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USE OF NATURALLY EXPANDED PREPUTIAL SKIN FLAP AS A COVER IN PENILE LYMPHEDEMA- A CASE REPORT

Plastic Surgery

Joseph Francis	Senior Resident, Seth G.S Medical College and KEM Hospital, Mumbai.
Kapil Agrawal	Additional Professor, Seth G.S Medical College and KEM Hospital, Mumbai.
Shubhanshu Gaurav	Senior Resident, Seth G.S Medical College and KEM Hospital, Mumbai.
Vidhi Minakin Mehta	Senior Resident, Seth G.S Medical College and KEM Hospital, Mumbai.
Vamseekrishna Maddu	Senior Resident, Seth G.S Medical College and KEM Hospital, Mumbai.
Vinita Puri	Professor, Seth G.S Medical College and KEM Hospital, Mumbai.

ABSTRACT

Genital lymphedema is a perturbing condition affecting the overall quality of life of the affected individual. It is common in tropical countries where infestation with Wuchereria bancrofti is a major cause. Probably due to ignorance, reticence in exposing private parts, the affected individuals often call for help at a later stage of the disease where it would have progressed to chronic phase with fat storage and thickening of fibrous tissue. The involvement is not confined to penis but may extend to scrotum and both lower limbs. We share our experience of management of a case of genital lymphedema in a young adult. In our method the native expanded preputial skin was used to redrape the denuded penis after excision of the fibrous tissue. This ensured better pliability of the skin and avoided unnecessary harvest of split thickness skin graft for wound cover after excision.

KEYWORDS

Penile lymphedema, expanded preputial skin

INTRODUCTION:

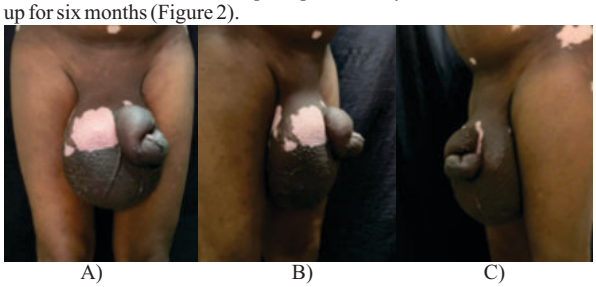
Lymphedema occurs due to abnormal accumulation of lymphatic fluid in soft tissues due to derangement in its drainage. It is classified as primary and secondary. Primary lymphedema is due to the intrinsic abnormality of lymphatic vessels and present at young age. While secondary lymphedema, may occur after surgery, radiation, tumors, and infections. In tropical countries, infection by Wuchereria bancrofti, a human parasitic roundworm, represents the most frequent etiology, followed by postsurgical lymphedema(1). Distal swelling in extremities, restricted range of motion, tissue changes, skin discoloration, pain, altered sensations, limb heaviness and difficulty in fitting into clothes are included in the symptomatology.

Lymphedema of the penis and scrotum produces mobility and voiding limitations, fatigue, pain, and recurrent subcutaneous infections due to the difficulty of self-hygiene. It also causes sexual limitations, social isolation, and impaired quality of life(1). This case report intends to share our experience and to reiterate the need to safeguard and utilize the native expanded inner preputial skin for aesthetically pleasing closure.

CASE REPORT:

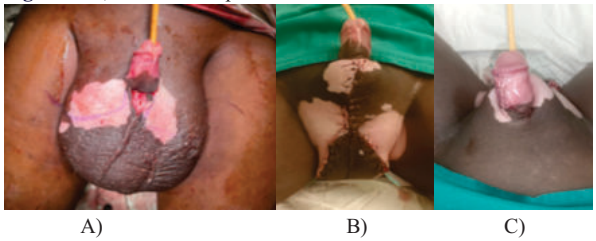
A 35-year-old individual presented with four years of progressive swelling involving the scrotum and penis. He was highly dissatisfied with the appearance of his external genitalia and expressed concerns about being not able to participate in sexual intercourse. He complained of inability to pass urine in a straight stream, and the weight of the genitalia was perturbing. A history suggestive of acute inflammation was present in the initial years. Later he developed a bend in his penis and nodular appearance of scrotum. On examination, the scrotum was grossly enlarged with distal penis and glans folded in a cephalad and left lateral direction. Multiple nodules were present on the scrotum and proximal penis. The urethral meatus was buried within the folds of prepuce. The preputial skin was relatively pliable compared to proximal penile skin. Bilateral testes were palpable. Multiple hypopigmented patches were present on scrotum and all the limbs and trunk. (Figure 1)

