



Study of incidence and potential risk factors for Deep Venous Pathology in Patients with Venous Leg Ulcers

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ABSTRACT

Introduction: Aim is to study the incidence and potential risk factors for deep venous pathology in venous leg ulcer patients and their management.

Material and Methods: It is a Prospective observational study done in thirty patients with venous leg ulcers who were subjected to venogram for active detection of deep venous pathology.

Results: 18 Out of thirty patients were found to have deep venous pathology with incidence of 60%. Significant deep venous pathology was seen in patients with left side involvement, previous deep venous thrombosis and abdominal wall collaterals.

Conclusion: This high incidence emphasize the fact that deep venous pathology is extremely common in patients with venous leg ulcers especially in those with left side involvement, previous deep venous thrombosis and abdominal wall collaterals.

KEYWORDS : Deep Venous Pathology

Introduction:

Venous leg ulcers are the most common ulceration of lower extremity² which constitutes 70% of all leg ulcers. Also they are the most severe form of chronic venous disorders¹. Deep venous pathology includes both Obstruction and reflux. They cause severe disabling symptoms and are responsible for higher rate of progression to venous ulceration.

Even after treating all superficial and perforator vein insufficiency ulcer recurrence risk still be noted in up to 33% of patients with primary deep CVI and 70% of those with the postthrombotic syndrome. These facts demonstrate the importance of deep venous disease in the pathophysiologic process of CVI. Deep venous obstruction in combination with venous reflux - 55% of CVI. Correcting iliac obstruction while ignoring the deep venous reflux can result in a long-term ulcer-free rate of nearly 60%. Remaining 40% of deep venous reflux will benefit from valve reconstruction⁶.

Prompt diagnosis of deep venous pathology in patients with venous leg ulcers⁴, helps to correct the disease and prevent devastating effects of mere superficial varicose surgery without correcting proximal venous obstruction. With effective treatment options available to treat proximal venous obstruction, especially less morbid minimally invasive Percutaneous endovenous stenting which has emerged as a powerful technique to treat chronic venous obstructions, it should be detected promptly and treated.

METHODOLOGY:

- Study Design: Prospective Study
- Study Centre: Govt. Stanley General Hospital
- Study Duration: Two Years (2015-2016)
- Study Procedure: thirty patients with venous leg ulcers attending the vascular surgery department of Govt. Stanley Medical

College and Hospital were enrolled for study. Proper history, thorough clinical examination and investigations (duplex / venogram) were done. Confirmation of deep venous pathology done by venogram.

RESULTS AND DISCUSSION:

Incidence of deep venous pathology:

Out of thirty patients with venous leg ulcers, 18 were found to have deep venous pathology constituting incidence of 60%. This higher incidence of deep venous pathology in patients with venous leg ulcers stress the fact, there should be low threshold for suspicion in these groups of patients, in order to promptly diagnose the condition and their effective management.

Venogram:

Confirmation of deep venous pathology was done by venogram. 17 patients underwent CT/MR venogram in which 14 were subjected to further conventional venogram for interventional purpose. 13 patients underwent only conventional venogram for deep venous pathology confirmation. Shown in figure 1 and 2.

FIGURE. 1: VENOGRAM SHOWING DEEP VENOUS OBSTRUCTION

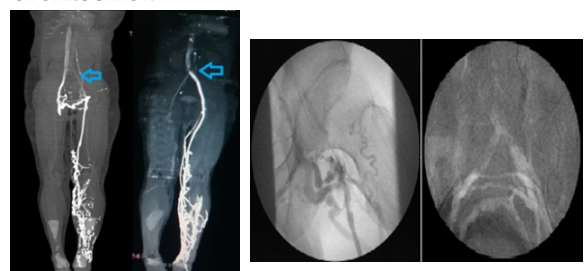
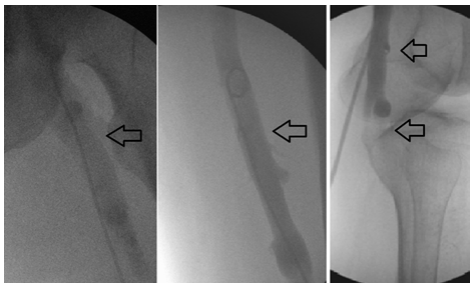


FIGURE 2: VENOGRAM SHOWING DEEP VENOUS REFLUX



Gender:

All the female patients in this study (5) were found to have deep venous pathology and males with incidence of 52%. But it was not statistically significant.

