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A Prospective Study of Nodovenous Shunt Surgery in Lymphoedema

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Abstract

Background: Lymphoedema is caused by abnormality of lymphatic system. Early diagnosis is important since treatment is most effective when Lymphoedema is diagnosed at the earliest stage. The aim of the study was to analyze the effectiveness of nodovenous shunt surgery in lymphoedema cases. **Methods:** The prospective study was done in lymphoedema patients admitted in civil hospital during April 2011 to July 2013, having competent sapheno femoral junction and patients were followed up after 1 month and 6 month. **Results:** Total 20 patient were operated with nodovenous shunt surgery in which, maximum number of patients were in the age group of 41 to 50(40%). Total 13 patients had fever and pre-operative acute lymphagitic attack and one patient had post operative lymphoerrhoea from wound. **Conclusion:** The nodovenous shunt surgery is effective in early stages of lymphoedema. Every patient should be given a choice of this relatively safe procedure before limb reduction surgery.

Keywords: Lymphoedema, Nodovenous shunt, Physiotherapy.

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Early diagnosis is important since treatment is most effective when Lymphoedema is diagnosed at the earliest stage. The aims and objectives of the study were (i) To know grade of Lymphoedema in which nodovenous shunt is most useful. (ii) To study postoperative results including overall reduction in size. (iii) To analyze long term role of surgery in Lymphoedema (iv) To study postoperative complications of surgery (iv) To study prerequisites of nodovenous shunt.

INTRODUCTION

Lymphoedema is caused by an abnormality of the lymphatic system leading to excessive build up of tissue fluid that forms lymph, known as interstitial fluid.¹ Secondary Lymphoedema. This type of Lymphoedema occurs from damage to the lymphatic system, commonly from cancer and its treatment but also from trauma to the skin such as from burns or infections. The overall risk of Lymphoedema for all cancers is reported to be 15.5%². Progressive Lymphoedema is complicated by recurrent infections, non-healing wounds, discomfort or pain, difficulty with daily tasks, emotional and social distress¹. Effective treatment for Lymphoedema is available.

MATERIALS AND METHODS

The study consisted of 20 patients, with the diagnosis of lymphoedema that underwent Lymphonodovenous shunt admitted at Civil Hospital from April 2011 to July 2013. The protocol of the study was approved by the ethical committee of the institute. All the patients underwent unilateral/bilateral nodovenous shunt. The patients were followed up in immediate post-operative periods for various parameters and discharged according to the condition of the patient. All the patients were followed up at course of 1 week, 1 month and 6 months and examinations were carried out and results were recorded. At every visit girth measurement was done at 15cms from medial

malleolus and difference was noted. During the whole course of study, patients were not subjected to any potential risks other than the risk of operative intervention.

As nodovenous shunt alone don't work great with grade iv lymphoedema, we limited our patients to grade two and early grade three.

Criteria for inclusion

- Lymphoedema involving lower limb, scrotum/vulva/penis.
- Preferably with minimal/no sclerosis of skin(grade1-2)
- Enlarged superficial inguinal lymphnodes with minimal fibrosis.
- Competent sapheno-femoral junction

Criteria for exclusion

- Lymphoedema involving site other than lower limb and genitals
- Late presentation-grade three and four edema
- No palpable or non satisfactory lymphnode(less than two centimeter size)
- Incompetent saphenofemoral junction

RESULT

Table 1: Age wise Distribution

Age Group(yrs)	Numbers	Percentage
21-30	5	25%
31-40	4	20%
41-50	8	40%
>51	3	15%

Out of 20 patients, maximum number of patients were in the age group of 41 to 50(40%), but on history all these patients had origin of lymphoedema in their younger age. So, lymphedema develops gradually and most of the patients neglect them up to advance stage and seek medical advice in later life.

In our study, out of 20 patients 16 were male and 4 were female. The ratio was 4:1. Females invariably have a more soft oedema than males.

Out of 20 patients, 11 patients were from South Gujarat, which is endemic zone for filariasis, 5 patients from other part of state and 2 patients were from Uttarpradesh, one from Bihar, One from Maharastra state. This suggest most of the cases were of secondary lymphoedema mostly filariasis.

Total 12 cases were having grade 2 lymphoedema and 8 cases were having grade 3 lymphoedema.

Table 2: Duration of symptoms and girth reduction

Duration of symptoms(months)	Average Girth reduction
<12	4.42cm
12 to 24	5.66cm
24≥	6.55cm

Out of 20 patients, 13 had fever and pre-operative acute lymphagitic attack.

Table 3: Post operative complications

Wound infection	Hematoma	Lymphorrhea
0	0	1

Table 4: Associated Managements

Associated Managements	Number of patients
Pneumatic compression	13
Shortwave diathermy	15
Manual lymphatic drainage	12
Drug therapy	20

DISCUSSION

As results of nodovenous anastomosis is better in grade ii and early grade iii, we exclude patients with grade iii and grade iv. They first underwent reduction procedure and than nodovenous anastomosis. Enlarged superficial lymphnode(2 cm or more) should be there for long term potency of anastomosis and saphenofemoral junction must be competent for better result. As regards the effects of the duration of lymphoedema on the outcome of surgery, it was seen that patients with longer duration of edema show marginally better result in our study. The findings were consistent with the study done by nielubowicz and olszewski.³ In our study there is progressive increase in edema volume up to about 10 years, beyond which the edema volume becomes constant, it is possible that after this time, increase fibrosis and obliteration of lymphatic channels result in poor response. In our study the frequency of lymphagitic attack is a good indicator of response to surgery as seen with study of Jamal S. Purushothaman.⁴ In our study those who underwent physiotherapy had better girth reduction on long term basis, but no comparative study is available. On followup at 6 months, 15-30% reduction in edema volume was noted. The study done by Jamal and purshothaman reported 39.0% reduction of girth at 6 months follow up.

CONCLUSION

Nodovenous shunt surgery is a safe, cost effective treatment modality with minimal complication. Postoperative physiotherapy helps in maintaining edema reduction in long run. Patients with secondary lymphoedema should be given a choice for nodovenous shunt surgery before undergoing limb reduction procedures.

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