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Scrotal Elephantiasis in a 14-year-old Child

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Abstract **Case Report**

Background: Scrotal elephantiasis is a rare condition, especially in non-endemic regions. This case is novel due to its presentation in a young patient without infectious or hereditary causes, highlighting the need for awareness and tailored surgical approaches in similar scenarios. ***Case Presentation:*** A 14-year-old male presented with an 11-year history of progressive scrotal enlargement, causing significant physical impairment. Clinical examination and ultrasound confirmed scrotal elephantiasis. Surgical resection and reconstruction were performed, involving excision of excess tissue and subsequent scrotal reconstruction. Postoperative care included wound management and physiotherapy. The patient recovered well, with satisfactory aesthetic and functional outcomes, allowing a return to normal activities. ***Conclusion:*** This case underscores the importance of early diagnosis and individualized treatment strategies for scrotal elephantiasis. It demonstrates that successful surgical intervention can significantly improve quality of life in pediatric patients, providing a reference for similar cases in non-endemic regions.

Keywords: Hypertrophy, Pathological scrotal skin, Reconstruction.

INTRODUCTION

Scrotal elephantiasis is a disease rarely seen outside the tropical areas of Africa, Asia, Central and South America. Unlike these endemic regions, where the disease is mainly caused by filariasis, in developed countries it is usually secondary to other non-infectious or rarely hereditary conditions.

CASE PRESENTATION

A fourteen-and-a-half-year-old child, presented with an eleven-year history of progressive scrotal enlargement.

The patient presented with a significant physical handicap, still having difficulty walking when the lymphedema began to worsen, He had no other medical problems.

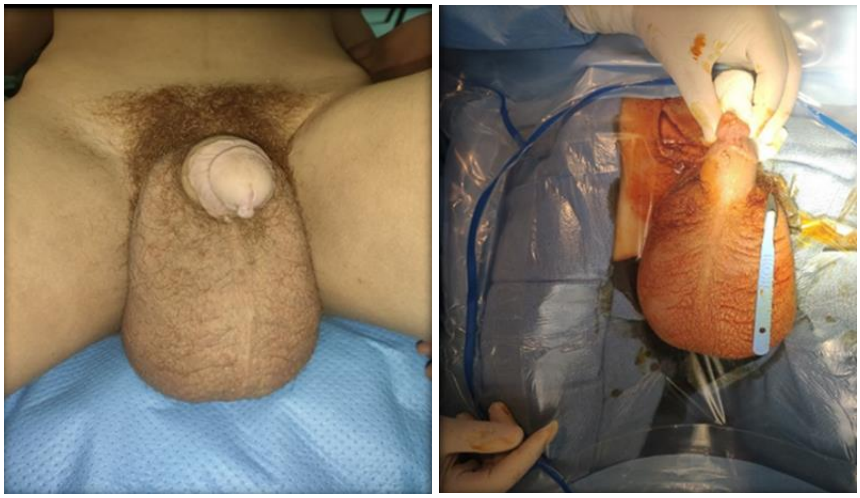
He had initially been under dermatological care since the age of 3, treated with extencilline. On examination, he presented with massive hypertrophy of the scrotum extending to the thighs. The scrotal skin was thickened and edematous. Its size was 13 cm x 6 cm, there was a pronounced worsening of the skin thickening on the left hemiscrotum. The testes were identifiable, and hispenis was swollen. No inguinal adenopathy was noted. The perineal area was not affected (**Figure 1**(a) (b)).

The diagnosis of scrotal elephantiasis in this case was likely confirmed through a combination of clinical examination and imaging studies. We only did the scrotal ultrasound which showed a bilateral hydrocele of low abundance with infiltration and diffuse regular thickening of the scrotal tunics reaching 15 mm in thickness.

The child underwent scrotal resection and reconstruction typically involve a combination of surgical techniques aimed at removing excess tissue and restoring the anatomy and function of the scrotum as much as possible. Here are the surgical techniques that were employed: Excision of excess tissue contributing to scrotal hypertrophy. This involves carefully excising hypertrophied and fibrotic tissues while preserving as much healthy tissue as possible, with the removal of large masses of tissue in stages to minimize the risk of complications and to reduce the size of the scrotum before reconstruction.

The challenges encountered during the surgical procedure include limited surgical access, excessive swelling, and distortion of anatomical landmarks. These are managed through careful planning to reconstruct a high-quality scrotum following excision of fibrotic tissues, the second issue is intraoperative bleeding controlled by electrocauterization and vessel ligation.

The scrotum was reconstructed using the remaining scrotal tissues after excision. Adequate wound drainage and wound care were performed postoperatively to prevent complications such as infection and seroma formation.



