Should Venous Interventions Be Performed In Patients With Right Heart Failure

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Disclosures
• Current
  • Medtronic – Consultant/ Speaker
  • Bard – Data Safety Committee
  • Cook – Consultant
  • Volcano – Consultant
  • Boston Scientific – Consultant/ Speaker
• Concluded
  • Synovacor – Director – Core Lower Extremity Wound Lab
  • GSK – Drug support only

I AM NOT A CARDIOLOGIST!

Pulsatile flow in the veins

Pulmonary hypertension — Right ventricular hypertrophy
Right ventricular dysfunction
Systemic hypertension
Anemia
Low cardiac output
Hypotension
Fatigue
Congestion
Circulatory failure
Hypoxemia
Fluid retention
Congestive liver
Hemodynamics

Why is the right heart different
- Highly compliant
- RV volume larger than LV volume
- RV muscle mass 1/6 that of LV

Why is RH Failure such a pain
- Complex three-dimensional geometry
- Complex left ventricular/septum interactions
- No set parameters for RV Ejection Fraction as the LV EF
- No 2 cardiologists can agree on the echo findings of the RV!
- Right Heart Cath – Ultimate Arbiter

Pulmonary Hypertension
- PAH is a severe disease with poor outcomes
- Median survival without treatment is 2.8 years
- 1-year, 3-year, and 5-year survival rates is 68, 48, and 34%, respectively
- Rx – Diuretic therapy and treat underlying cause
- Advance therapies may needed

Other causes of “edema”

Table 2: Pathologic Conditions and Diagnoses Associated With Bilateral Leg Edema and Pulmonary Hypertension

<table>
<thead>
<tr>
<th>Condition</th>
<th>No. (%) of Patients (N = 15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obstructive sleep apnea</td>
<td>3 (20)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>6 (40)</td>
</tr>
<tr>
<td>Asthma (clinical diagnosis)</td>
<td>1 (7)</td>
</tr>
<tr>
<td>Restrictive spirometry pattern</td>
<td>1 (7)</td>
</tr>
<tr>
<td>Mitral</td>
<td>5 (33)</td>
</tr>
<tr>
<td>Mitral</td>
<td>4 (27)</td>
</tr>
<tr>
<td>Arterial compression</td>
<td>4 (27)</td>
</tr>
<tr>
<td>Right heart failure</td>
<td>1 (7)</td>
</tr>
</tbody>
</table>

"Patients could have more than 1 condition or diagnosis."
Data on prevalence of RHF in CVI

Our study...
- Prevalence of Right Heart Failure in patients referred for venous insufficiency
- Prospective observational, single center – 300 patients (72 to date)
- All patients receiving Venous Incompetence Study → Right Heart Echo Evaluation, by RVT/ RDCS certified sonographers
  - RV / RA – Size and function
  - TR
  - TAPSE
  - RVSP

Our study...
- Venous incomp and Echo findings reviewed by 2 vascular medicine MDs and a 2 Cardiologists respectively
- Patient characteristics – BMI/ VTE History/ OSA etc.
- CEAP
- "STOPBANG" Questionnaire for patients without OSA

CVI + Mod/Severe RHF

My Practice
- C6 – GSV/ SSV reflux → Ablate/
- Sclero + gentle compression + Diuretics + CHF clinic
- C1-C5 – CHF clinic only
- Diffuse disease - ? Case by case/ discuss with cardiologist
- I don’t recommend deep vein interventions

Thanks