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Trauma and reconstruction

Successful surgical treatment of giant scrotal lymphedema associated with Hodgkin's lymphoma: A rare case report

Abdulrahman Binjawhar [a,*], Hossam S. El-Tholoth [a], Ebtehal Mohammed Alzayed [b], Abdulmajeed Althobity [a]

[a] Urology Department, Prince Sultan Military Medical City, Riyadh, Saudi Arabia
[b] Plastic Surgery Department, Prince Sultan Military Medical City, Riyadh, Saudi Arabia

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ABSTRACT

Scrotal lymphedema is a rare disease, caused by obstruction of the lymphatic vessels draining into the scrotum, and may be induced by malignant lymphoma.

A 27-year-old male, who was treated for Hodgkin's lymphoma, presented with scrotal swelling for 3 years. We observed huge scrotal swelling with extension to the suprapubic region and lower right limb, a significantly thickened scrotal wall, and nonpalpable testes. The patient underwent scrotal lymphedema excision followed by surgical scrotal and penile reconstruction.

Treatment of scrotal lymphedema is challenging. However, we were satisfied with our surgical result. Our patient experienced both physical and psychological improvements.

Introduction

Scrotal lymphedema is a rare disease that occurs when the lymphatic vessels draining to the scrotum become obstructed or are hypoplastic.[1] This condition can result in significant limitations to physical activity and psychological distress in the affected patients.[2]

Scrotal lymphedema is most commonly caused by filariasis but may also be induced by radiation, neoplasms, or granulomatous diseases.[1,2] Specifically, malignant lymphoma has been observed to cause lymphedema.[3] We herein describe the case of a giant scrotal lymphedema in a patient with Hodgkin's lymphoma.

Case Presentation

A 27-year-old male, known to be in remission for Hodgkin's lymphoma following chemotherapy treatment, presented to our urology clinic complaining of huge scrotal swelling that had persisted for 3 years. This swelling was progressive, had limited his physical activity, affected his social life, and negatively impacted his mood. The patient revealed no history of either travelling to a filariasis endemic region or undergoing radiation and did not report any lower urinary symptoms. The patient's body mass index was measured at 34 kg/m^2. Upon physical examination, we observed huge scrotal swelling with extension to the suprapubic region and lower right limb, a significantly thickened scrotal wall, nonpalpable testes, a buried penis, no tenderness, and no signs of active infection (Fig. 1.) All laboratory values were within the normal limits, except for a mildly low hemoglobin measure of 10 g/dL.

The patient was admitted to our hospital and informed about the option of surgical treatment. Following a referral to the hematology department to rule out any relapse of his past lymphoma. The operation was performed with the patient under general anesthesia in the lithotomy position. The excision limits were then marked, which included all the tissue affected by the disease (i.e., the suprapubic, scrotal, and penile skin up to 1 cm proximal to the coronal sulcus).

Total excision of the lymphedematous tissue began from the suprapubic area, with the skin and underlying fat being removed. During dissection, careful attention was paid to the spermatic cords on each side, which were identified and isolated. The process of excision then proceeded to the penile skin up to 1 cm from the coronal sulcus. This was followed by dissection of the scrotum, using bipolar electrosurgical device, which was excised completely down to the perineum. Each side of the testicles appeared to be affected by hydroceles. Therefore, bilateral hydrocelectomy was performed, followed by scrotoplasty, achieved using the local perineal skin flap that was approximated over the

* Corresponding author.
E-mail addresses: Binjawhar@gmail.com (A. Binjawhar), urologist_hossam@yahoo.com (H.S. El-Tholoth), emz_987@hotmail.com (E.M. Alzayed), au7th@hotmail.com (A. Althobity).

