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MORBID MANAGEMENT OF ELEPHANTOID LEG, SCROTUM AND PENIS

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SUMMARY
Lymphatic filariasis is a neglected tropical disease. 15 million patients are suffering from elephantoid leg, scrotum and penis. They require morbid management. We present a case of an elderly patient suffering from huge elephantiasis of lower extremity, scrotum and penis. The diagnosis was confirmed by lymphoscintigraphy and circulating adult filarial antigen (OG_4C_3) test. Antibiotic therapy at regular intervals and surgical treatment helped the patient to lead a normal life.

BACKGROUND

The world Health Organization (WHO) has identified lymphatic filariasis as the second leading cause of permanent and long-term disability in the world after leprosy. The chronic or advanced disease has significant morbidity. The total Disability Adjusted Life Years (DALYs) lost in India is about 2.5 million.[1] According to the recent WHO bulletin, over 120 million people are infected with the disease and 40 million of them are disfigured and incapacitated. 15 million of patients are suffering from elephantiasis of lower limb, scrotum and penis. They require morbid management. Repeated infection, inflammation, fever and pain incapacitate them to earn their livelihood. Regular administration of long acting penicillin, compression stocking, foot care, and surgery is essential to manage their day to day life.[2]

CASE presentation

A male aged 75 years is suffering from huge elephantiasis of both legs since 25 years. He was completely bed ridden and unable to use the toilet for 20 years. Inflammatory fluid and pus oozed from the legs. He was running high fever. Trophic changes with multiple skin folds, extensive fibrosis, and acanthosis well marked on the legs. Lymphorrhea from the lymph vesicles and nodularity of the skin noticed. The skin was indurated, hyper pigmented with stasis dermatitis. Blunted appearance of the toes marked. Candida infection developed in the toe spaces. Pedunculated nodules were hanging from the thigh and legs. Fat deposits and warty overgrowths developed. The scrotum and penis were hugely enlarged. The penis was buried in between the scrotal swelling. Urine was dribbling and soaking the undergarments. The patient was unable to walk properly due to the huge enlargement of the scrotum between the thighs. The scrotal and inguinal area was unhygienic due to the leakage of urine. Clotrimazole topical lotion applied, but it did not respond due to the continuous wetting with urine. Piperacillin and Tazobactams injection 4.5 gm intravenously administered 8 hourly after sensitivity test for a period of 10 days. Fever subsided. Infection controlled.

The diagnosis of lymphedema was done by lymphoscintigraphy. Scan findings were indicative of severe bilateral lymphatic obstruction. There was minimal ascent of tracer via the lymphatic channel on either side. Few inguinal lymph nodes on the right side and none on the left side visualized. The liver was not visualized even after 2 hours. The OG_4C_3 test which is highly sensitive to diagnose *Bancroftian filariasis* found positive in high titer. The serum level of CRP was 20 times higher before antibiotic administration and became almost normal 15 days after the treatment. The medical treatment continued for 20 years. The recurrent infection and inflammation was under control. Surgery offered the only hope of achieving appropriate reduction in the size of the tissue, and this can sometimes be challenging. The objective of the treatment for filarial lymphedema scrotum and penis was focused on restoring the patient's quality of life by reducing the size of the scrotum and penis through reconstructive surgery. The basic principle of the surgery was to excise the fibrotic lymphedematous tissue. It was important to secure the urethra and both the testes before doing the tissue excision. Postoperative outcome was usually satisfactory to the patient with reduction of scrotal sac and correction of buried penis. The patient could carry his daily activities with better confidence as well quality of life.

SURGICAL TREATMENT

Under spinal anesthesia, the patient was positioned supine, and prophylactic antibiotic was administered. Urethral catheter was passed for urine drainage and to

protect urethra during excision of lymhedematous tissue. The operation was commenced by making an incision over the external inguinal ring bilaterally and deepening it to access the cords that were mobilized and delivered into the wound together with the testes. The incision was extended over the scrotum, and generous excision of all grossly affected peno-scrotal skin and subcutaneous tissues down to the Buck fascia were done, in a modified Charles procedure. The resultant defect on the penile skin was covered by rolling back the uninvolved preputial skin and skin graft along the penile shaft while a new scrotum was fashioned from the apron of normal skin at the scrotal neck that had been stretched by the mass. The tunica vaginalis was everted around the testes before placement in the scrotum, after which the wound was closed over a corrugated drain and scrotal support or elevation done with crepe bandage. Postoperative care involved regular wound dressings, antibiotics, analgesics, and other routine treatment as appropriate.

