

# Charles Procedure for Elephantiasis in Lower Extremity: A Rare Case Report from Sanglah Hospital

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## Abstract

**Background:** Elephantiasis is damage of the lymphatic vessels or destruction of lymph nodes that caused by filariasis infection. It was chronic and slowly progressive disease which decrease function and quality of life. There are two alternative approaches for surgery: reconstructive surgery and destructive surgery. The treatment aims to restore function, reduce physical and psychological suffering, and prevent the complication growth. **Method:** In this case report, a 43 years old male presented left lower extremity swelling. Based on clinical examination and investigation the patient was diagnosed with elephantiasis of lower extremity and a surgery will be done by Charles procedure. **Result:** This paper reported a successful Charles Procedure for elephantiasis of lower extremity. Due to the large mass of the tissue, our case was done by two-stage. After healthy granulation tissue is achieved, we planned to do skin grafting. **Conclusion:** Charles procedure is recommended for elephantiasis and can be adjuvant treatment. Although postoperative complication may occur, with the correct multidisciplinary support, significant improvements in function and quality of life can be achieved.

**Keywords:** Elephantiasis, Charles procedure, Debulking

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## 1. Introduction

Lymphedema can be characterized as the tissue fluid aggregation that emerges as a result of impeded lymphatic seepage. Lymphedema typically influences in the arm or leg; its belongings can appear in other organ (Szuba and Rockson, 1998). Harm of the lymphatic vessels or annihilation of lymph hubs (optional lymphedema) is the pathogenesis of lymphedema. Essential lymphedema happens from weakened or underlying and utilitarian of the lymphatic vessel. Auxiliary lymphedema typically came about because of disturbance or hindrance of the lymphatic pathways by medical procedure or other sickness processes (Xu, 2008).

The phases of lymphedema in view of The Worldwide Society of Lymphedema: stage 0 (non-noticeable, dormancy), stage 1 (unexpectedly reversible), stage 2 (suddenly irreversible), and stage 3 (lymph static elephantiasis) (Hague et al., 2020; Xu, 2008). The normal term utilized for lymphedema brought about by filariasis contamination is elephantiasis. Elephantiasis is a condition where persistent lymphoedema advances to dermatosclerosis, profound skin folds and papillomatous lesion (Gupta et al., 2018). It can cause immobilization of the patient and the subsequent driving reason for long haul incapacity and financial results on the planet. Treatment objective is to reestablish work, diminish physical and mental misery, and forestall the improvement of inconvenience. The last decision of treatment is a medical procedure. There are two elective methodologies for medical procedure: reconstructive medical procedure and horrendous surgery (Wollina et al., 2014). This paper revealed a fruitful Charles System for elephantiasis of lower limit.

## 2. Case Report

A 43 year old male patient introduced bit by bit moderate enlarging in the left leg since 18 years. The side effects at first went before by the presence of a dark spot in the left lower leg, it happened when a patient got a fever. It was hard for the patient to do day to day exercises when he created agony and ulceration in the enormous expanding since long term. On actual assessment, left leg enlarging from inguinal to pedis non pitting edema, the skin fosters a cobble-stone surface example and hyperkeratosis. His heart, lung, stomach, and neurologic test were ordinary.

The consequences of examinations show an expansion in white platelets; the aftereffects of the physical pathology assessment in view of histomorphology support the clinical conclusion of elephantiasis. The patient was performed debulking with the Charles methodology. Careful arranging was done in organize activity for security of course of lower appendage and aversion of lymphatic seepage framework compromised issues. Careful stamping were arranged in recumbent position, the checking were vertical along the thigh, leg, and foot on average or horizontal perspective relying upon over the top delicate tissue enlarging. They were prompted bed rest, leg height, back rub, and pressure piece of

clothing application. It worked on the delicate quality of expanding with some decrease, which helped for definite arranging the careful extraction at the hour of medical procedure.