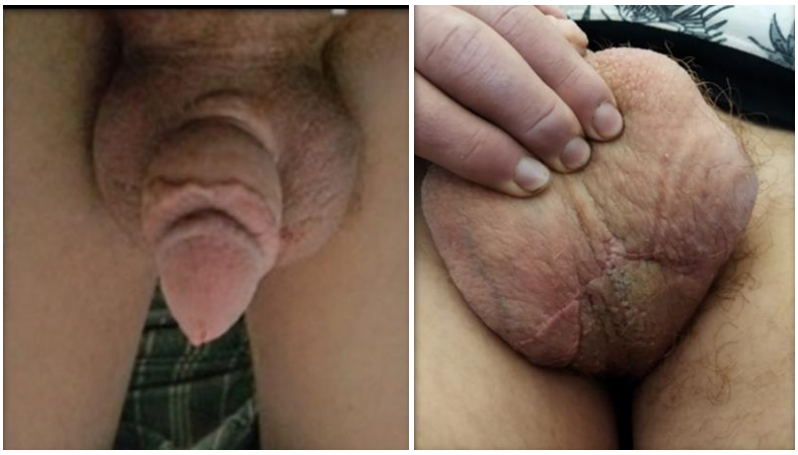
(a) (b)

Figure 1: (a) (b) Preoperative images of the scrotum measuring 13 cm x 6 cm

The patient did not experience any complications after the surgery except for pain managed by analgesics. He was kept hospitalized for 7 days under antibiotic therapy and wound care, with the suction drain removed 48 hours post-surgery. Microscopic findings included areas of epidermal thickening, smooth muscle hyperplasia, dermal fibrosis and edema with chronic inflammation.

The follow-up period after the surgery was 3 months, with satisfactory aesthetic and physical outcomes, **(Figure 2. (a) (b))**. Allowing a return to sporting activities within 6 months without any physical discomfort, the non-surgical treatment modality was considered: bandages to reduce swelling and improve lymphatic drainage in the affected area, along with therapeutic exercises and manual lymphatic drainage techniques.

The physiotherapy and rehabilitation after surgery have been considered for this patient, encompassing appropriate wound care. This includes regular dressing changes, wound inspection, and monitoring for any signs of complications. Mobility and joint mobility exercises, compression garments, pain relief exercises, patient education about their condition, the surgical procedure, and self-care techniques, gradual return to physical activities, as well as psychological support, are also part of the plan.



(a) (b)

Figure 2: (a) (b) Clinical image showing the result after 3 months of surgery

There is existing literature and guidelines regarding the management of scrotal elephantiasis that could have informed the treatment approach in this case. These resources typically cover various aspects of the condition, including its etiology, diagnosis, and management strategies. Depending on the specific circumstances of the patient and the healthcare provider's preference.

DISCUSSION

Scrotal elephantiasis is characterized by the presence of a protein-rich fluid effusion in the scrotum and penis. It often affects males. In some cases, the lower limbs may also be affected [1]. The etiology may be primitive (idiopathic), due to irreversible congenital dysplasia of the scrotal lymphatic system [2, 3]. It may be secondary (acquired) to bacterial infection or parasitic infection (filariasis) in filarial-endemic countries, inducing ductal obstruction, Intrinsic or extrinsic lymphatic obstruction due to: abdominal or pelvic carcinological surgery, radiotherapy, chronic inflammatory disease or after chronic venous stasis [4, 5]. Continuous ambulatory peritoneal dialysis or previous trauma may also be the cause of scrotal lymphedema [6].

Clinically, penoscrotal involvement is the most frequent, with an enlarged scrotum that can reach significant dimensions, leading to burial of the penis [7].

Paraclinically, ultrasound and CT scans determine an extrinsic obstructive origin of the vessels. Vascular Doppler shows lymphatic dilatation and, in the case of filariasis, objectivizes parasites [8]. Other biological tests can be used to detect chlamydia or microfilariae in the blood [9].

Therapeutically: the aim of treatment is to ensure function and manage aesthetic damage. Treatment is based on surgery, which may be omitted if there is an absolute contraindication to surgical intervention. It involves wide resection of tissues infiltrated by edema. Healing can be monitored in the clinic, but is slow and prolongs hospital stay. Ideally, the remaining tissue should be covered, with or without an autologous skin graft, or even the use of local flaps [10].

Progress is usually satisfactory, but there is always a risk of recurrence due to persistent or recurrent lymphatic obstruction. Prevention involves protecting the site of infection by daily washing of the affected limb. Simple exercises to promote lymphatic drainage can be followed, based on elevation of the limbs and physical exercise, as well as wearing suitable footwear [11].

CONCLUSION

Scrotal elephantiasis is a rare condition. It is diagnosed clinically, and radiological investigations are used to rule out a secondary cause. Treatment is always surgical, with a wide plasty of the pathological scrotal skin and sometimes a scrotal plasty using two postero lateral scrotal flaps, providing a good functional and aesthetic result.

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