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.

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: VENOGRAHM SHOWING DEEP VENOUS OBSTRUCTION
Collaterals in these patients. Obstruction, ulceration was less severe probably of well developed obstruction and 11 had iliofemoral obstruction. In patients with IVC obstruction, there had Inferior vena cava (IVC) 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 detrimental.

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 vavuloplasty 10by venous wrapping – 1 patient
d) Anticoagulation – 11 patients

All patients were on compression stockings.

Previous Deep Venous Thrombosis (DVT):

<table>
<thead>
<tr>
<th>DVT</th>
<th>DEEP VENOUS PATHOLOGY</th>
<th>INCIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSITIVE</td>
<td>13</td>
<td>92.86%</td>
</tr>
<tr>
<td>NEGATIVE</td>
<td>5</td>
<td>31.25%</td>
</tr>
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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.5. 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%.

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.

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.

Reference:

5. Wesley S. Moore’s Vascular and Endovascular surgery, 8th edition