The patient was prepared for debulking of the chronic lymphedema. A 14 French Foley's catheter was passed. The junction of external involved skin and uninvolved preputial skin was identified, marked and an incision was made. When the external soft tissue of the penis hypertrophies due to lymphedema the inner preputial skin, which is usually uninvolved also stretches and expands with it. Lymphedema tissue was removed, and the expanded preputial skin was retracted proximally and draped over the denuded penis as preputial flap cover. Debulking of the scrotal fibrofatty tissue was done by removing a wedge of tissue and defect primarily sutured (Figure 3). No skin grafts were used. Corrugated rubber drains were inserted while closure. First check dressing was done after 48 hours and the drains were removed on 5th postoperative day. Urinary catheter was removed on 7th postoperative day. Post-operative scrotal support and compression bandages on penis were used for two weeks postoperatively. Suture removal was done on the 14th postoperative day. Patient was followed up for six months (Figure 2).



A) B) C)

Figure 1: A, B and C: Preoperative views



A) B) C)

Figure 2: A, B and C: Postoperative views

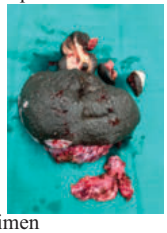


Figure 3: Resected Specimen

At the 6-month follow-up visit, the patient was satisfied with the appearance of his external genitalia. The urinary stream was straight. Although he had not performed sexual intercourse, he was satisfied with the erection achieved.

DISCUSSION:

Genital lymphedema is an accumulation of lymph in the superficial lymph vessels between the skin and fascia (Colles fascia in the scrotum and Buck's fascia of the penis)(2). Secondary lymphedema occurs when the lymphatic flow is interrupted or hindered due to damage or resection of the lymph nodes during surgical procedures, granulomatous disease, Paget's disease of the scrotum, Down syndrome, infection, and radiation, among others(3)(4). Infection is the most frequent etiology, usually as a result of lymphogranuloma venereum or an infestation by Wuchereria bancrofti filaria, which can account for 20% of the cases of the male population in tropical countries(5).

Involvement of the penis causes difficulty in voiding and leads to a poor stream, splaying of stream, and difficulty in performing sexual intercourse because of inability to penetrate(6). Wetting of the scrotum by urine or chyle is responsible for poor hygiene that perpetrates local infection and propagates cellulitis and/or lymphangitis(7)(8). Treatment with anti-filarial therapy during early phase will help prevent progression of the disease. Use of compression garments, stockings will decrease the deleterious effects of edema as well. Lymphovascular anastomosis and vascular lymph node transfer also give promising results.

Once the fibrosis occurs debulking seems to be the mainstay of treatment. Excision of the entire fibrous tissue is necessary to give a satisfactory outcome. Split thickness skin grafts (STSG) after excision is a valuable option for resurfacing. However, patients whose shaft was covered with preputial skin reported better penile sensitivity than those whose penile shaft was covered with an STSG(6,9–12). When the external soft tissue of the penis hypertrophies due to lymphedema the inner preputial skin,which is usually uninvolved also stretches and expands with it. Additionally, the prepucial flap used to cover the distal penile shaft does not cause pain during erection(13). The inner preputial skin is an ideal option to be utilized as a cover to redrape the shaft of the penis after excision of fibrotic tissue. It gives patient satisfaction and better aesthetic outcome.

CONCLUSION:

This case reiterates the need to use the native expanded preputial skin as flap for resurfacing the defect following denudation of penile lymphedema. It bestows a smooth and natural appearance to the penis, promotes faster healing and reduces hospital stay.

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