



ETIOPATHOGENESIS OF VARICOSE ULCER

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ABSTRACT **Background/objectives** Varicose ulcers carry psychological and high financial burden for patients causing pain, limitation of mobility and depression. The study aimed to identify factors associated with an increased risk of venous ulceration in patients with varicose vein. **Methods** A case control study design was utilized enrolling 40 patients in each group, who underwent varicose vein treatment in Viswabarathi medical college, Kurnool between March 2021 to March 2022. Cases were patients with varicose ulcer, controls included patients with varicose vein without ulcers. Data were collected using interviews questionnaire and medical record abstraction. **Results** There were more males than females in both groups. Cases were on an average older than the controls (52.58 vs 45.30 yrs). After adjusting for potential confounders, the estimated number for developing ulcer was higher in patients with long duration of varicose vein (mean duration 5 yrs), prior history of DVT, history of trauma to leg, physical inactivity, co-existent diabetes and combined reflux in GSV, SSV and perforators. **Conclusion** We found that history of DVT, leg trauma, physical inactivity were significant risk factors of varicose ulcer.

KEYWORDS : ETIOPATHOGENESIS, varicose ulcer

INTRODUCTION

Varicose vein is a chronic disease expressed with heaviness, tiredness, burning, itching, ulceration and bleeding. The known risk factors for developing varicose veins include obesity, family history, age, gender, sedentary lifestyle and pregnancy. A major complication of varicose veins is venous ulcer, with accounts for 48-67% of all leg ulcers. Based on world wide accepted CEAP classification (C-clinical manifestations, E-etiological factors, A-anatomic distribution of disease, P-underlying pathophysiologic findings), patients with ulcers are in advanced stages of C5 or C6.

The prevalence of varicose leg ulcers is different in various countries. In European countries, the prevalence of varicose leg ulcers in general population varies between 0.2% and 1%. In the US, 1.7% of seniors (65 yrs old or older) suffer from venous ulcers. The risk factors for venous ulceration include reflux in deep, superficial and perforator veins, venous obstruction, history of deep vein thrombosis, previous leg injury, phlebitis, obesity, smoking, emphysema, and family history of leg ulcers. The psychological (eg., depression, reduced quality of life) and financial burden of patients with chronic venous ulcers is high.

In this study, we aimed to characterize the patients with varicose venous disease and identify factors associated with an increased risk of ulceration. We hypothesized that venous reflux in deep veins, history of leg injury, post thrombotic syndrome and physical inactivity would be strongly positively associated with venous ulceration.

MATERIALS AND METHODS.

Study design: Case control study.

Study setting: Viswabarathi medical college, Kurnool.

Study population: patients attending outpatient department of general surgery at Viswabarathi medical college, Kurnool.

Inclusion criteria: All the patients equal to and above 18 years age having varicose veins with venous ulcer who gives consent.

Exclusion criteria: patients with conditions that could also lead to ulcers in lower limbs including heart failure, peripheral artery disease, pressure ulcers, and malignant or inflammatory ulcers, patients not willing for venous Doppler.

Study period: March 2021 to March 2022.

Methodology: patients presenting to surgery department (OPD and casualty) with varicose ulcer will be studied. History also takes in to

account the various risk factors that can contribute to various ulcer formation like profession (long standing), diabetes mellitus, obesity, hypertension, prior trauma. The prevalence of incompetence of SFJ, SPJ and perforators are ascertained with the help of venous Doppler study and clinical examination.

RESULTS

Basic characteristics of the participants

A total of 80 patients were included in the study.

The age of patients included in the study ranged from 20 yrs to 83 yrs. Maximum number of patients were in the 40-60 yrs age group (46%). Percentage distribution of the sample according to age is presented in table 1 and graph 1.

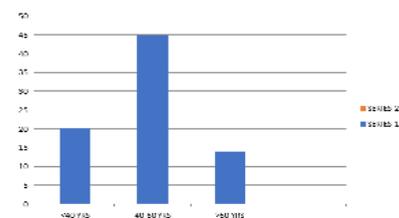
AGE	ULCER +	NO ULCER	TOTAL
<40 YRS	6 (30%)	14 (70%)	20 (100%)
40-60 YRS	25 (54.3%)	21 (45.7%)	46 (100%)
>60 YRS	9 (64.3%)	5 (35.7%)	14 (100%)
TOTAL	40 (50%)	40 (50%)	80 (100%)

CHI SQUARE- 4.69

P value 0.096

There is no statistically significant association between age and ulcer.