Age Group:

Majority of patients are from age group 41-50 years constituting 44.44% of deep venous pathology with all four patients in age group 21-30 years were positive for deep venous pathology.

Side:

SIDE	DEEP VENOUS PATHOLOGY		INCIDENCE
	POSITIVE	NEGATIVE	
LEFT	16	4	80%
RIGHT	2	8	25%
P – 0.0041 (statistically significant)			

In this study, patients with left side were majority with 66.67% (20/30). Deep venous pathology was found to be high in patients with left sided venous ulcer when compared with right with incidence of 80% versus 25% respectively.

Previous Deep Venous Thrombosis (DVT):

DVT	DEEP VENOUS PATHOLOGY		INCIDENCE
	POSITIVE	NEGATIVE	
POSITIVE	13	1	92.86%
NEGATIVE	5	11	31.25%
P – 0.0008 (statistically significant)			

46.67% (14/30) in the study had DVT in which 13 were deep venous pathology positive with incidence of 92.86%. In deep venous pathology patients 13/18 – 72% were positive for DVT. Duration of DVT was from 1 to 18 years with mean 5.27 years. Mean onset of DVT to ulcer was 1.3 years with earliest onset at 6 months.

Collaterals:

9 out of 30 patients were found to have visible venous collaterals at groin, pubic and abdominal wall region. All these 9 (100%) patients were found to have deep venous obstruction. This clearly shows that presence of collaterals has very high positive predictive value for deep venous obstruction. Hence all these venous leg ulcer patients should be thoroughly looked for venous collaterals.

Thus potential risk factors for Deep Venous Pathology in Patients with Venous Leg Ulcers with statistical significance in our study were left side involvement, previous deep venous thrombosis and abdominal wall collaterals.

Distribution of Deep Venous Pathology:

Deep venous obstruction seen in 14/18 - 77.78% of patients and reflux in 1/18 - 5.56%. combination of obstruction and reflux in 3/18 - 16.67%.

In these patients with obstruction, there had Inferior vena cava (IVC) obstruction and 11 had iliofemoral obstruction. In patients with IVC obstruction, ulceration was less severe probably of well developed collaterals in these patients.

Previous Varicose Vein Surgery:

7 out of 18 patients with deep venous pathology had undergone varicose vein surgery previously without being diagnosed of deep venous pathology. Here six patients had previous history of deep venous thrombosis. 4 out of 7 (57%) had large ulcers (> 6cm) with severe symptoms at presentation. These emphasize the fact that mere superficial varicose vein surgery in presence of deep venous obstruction is detrimental⁶.

Management:

Out of these 18 patients with deep venous pathology following treatment were done:

- a) Iliac plasty with stenting – 5 patients
- b) Iliac vein plasty - 1 patient
- c) Deep venous valve reconstructive surgery in form external banding valvuloplasty 10 by venous wrapping – 1 patient
- d) Anticoagulation – 11 patients

All patients were on compression stockings.

FIGURE 3: ILIAC VEIN PLASTY AND STENTING

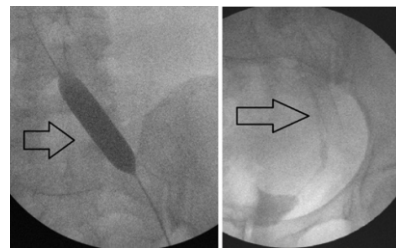


FIGURE 4: EXTERNAL BANDING VALVULOPLASTY



Above managements especially in form of iliac vein stenting and Deep venous valve reconstructive surgery were highly effective and all those patients who had the procedure were completely healed of ulcer and relieved of symptoms. Thus by prompt diagnosis of deep venous pathology effective treatment can be provided as mentioned above^{7,8}.

Conclusion:

This high incidence(60%) emphasize the fact that deep venous pathology is extremely common in patients with venous leg ulcers. Left side involvement, previous deep venous thrombosis and abdominal wall collaterals are potential factors for deep venous pathology in venous leg ulcer patients. Hence these patients should be thoroughly investigated for deep venous pathology before proceeding for varicose vein surgery.

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