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A Comparitive Study of Open Surgery and Radiofrequency Ablation for Varicose Veins

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Abstract
The treatment of choice in the new era for superficial and perforator venous reflux is Radiofrequency ablation (RFA). Obliteration of superficial venous system in short term follow up is similar for both RFA and venous stripping. Clinical improvement as measured by CEAP and venous severity score are similar in both groups. But RFA is less morbid than surgery. Patients who are undergoing RFA, return to work earlier than patients who underwent surgery. To access the obliteration of the superficial venous systems following conventional surgery and RFA at the end of three months. To compare the clinical outcome between the surgery and RFA at the end of three months. To compare the cost and the clinical stay among the surgery and RFA. The most important differences seen between the two groups was on patients recovery. The mean time required for the patient to return to normal activities was1.5 days for the RFA patient, compared to about 5 days that is required for venous stripping. The examination with Duplex ultra sound revealed 91.7% free of reflux in the RFA and 89.7% free of reflux in the vein stripping surgery. The favoured alternative choice in the treatment of superficial and perforator venous reflux disease in the newer era is the endovenous radio frequency ablation. The RFA not only out performs the traditional vein stripping and perforator interruption with regard to morbidity and outcome, it also reduces the formation of neovascularization that is frequently blamed reason for the higher recurrence rates seen with vein stripping.

INTRODUCTION

The problem of varicose veins is one of the many prices man has to pay for gaining an erect posture and so has been there since pre historic times. Till now no cure has been found though the surgery is the gold standard, balancing cosmetically acceptable result with a low incidence of recurrence and complications. It has always been a challenge. The expansion of minimally invasive techniques has made the treatment of superficial venous reflux and varicose veins, a rapidly evolving field[1-3]. Radio frequency ablation (RFA), transilluminated power phelebectomy (TIPP), Foam sclerotherapy, Endovenous laser therapy (EVLT), are newer minimally invasive techniques in the varicose veins treatment. Out of these techniques RFA have been mostly accepted by the patients all over the world. It is less invasive and need for post operative stay and pain are less as compared to conventional surgery. So a study has been made to compare the efficacy of the surgery and the RFA[4-7].

Aims and Objectives of the Study:

- To access the obliteration of the superficial venous systems following conventional surgery and RFA at the end of three months.
- To compare the clinical outcome between the surgery and RFA at the end of three months.
- To compare the cost and the clinical stay among the surgery and RFA.

MATERIALS AND METHODS

This study is done between January 2024 to February 2025. Cases of radiofrequency abalation and open surgery cases admitted in sree mookambika college of medical sciences inclusion in this study. exlusion criteria are icu patients, patinents with sepsis. Statistical analysis was done using the statistical package for social sciences (SPSS). Different statistical methods were used as appropriate. Mean±SD was determined for quantitative data and frequency for categorical variables. The independent t-test was performed on all continuous variables. The normal distribution data was checked before any t-test. The Chi-Square test was used to analyze group difference for categorical variables. A $p<0.05$ was considered significant.

RESULTS AND DISCUSSIONS

Table 1: Improvement in CEAP Class

Group	Parameter	At Presentation	At 3 months
Surgery	Mean	4.30	3.00
	Standard deviation	1.264	1.819
RFA	Mean	4.23	2.62
	Standard deviation	1.382	1.781

In the surgery group the mean CEAP class improved from 4.3-3.0. In the RFA group the mean CEAP class improved from 4.23-2.62. Using Mann-Whitney test, there was no statistically significant difference between the improvements seen in both the groups (p=0.235).

Table 2: Improvement in Venous Severity Score (VSS)

Group	Parameter	At Presentation	At 3 months
Surgery	Mean	5.57	2.30
	Standard deviation	3.730	2.409
RFA	Mean	5.40	1.67
	Standard deviation	3.379	1.516

In the surgery group the mean VSS improved from 5.57 to 2.3. In the RFA group the mean VSS improved from 5.4-1.67. Using Mann-Whitney test, there was no statistically significant difference between the improvements seen in both the groups (p=0.381).

Symptomatic Improvement: In the surgery group 25 out of 30 patients i.e., 92.7% had symptomatic improvement compared to 28 out of 30 patients i.e., 98.3% in RFA group. There is no statistical difference in the symptomatic improvement between the two groups (p=0.47). The idea behind both RFA and traditional vein stripping is that to remove the incompetent veins from the venous circulation so as to reduce the venous hypertension, with subsequent result in the resolution of symptoms but without significant morbidity[8]. Postoperative pain reduction is markedly less in the RFA group than in the stripping groups, with the most significant differences between the 6^{th} and 7^{th} post operative period. The pain killers needed in the RFA group were less statistically. Medical leave were also significantly shorter in the RFA group. The restoration of physical activity is faster in the RFA group than the comparable group. Venous severity score were nearly similar for both groups. Recurrence was not seen in both groups. But Lower pain score is seen in the RFA group verses the stripping group following the procedure. The time required for surgery and RFA was almost the same[9,10,11]. Within 2 weeks, that is, the early follow up is focused on the comparison of the procedure related complications, patients recuperation, quality of life outcomes after the surgery and the procedure impact on the hemodynamic and clinical outcomes. No differences were observed between the groups in the patient demographics, VSS, CEAP, distribution both before and after treatment[12]. The most important differences seen between the two groups was on patients recovery. The mean time required for the patient to return to normal activities was 1.5 days for the RFA patient, compared to about 5 days that is required for venous stripping. The examination with Duplex ultra sound revealed 91.7% free of reflux in the RFA and 89.7% free of reflux in the vein stripping surgery. Both the RFA and venous stripping methods were successful and the complications were nearly similar between the groups in the study as it was with the other studies

conducted. Important differences was seen in the patients recovery and in the return to work. And the most important point is that, RFA is the treatment of choice for recurrence saphenous vein reflux[13-17].

CONCLUSION

The favoured alternative choice in the treatment of superficial and perforator venous reflux disease in the newer era is the endovenous radio frequency ablation. The RFA not only out performs the traditional vein stripping and perforator interruption with regard to morbidity and outcome, it also reduces the formation of neovascularization that is frequently blamed reason for the higher recurrence rates seen with vein stripping. Obliteration of superficial venous system in short term (3 months) is similar in surgery and RFA. Clinical improvement as measured CEAP class and venous severity score are similar in both groups. Complications in both the groups are minor and relatively less frequent. RFA is less morbid than surgery. Patients undergoing RFA returned to work earlier. Cost effectiveness is significantly similar in both groups. Post operative pain is significantly less in RFA than in surgery.

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