



Study of Varicose Veins Their Clinical Presentation & Surgical Management

KEYWORDS

Varicose Veins, Stripping, SEPS Subfacial Endoscopic Perforator Surgery.

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ABSTRACT

The term varicose is defined as veins that are tortuous, twisted, knotted or elongated. It is common condition seen in clinical practice. Majority of patients with varicose veins are asymptomatic or have minimum symptoms and neglected cases present with complications. This is a descriptive study conducted during April 2013-March 2015 to study various clinical presentations and the effectiveness of various surgical treatment modalities like Trendelenburg operation, Cockett and Dodds perforator ligation Subfacial Endoscopic Perforator Surgery(SEPS) at Osmania general hospital. To study the results and the incidence of various complications after the Trendelenburg operation, subfacial ligation, SEPS and compare the results of various surgical treatment modalities with literature.

INTRODUCTION

Varicose veins are dilated, tortuous, elongated veins in the leg. There is reversal of blood flow through its faulty valves. The clinical presentation of varicose veins can be variable and many patients have minimal or no symptoms. At the other extent neglected cases may present with various degree of complication from ulceration to deformity. Varicose veins is a common health problem with 5-10% of individuals being affected.

Great saphenous vein reflux is commonly treated by high ligation of the saphenofemoral junction (SFJ) and stripping of the great saphenous vein(GSV) from groin to below knee level. Nonetheless, dissatisfaction with the above procedure incited many surgeons to develop alternative ways in treating varicose veins. More recently minimally invasive procedure like SEPS is used.

The present study assesses the role of Trendelenburg's operation, Cockett and Dodd's perforator ligation, SEPS in the management of saphenofemoral incompetence, perforator incompetence of the lower limb veins and the various complications of the surgeries in the postoperative period.

MATERIALS AND METHODS

This descriptive study is based on the analysis of 25 cases of varicosities of the lower limbs. The patients were treated with Trendelenburg Operation, Cockett and Dodd perforator ligation, SEPS. The study was conducted in the period between April 2013 and March 2015 in the Upgraded department of Surgery at Osmania General Hospital, Hyderabad.

Inclusion criteria:-Patients with varicosities of the great or small saphenous system with or without perforator incompetence of the leg were included in the study.Exclusion criteria :- Patients with varicose veins with DVT and patients who were managed conservatively were not included in the study.

Preoperative work up: All the patients were admitted in Osmania General Hospital from the period between April 2013 and March 2015. A thorough history and clinical examination was done to assess the venous system. The location of the varicosities, the presence or absence of

skin pigmentation, edema, dermatitis, ulceration etc., was documented. They were subjected to biochemical investigations complete blood picture, complete urine exam, random blood sugar, blood urea, serum creatinine and routine imaging (Chest Roentgenogram) and an electrocardiogram. A Duplex study of the venous system was done preoperatively to assess the extent of the varicosities, the presence or absence of saphenofemoral incompetence, saphenopopliteal incompetence, perforator vein incompetence and the status of the deep veins.For patients with venous ulceration, conservative management with daily saline dressings and elasto crepe bandage application was done till the active infection subsided. Patients were taken up for surgery once the inflammation and infection subsided and the ulcer floor was clean and granulating. Patients were not made to wait until complete healing of the ulcer.

All patients were operated in elective operating rooms with strict aseptic precautions. Anesthesia used was spinal anesthesia in all the patients.

**TABLE – 1
GENDER DISTRIBUTION**

Gender	Number of Patients	Percentage
Male	19	76
Female	6	24
Total	25	100

**TABLE – 2
AVERAGE HOSPITAL STAY**

Average hospital stay	Days
Perforator ligation alone, Cockett and dodd	9.3
Trendelenburgs operation with Cokett and Dodd	11.3
SEPS	3

**TABLE – 3
CLINICO PATHOLOGICAL VARIANTS**

Pathology	No.of Patients	percentage
Perforator in competence only	11	44
Perforator in competence withsaphenofemoral/saphenopopliteal in competence	14	56
Total	25	100

TABLE – 4
CLINICAL CLASSIFICATION

Clinical Classification	No. of Patients	Percentage
C1	0	0
C2	12	48
C3	1	4
C4	4	16
C5	1	4
C6	7	28

DISCUSSION

In the present study a total of 25 patients underwent surgery for the treatment of varicose veins in the Osmania General Hospital, Hyderabad from March 2013 to April 2015. Preoperative workup was done as mentioned before. Of the 25 patients who underwent the procedure, 19 were men and 6 were women. This gross male preponderance is because of social reasons due to which less number of women seek medical intervention for this problem. The average age of the patients who underwent operation was 35.5 years. Left lower limb was affected in 11 patients and right limb was involved in 13 cases and bilateral disease was seen in 1 patient. Of the patients operated, 44% (n=11) had only perforator incompetence and 56% (n=14) had saphenofemoral incompetence in addition to perforator incompetence. Of the patients with superficial vein disease (n=14), all patients had reflux at the saphenofemoral junction only (saphenofemoral incompetence.), twelve of the patients had varicosities of the lower limb without skin changes (C2), one patients had edema of the leg and ankle (C3) and four patients had skin changes in the form of pigmentation, eczema, lipodermatosclerosis etc (C4). One patient had healed ulceration (C5) and seven patients had active ulceration (C6). Active ulcers which were infected and with slough were preoperatively managed with debridement and daily dressings till the infection came down and the ulcer floor was covered with healthy granulations. The patients with isolated perforator incompetence were treated with the Cockett and Dodd procedure whereas the patients with concomitant saphenofemoral incompetence underwent Trendelenburg's operation and stripping in addition to subfascial ligation.