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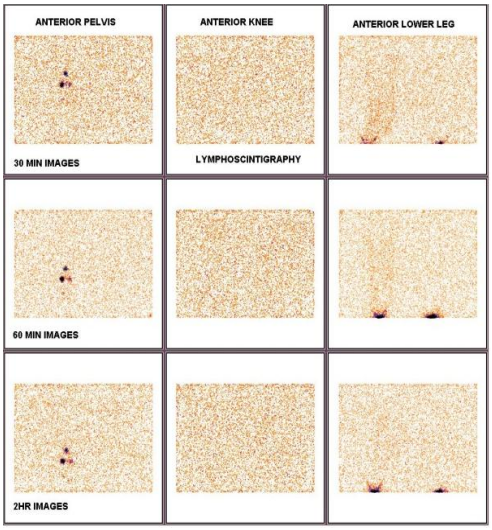
[Fig-1]: Elephantiasis Leg.



[Fig-2]: Bilateral lymphatic obstruction.

[Fig-3]: Before Surgery.

[Fig-4]: After Surgery.

DISCUSSION

Lymphatic filariasis impairs the lymphatic system and can lead to the abnormal enlargement of body parts, causing pain, severe disability and social stigma. The painful and profoundly disfiguring visible manifestations of the disease, lymphedema, elephantiasis and scrotal swelling occur later in life and can lead to permanent disability. These patients are not only physically disabled, but suffer mental, social and financial losses contributing to stigma, discrimination and poverty. There are 40 million disable patients among which 15 million are suffering from elephantiasis of lower extremity and urogenital disorders (especially hydrocele and lymphedema of penis in men) account for a burden of 5.9 million disability-adjusted life years, and a concomitant loss in productivity.[3] The lymphatic system plays an important role for normal immune function in health and disease. Systemic septic infections require

hospitalization and intensive antibiotic therapy. Cephalosporin (4th generation) antibiotics and Linezolid are most commonly prescribed class of antibiotics.[4] Debulking procedures and split skin grafting for late stages of elephantiasis result in nonhealing oozing wound, and Sepsis. One patient had to undergo above knee amputation of the lower limb as a life saving measure due to uncontrollable sepsis.[5] Lymphoscintigraphy is the basic test for assessing lymphatic function of leg. The abnormal test shows dermal backflow as the tracer leaks from the lymphatics. It is a safe and non-invasive technique to visualize structural and functional changes in lymphatic flow after injection of radiotracer.[6] C-reactive protein (CRP) is an acute phase reactant. The level rises in response to inflammation. A rapid fall indicates recovery.[7] OG_4C_3 is a highly sensitive and specific test for diagnosis of *Bancroftian Filariasis*. It is a quantitative monoclonal antibody-based ELISA assessment for circulating filarial antigens in serum, plasma or blood with the use of specific monoclonal antibodies. The blood sample can be taken and tested for infection any time of the day. The antigens persist in microfilaria negative persons for up to 3 years following treatment.[8] [9] Medical therapy is a better alternative to micro lymphatic-venous anastomosis in advance lymphedema of leg.[10] Surgery is essential to give relief to this type of patients suffering from elephantiasis of scrotum and penis. The basic principle of the surgery is to excise the fibrotic lymphodematous tissue. It is important to secure the urethra and both the testes before doing the tissue excision. Postoperative outcome is usually satisfactory to the patient with reduction of scrotal sac and correction of buried penis. The patient can carry his daily activities with better confidence as well quality of life.[11]

CONCLUSION

In filarial lymphedema of penis and/or scrotum, excision of the diseased tissue and covering with a split-thickness skin graft provided good results. If the scrotum is involved, scrotoplasty with lateral and posterior mobilized flaps provides satisfactory results. Currently, lymphedema management is mainly performed by administration of long acting Benzathine penicillin at intervals, compression garments, skin care, and exercise.

Patient's perspective

I am suffering from elephantoid leg, scrotum and penis since last 25 years. All these organs are hugely enlarged for which I am unable to walk normally and urinate properly. I have lost sex life. Recurrent infection, inflammation, fever and pain make my life precarious. I was quite frustrated and lost hope of surviving. After undergoing surgery and regular medicine treatment I am able to lead almost a normal life.

Learning points

- Lymphatic filariasis when become chronic lead to elephantoid leg, scrotum and penis.
- If untreated in early stage it leads to grotesque deformity.
- Huge enlargement of the scrotum make the penis buried resulting in dribbling of urine, soaking of undergarments, and psychosexual abnormality.
- Institution of appropriate treatment and surgery relived the patient of physical morbidity and emotional stress.
- ELISA test to detect circulating adult filarial antigen, (Og_4C_3), help in the diagnosis of Bancroftian filariasis.

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