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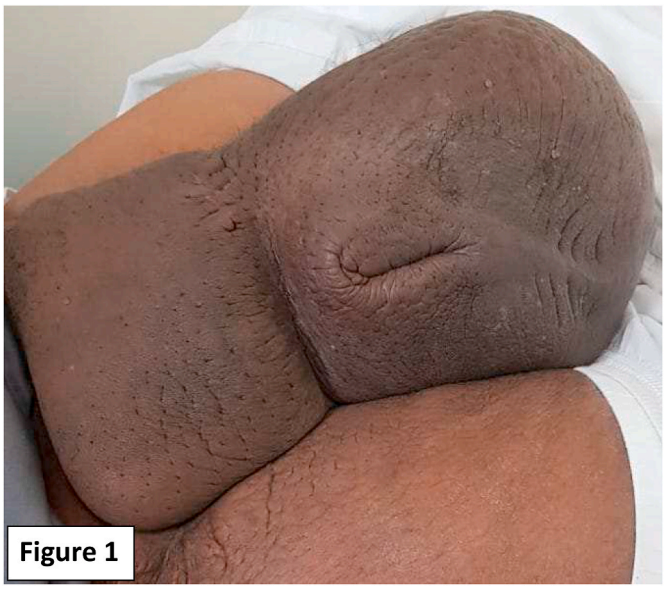

Fig. 1. In the outpatient clinic showing giant scrotal lymphedema and a buried penis, with extension to the suprapubic area and lower right limb.

testicle. In order to allow the suprapubic defect to be covered without creating tension, the abdominal wall was undermined up to the umbilicus and laterally to the anterior superior iliac spine on each side. The penile shaft was then covered using a split-thickness skin graft harvested from the lateral aspect of the upper thigh.

Four drains were applied in total; two in the scrotum and two in the abdominal wall. A Foley catheter had been inserted at the beginning of the procedure, and a pressure dressing was applied to the scrotum, abdominal wall, and penis following the surgery (Fig. 2a and b).

We continued to monitor the drains post-operatively. The dressing was changed, and the Foley catheter was removed after 48 hours. An antiseptic, soft paraffin dressing was applied to the wounds until the patient was discharged. The drains were removed after 72 hours, at which point no drainage output was observed, and the wounds were seen to be healing well with no evidence of infection. The patient was discharged on post-operative day 4, following which the wound dressing was maintained for 10 days.

The patient later returned to our clinic and reported an improvement in his quality of life. Upon examination, the wound appeared to be clean and healed (Fig. 3a and b). Histopathological examination revealed a massive subcutaneous edema and lymphatic vascular ectasia, associated with the fibrosis and fat necrosis that is consistent with lymphedema.

Discussion

Giant scrotal lymphedema can cause great social and physical distress. In addition, the treatment of these cases is often challenging for surgeons. However, surgical excision can be an effective option. The quality of life, penile sensation and sexual intercourse of all patients who underwent surgical treatment improved greatly.[4,5] Similarly, in our case, the patient's physical psychological, and sexual condition improved significantly following the operation. Using Split-thickness skin graft for penile coverage is better than flaps, which alter penile sensation and erection.[5] In a retrospective study, wound dehiscence was the most common complication, followed by recurrence of edema.[4]

Surgical excision was definitely warranted in our case, as the histopathological examination revealed subcutaneous fibrosis. Previous studies have determined that when the lymphedema shows subcutaneous fibrosis, conservative management usually fails, and surgical excision is needed.[1]

