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## Deviation Operation in Patients with Deep Venous Reflux and CVI: First Clinical Results

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No Conflicts of Interest

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## Chronic Reflux: late consequences

following conservative Therapy ca. 90% of Patients will develop PTS  
 15-44% suffer from venous Claudication  
 ~15% have venous Ulcers

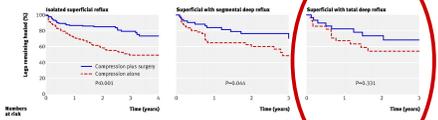


Asymmetric Leaflets

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## ESCHAR trial: Incidence and Pattern of Reflux and Recurrence



| Number at Risk           | 0   | 1   | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |  |
|--------------------------|-----|-----|----|----|----|----|----|----|----|---|----|----|----|----|----|----|----|----|----|----|----|--|
| Compression plus surgery | 133 | 107 | 83 | 46 | 18 | 54 | 36 | 27 | 13 |   |    |    |    |    |    |    |    |    |    |    |    |  |
| Compression alone        | 149 | 99  | 43 | 27 | 3  | 56 | 32 | 25 | 11 |   |    |    |    |    |    |    |    |    |    |    |    |  |

Gohel et al. BMJ 2007;335:83

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## Idea: Transposition Superficial Femoral Vein into Profunda Femoral Vein Proximal to Outlet Valve

- Deep venous insufficiency has high relevance for Development of PTS / Venous Ulcer
- 90% of mankind has an PFV Outlet Valve
- This merely never is affected and is usually patent



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## Transposition Superficial Femoral Vein

- 43y female, sportive horse rider
- Severe **venous Claudication** left leg / **venous rest pain**
- Painfree only for few steps of walking
- Unbearable tension & pain during vertical position and sitting
- Relief only following horizontal placing of the leg
- No option for any sports

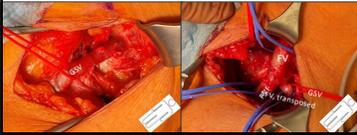
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**Duplex Scan:**

- Complete recanalised left iliaco-femoral Thrombosis with complete deep valve insufficiency SFV
- Outlet Valve of Profunda Femoral Vein sufficient.
- Indication for Deviation-Surgery: Transposition Superficial Femoral Vein into Profunda Femoral Vein proximal to the Outlet Valve

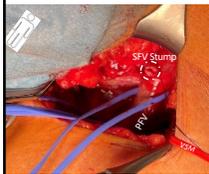
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**Intraoperative Course:**




**Intraop CCDS:**  
Complete valve insufficiency of SFV and greater Saphenous Vein, Sufficient Outlet Valve PFV

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**Intraoperative Course:**

- Dissection SFV at Confluens
- End-to-side Anastomosis to VPF
- Blood flow now via sufficient Outlet Valve PFV



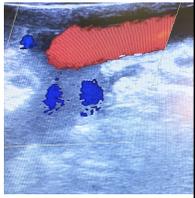
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**Direct postoperative Course:**

- Stockings left Leg, Anticoagulation for 3 Months
- uneventful;
- No persistent Reflux
- Dismission: 2.p.o. day without complaints and with Compression

**Postoperative Control following up to 3 Years:**

- Patient stays without symptoms
- Horse riding;
- No Stocking, no anticoagulation



UHZ Autor: (Svenja Neumann) University Heart & Vascular Center Hamburg Fußzeile (Titel der Präsentation) 18

**Treated patients (3/2020 – 11/2024)**

| Gender | Age | Symptoms            | CEAP Pre          | Patency in hospital | CEAP 3 months | CEAP 1 year | Patency 3 years  | Symptoms 1 year                   |
|--------|-----|---------------------|-------------------|---------------------|---------------|-------------|------------------|-----------------------------------|
| female | 43  | Venous rest pain    | C3                | Patent              | C1            | C1          | Patent (3 years) | Free (3 years)                    |
| male   | 78  | Pain                | C5 (healed Ulcer) | Patent              | C3            | C2          | Patent           | free                              |
| male   | 54  | Pain                | C6 (active Ulcer) | Patent              | C6            | C6          | patent           | Improved (VAS 8 to 4)             |
| male   | 46  | Venous claudication | C4                | Occluded            | C3            | C2          | Occluded         | free                              |
| female | 69  | pain                | C6 (active Ulcer) | Patent              | C6            | C5          | patent           | Improved (VAS 8 to 3)             |
| Male   | 58  | pain                | C4                | patent              | C4            | n/a         | n/a              | Improved at 3 months (VAS 7 to 4) |

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**Conclusion:**

*Transposition Operation* using the sufficient Outflow Valve of PFV may lead to *longstanding Asymptomatic* in Patients with *symptomatic Reflux*.