Postoperatively patients were followed up on outpatient basis once in every 2 weeks for a maximum of 12 weeks and were assessed for complications of surgery, ulcer healing times and residual perforator incompetence. In our study, postoperative wound infection of the long posterior leg incision was seen in 8% (n=2) of the patients and 0% wound infection in patients underwent Trendelenburg's operation with 4cm.transverse groin skin crease incision . Delayed wound healing without infection was seen in 4% (n=1). The patient with delayed healing of the wound had lipodermatosclerosis of the lower leg where the incision was placed. In no patients, wound hematoma or nerve palsy (motor or sensory neuropathy) was seen. The total complication rate was 12%. The complication rate described in various studies for the subfascial ligation procedure with a long incision ranges from 12% to 53%. Stuart et al reported that calf wound complications occurred in seven patients (19%), and the average hospital time was nine days. Sato et al reported a 45% local wound complication rate for the subfascial ligation procedure. Bowen et al reported a 44% wound infection rate in patients undergoing open perforator surgery in a randomized trial comparing Cockett and Dodd procedure with SEPS.

In our study, wound infection and non healing rates were less than the described in literature. This is probably the result of careful patient selection, strict aseptic precau-

tions, appropriate antibiotic therapy, absolute hemostasis. Wounds in lipodermatosclerotic limbs tend towards non-healing than incisions given in healthy skin. This could be a contributory factor in the wide variation of complication rates seen. The mean ulcer healing time in our study was 3.2 weeks following surgery. Earliest healing time was 2 weeks and the longest time was 7 weeks. Ulcer healing time quoted in literature ranges from 2 to 6 weeks the average being 35 days. Negus and Friedgood in a study of varicose ulcers in 108 patients reported an ulcer healing time of 17 days and healing rate of 84% with open subfascial ligation. Cikrit et al reported an ulcer healing rate of only 30% with an average healing time of 6 weeks in a study of 32 patients with varicose veins of which 30 had active ulceration. Residual perforator incompetence was seen in 4% (n=1) of the total patients operated. In both the cases, the perforators in the below knee region were showing persistent incompetence in the postoperative duplex study showing that they were the ones that were missed during surgery. This might be due to inadequate exposure of the incision up to the popliteal fossa. Accurate preoperative marking of the sites of incompetent perforators and a thorough intraoperative search should prevent such persistence of perforator incompetence. The mean postoperative stay for patients undergoing Cockett and Dodd procedure alone was 7.3 days. The mean postoperative stay for patients who underwent perforator ligation with concomitant stripping procedure was 9.3 days. Stuart et al reported an average hospital stay of 9 days for patients undergoing open perforator ligation. The mean postoperative stay for patients in this study, undergoing SEPS was 3 days. In a study conducted by Stuart et al , the mean postoperative stay was 9 days. This difference may be because of venous ulcers, in our study patients underwent SEPS didnot have any ulcers.

Long term follow up was not possible in this study due to patient factors. Hence we were unable to study the ulcer recurrence rate. But studies show that patients who underwent open perforator ligation were free from ulcer recurrence for more than 5 years follow up. A study by Negus showed that 84% of the patients were free of ulcerations 6 years after the open perforator ligation procedure. Many studies have compared the open subfascial perforator ligation with SEPS procedure. Pierek et al reported an overwhelming 53% of wound infection rate with open perforator ligation whereas no wounds (0%) were infected in the SEPS group. Sybrandy et al compared open perforator ligation with SEPS and concluded that ulcer healing rates and recurrence rates were similar with both the procedures. In our follow up recurrence rate SEPS was 0%. Therefore, ulcer healing rates achieved with SEPS are equal to that of the open procedure, but the wound complication rate is much lesser with SEPS. In our study 5 patients underwent SEPS, none of them had ulcers . This may be due to small number of patients and careful patient selection for SEPS. However, the expertise and equipment required for the performance of SEPS is not yet widely available. The economical and technical feasibility of SEPS procedure is still very less especially in the non institutional setting in our country.

CONCLUSIONS

Varicose veins is a common health problem in western countries with 5-10% incidence. It is less common in India and other primitive civilizations. But exact incidence is not known. Trendelenburg's operation with stripping of great saphenous vein just above the knee is an appropriate surgery of patients with sapheno femoral incompetence.

Cockett & Dodd procedure of open subfascial perforator ligation is a useful procedure in treatment of patients with primary varicose veins with perforator incompetence. The most feared local wound complications of the procedure can be prevented by careful patient selection, meticulous operative technique and assiduous postoperative care. With these precautions, the wound complications can be minimized and acceptable results can be achieved.

Open perforator ligation has an important role in treatment of venous ulcers with our study showing 100% ulcer healing rates within 7 weeks of the procedure. Open perforator ligation (Linton's or Cockett and Dodd's) has been largely replaced by SEPS procedure in many centers around the world. But, in places where the equipment or expertise for performing SEPS is not available, Cockett and Dodd's procedure remains a viable alternative for perforator ligation.

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