Patients were set in prostrate situation under broad sedation. Tourniquet was applied to thigh, and extraction of extreme delicate tissue of thigh, leg, and foot was arranged as the checking. Tourniquet was collapsed and haemostatic accomplished. Because of the size of the expanding, our case was arranged as a two-stage debulking. First stage was anticipated resection of lymphatic mass on the average part of thigh in essential conclusion, to lessen the immense lymphatic mass of the leg which was so weighty to raise. The resected mass weight was 5 kg. The second stage system was embraced 1 weeks following the first. The medical procedure were done to the dorsum of the foot, sidelong part of the leg and thigh. The resected mass weight was 5 kg. the complete resected mass weight was 10 kg. Postoperatively persistent is getting along nicely and skin uniting would be arranged after healty granulation tissue is accomplished.



**Figure 1.** Elephantiasis of patients left lower limb



**Figure 2.** Post-excision of medial aspect



**Figure 3.** Post-excision of dorsum of the foot, lateral aspect of the leg and thigh

### 3. Discussion

Elephantiasis is a persistent and gradually moderate infection that has been displayed to diminish capacity and personal satisfaction. Its brought about by the harm delivered by contamination of the lymphatic vessels caused mostly by three sorts of filarial parasites: *W. bancrofti*, *B. Malayi*, and *B. timori*. Early contamination are regularly subclinical and predominantly obtained during youth, prompting a day to day existence season of an impeded lymphatic framework and expanded hazard of weakening episodes of DLA, including lymphangitis, lymphadenitis, cellulitis, or canker formation (Chilgar et al., 2019). Tissue fibrosis, fat affidavit, hyperpigmentation, cutaneous acanthosis, and papillomatosis are available. The skin fosters a cobble-stone surface example (Wollina et al., 2014).

Treatment of these patients is incredibly difficult with careful mediation. Careful administration of lymphedema can be isolated into physiologic system, which endeavor to restore typical lymphatic physiology by enlarging freedom of lymphatic fluid, and ablative methodology, which eliminate overabundance subcutaneous tissue to work on understanding solace and work with moderate therapies different microsurgical strategies are currently accessible to oversee lymphoedema including LVA (Lymph Venous Anastomosis) and VLNT (Vascularized Lymph Node Transfe) (Sajikumar and Balaprasanth, 2019; Xu, 2008). LVA is physiologic microsurgical strategy in which distal lymphatic channels are anastomosed to neighboring subdermal veins, permitting sidestep of proximal lymphatic block by shunting lymphatic fluid into the venous framework. It is for the most part acknowledged in the beginning phase. VLNT is the most common way of moving lymph hubs from somewhere else in the body to the lymphoedema impacted region. The utilization of liposuction can eliminate abundance fat tissue and result in a critical decrease in volume (Hague et al., 2020; Xu, 2008).

In our cases, the patient with serious lymphoedema and thick fibrotic tissue, the main choice to quickly further develop his side effects was utilize a more conventional Charles methodology. Charles strategy is a possibility for these patients which overabundances of lymphoedematous skin and subcutaneous tissue are extracted, convey the possibility to annihilate existing cutaneous lymphatics and furthermore convey the gamble of papillomatosis, putrefaction of the skin and worsening of the edema. Charles strategy, but has been recommended on the off chance that with serious disability and in those not answering moderate or negligibly intrusive surgery, to work on the nature of life (Gupta et al., 2018).

This methodology has high paces of dreariness and potential for mortality. The huge degrees of intraoperative blood misfortune ought not out of the ordinary. Because of the size of expanding, our case was arranged as a two - stage debulking to limit the physiological affront. Postoperative injury care in both the ongoing and short term setting is additionally an essential part of these patient management (Hague et al., 2020) The careful dangers or horribleness related with a singular method in term of the likelihood or recurrence of an intricacy (like postoperative disease) versus a seldom happening complexity might be perilous (like stroke). Due to broad and multi-stage a medical procedure in surgery, specialist's aptitude and experience are expect to do the medical procedure surgery.

### 4. Conclusion

Charles procedure is recommended for elephantiasis and can be adjuvant treatment. Although postoperative complication may occur, with the correct multidisciplinary support, significant improvements in function and quality of life can be achieved.

#### Competing interest

No competing interest were disclosed.

#### Conflict of interest

The authors declare no conflict of interest financial or otherwise.

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