Graph 1: percentage distribution of sample according to age.



Gender distribution of cases are presented in table 2 and graph 2.

43% of sample were males. In our study no significant association between sex and ulcer derived.

Table 2: Percentage distribution of sample according to sex.

	ULCER +	NO ULCER	TOTAL
FEMALE	18 (48.6%)	19 (51.4%)	37 (100%)
MALE	22 (51.2%)	21 (48.8%)	43 (100%)
TOTAL	40 (50%)	40 (50%)	80 (100%)

CHISQUARE-0.05 Pvalue-0.82

There is no statistically significant association between sex and ulcer.Graph 2:

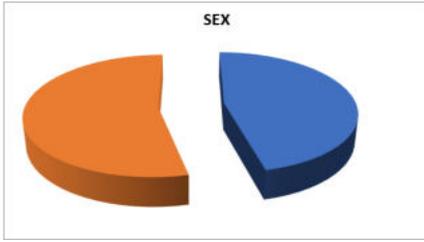


Table 3:percentage distribution of duration of ulcer.

	ULCER +	NO ULCER	TOTAL
DURATION <10 YRS	11(33.3%)	22(66.7%)	33(100%)
10-20 YRS	20 (55.6%)	16 (44.4%)	36 (100%)
>20 YRS	9(81.8%)	2(18.2%)	11(100%)
TOTAL	40 (50%)	40 (50%)	80(100%)

CHI SQUARE 8.56. P value 0.05. there is significant association999869*** between Duration and ulcer.Graph 3 :

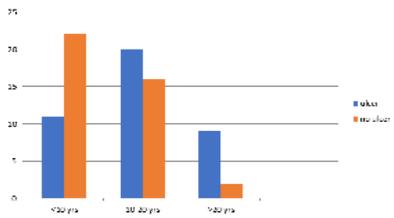
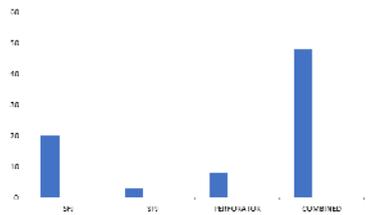


Table 4:type of reflux

	Odds ratio	95%CI	P value
SPJ REFLUX	3	0.33-27.2	0.329
PERFORATORS	0	000	0.999
COMBINED REFLUX	6.60	2.02-21.5	0.002

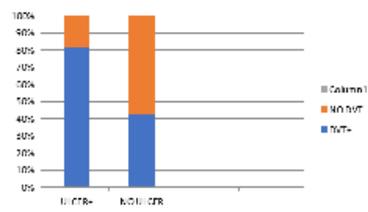
Graph 4:



Patients with combined reflux have 7 times risk of developing venous ulcer than those with single reflux..there is significance (p value <0.05). History of DVT and varicose ulcer

	ULCER	NO ULCER	TOTAL
DVT +	13(81.3%)	3(18.8%)	16(100%)
No DVT	27(42.2%)	37(57.8%)	64(100%)
TOTAL	40(50%)	40(50%)	80(100%)

There is significant association between h/o DVT and ulcer.



Diabetes and varicose ulcer :

	Odds Ratio	P value
DIABETES	2.85	0.025

Study participants with diabetes have 2.85 times risk of developing varicose ulcer than non diabetics.

CONCLUSION :

our conclusions are

1. Mean age of patients with varicose ulcer at presentation is 7yrs more in cases (52 yrs versus 45 yrs).
2. Duration of varicose vein is proportional to risk of developing ulcer. Mean duration is 5 yrs more in cases (14.6 yrs versus 9.2 yrs).
3. Combined reflux (in SFJ/SPJ/Perforators)is statistically significant.
4. There is significant association of ulcer with DVT....

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