiscrotum were made to expose the tumors (Fig. 2A). The multilobulated fatty lipomas that squeezed the bilateral testes and spermatic cord were isolated and excised (Fig. 2B). Excess skin was removed. Wounds were closed in layers with 2.0 vicryl sutures, and skin was closed with 3.0 vicryl sutures. The patient recovered well without complications and was discharged from the hospital one week later.

The postoperative excised mass was sent for testing. Macroscopic examination reported two light yellow defined tumors with slight fibrous capsules. The measurements were 33 × 12 × 4 cm and 9 × 28 × 4 cm and weighed 2300 g (Fig. 3A). Microscopically, the tumor was composed of matured adipocytes of typically uniform size arranged in lobules separated by fibrous

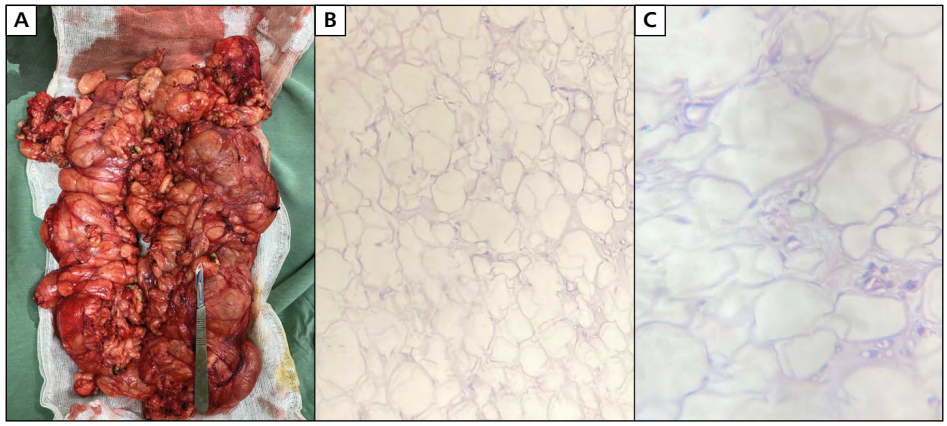

Figure 3. Pathological examination; **A.** Macroscopic examination; **B.** Matured adipocytes arranged in lobules surrounded by fibrous membranes (HE-stained section); **C.** Matured adipocytes

membranes (Fig. 3B, 3C). Based on pathologic and immunohistochemistry results, the tumor was diagnosed as a giant bilateral scrotal lipoma (Fig. 4).

Discussion

Lipomas are mesenchymal tumors that are composed of fat tissue [7]. They are typically painless, mobile, and palpable under the skin. They can arise in any part of the body, but the scrotum is still a rare location, especially a giant scrotal lipoma. The exact pathogenesis of lipoma remains unknown. Nonetheless, trauma and cytogenetic mutations have been hypothesized as causes [7–9]. Approximately, 55–75% of solitary lipomas have cytogenetic abnormalities involving *HMGA2* gene rearrangements [10].

Diagnosis of scrotal lipoma can be difficult because of similar clinical presentations with such conditions as hydrocele, varicocele, or inguinoscrotal hernia [11]. Liposarcoma should be considered in patients with rapidly growing or giant tumors [12]. A giant lipoma is defined as a lesion that measures at least 10 cm in one dimension or weighs a minimum of 1000 g [1]. Early diagnosis and treatment can significantly improve the prognosis.

Histopathology is the gold standard for diagnosing lipoma, and consequently excised mass should be well examined by a pathologist. Lipomas are composed of adipose and are surrounded by a thin, fibrous capsule that is not attached to the underlying muscle fascia [7]. In their atypical form, they present a diagnostic challenge. Genetic testing to rule out liposarcoma after tumor resection should be performed. Surgical excision has been the mainstay treatment for scrotal lipoma. However, reduction surgery may be chosen in difficult cases or to alleviate the patient's symptoms. Guidelines do not recommend prolonged follow-up given the rarity

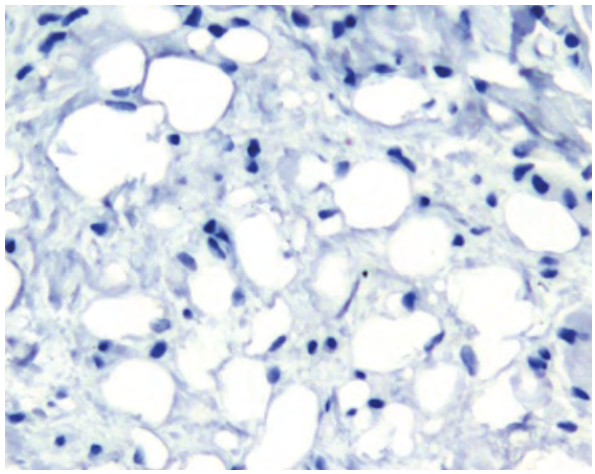

Figure 4. CDK4 immunohistochemistry staining. CDK4 is positive in the majority of lipomas

of the disease [13]. However, long-term follow-up is necessary in the case of reductive surgery or suspicion that a lipoma can recur.

The scrotal lipoma in our patient extended superiorly into the inguinal canal, inferiorly to the perineum and external anal sphincter muscle, so a long longitudinal incision was made to expose the tumor better. The tumor grew rapidly (over 30 cm in 3 months), so liposarcoma was suspected. Postoperatively, a pathologic examination revealed a typical lipoma. The patient was discharged one week after the operation and followed up in an outpatient clinic.

Conclusions

Scrotal lipoma is uncommon, and it may look like an inguinal hernia. Whenever lipoma is diagnosed, entry excision should be performed and sent for

histopathological examination to rule out atypical features or malignancy. Lipoma patients can relapse even after several years.

Article Information and Declarations

Ethics

The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All procedures performed in studies involving human participants were in accordance with the ethical standards of the Ethics committee on biomedical research, Quang Ngai provincial general hospital , Quang Ngai, Vietnam. Written informed consent was obtained from the patient.

Author contributions

C.T.N.: diagnose and surgery, writing original draft, writing-review and editing; N.H.N.: writing original draft, writing-review and editing; V.N.H.: writing-review and editing; N.T.P.: diagnose and surgery, writing original draft; T.C.N.: diagnose and surgery, writing original draft.

All authors have read and agreed to the published version of the manuscript.

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Conflict of interest

The authors have declared that no competing interests exist.

Supplementary material

None.

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