This fibrosis may have occurred due to the patient's history of

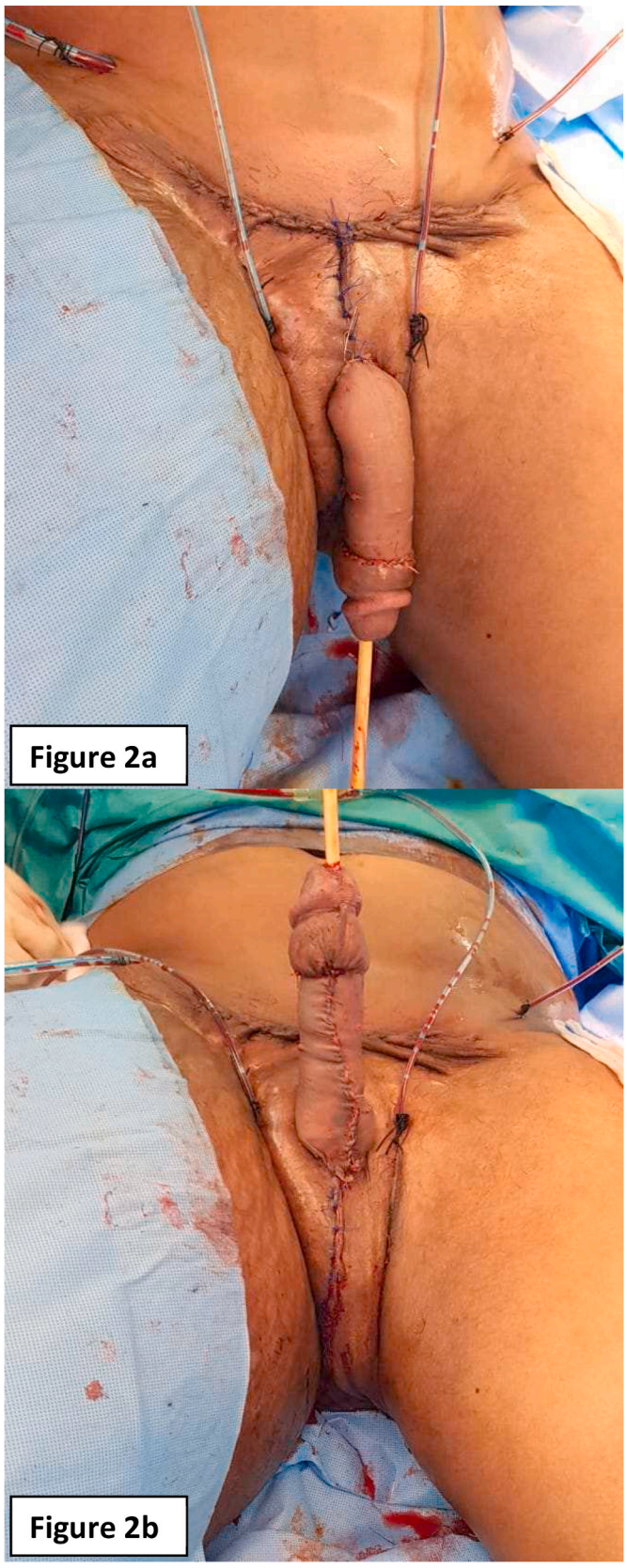

Fig. 2. 2a, 2b. Intraoperative image taken following scrotal lymphedema excision with both the perineal skin flap and split-thickness skin graft, which was harvested from the lateral aspect of the upper thigh.

Fig. 3. 3a, 3b. Post-operative image taken 6 weeks after the surgery.

Hodgkin's lymphoma. Usually, scrotal lymphedema is caused by filariasis but can also result from malignant lymphoma, as observed in this case. As a consequence of lymphostasis and lymphotention, fibroblasts increase the production of collagen and macrophages and lymphocytes can accumulate, resulting in edema, subdermal fibrosis, and dermal thickness.[2]

Conclusion

Scrotal lymphedema is a distressful condition, which is treated by challenging surgery. Despite these challenges, we herein describe a successful surgical result. Our patient was also pleased with the outcomes and experienced improvements both physically and psychologically.

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Declaration of competing interest

The authors have no conflicts of interest to declare.

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References

1. Pastor C, Granick MS. Scrotal lymphedema. *Eplasty*. 2011;11:ic15.
2. Thejeswi P, Prabhu S, Augustine AJ, Ram S. Giant scrotal lymphoedema – a case report. *Int J Surg Case Rep*. 2012;3(7):269–271. https://doi.org/10.1016/j.ijscr.2012.03.005.
3. Ishii N, Aoki M, Kishi K. Lymphedema of the lower extremities due to refractory malignant lymphoma treated by lymphaticovenous anastomosis. *Plast Reconstr Surg Glob Open*. 2017;5(8):e1475. https://doi.org/10.1097/GOX.0000000000001475.
4. Wisenbaugh E, Moskowitz D, Gelman J. Reconstruction of massive localized lymphedema of the scrotum: results, complications, and quality of life improvements. *Urology*. 2018;112:176–180. https://doi.org/10.1016/j.urology.2016.09.063.
5. Modolin M, Mitre AI, da Silva JCF, et al. Surgical treatment of lymphedema of the penis and scrotum. *Clinics*. 2006;61(4):289–294.