

Patient Assessment : Venous History, Examination and Introduction to Doppler and PPG
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THE CONSULTATION

This is the time we are evaluating the patient and the patient is evaluating us.

DURING THE CONSULTATION

- The patient concerns are being addressed.
- Your concerns about the patient condition are adequately conveyed to the patient.
- You convey an atmosphere of confidence, competence and thoroughness.
- The patient is motivated to partake in discussion.

- Taking a thorough history.
- Performing a methodical and thorough examination.
- Performing and /or requesting appropriate investigations.
- Providing informative discussion and literature for patient education.

■ Why the questionnaire?-as there are approximately 120 questions that need to be asked. The questionnaire dramatically reduces the consultation time and yet is thorough and allows the practitioner to focus on the important issues.

Become familiar with at least the revised BASIC CEAP classification- it is the universal language of the Phlebologist.

What do we want to achieve by the end of the patient assessment?

- CEAP classify.
- Determine the patients relative risk of thrombosis.
- Be confident that you have had a meaningful discussion with the patient.

Basic CEAP Classification

- Co-no visible or palpable signs of venous disease.
- C1-Telangiectasia or reticular veins
- C2-Varicose veins >3mm
- C3-Oedema
- C4a-Pigmentation or eczema
- C4b-Lipodermatosclerosis or atrophie blanche
- C5-healed venous ulcer
- C6- active ulcer

- In addition to these can add S-for symptomatic and A for asymptomatic

- Etiologic Classification

- Ec-congenital
- Ep-primary
- Es-secondary(Post-thrombosis)
- En-No venous cause identified

- Anatomical Classification

- As-superficial veins
- Ap-perforator veins
- Ad-deep veins
- An-No venous location identified

- Pathophysiological Classification

- Pr-reflux
- Po-obstruction
- Pr,o-reflux and obstruction
- Pn-No venous pathophysiology identified

History

- Seeks to determine and clarify the answers given by the patient in the questionnaire.

- Questions of special interest.

1. Patients current concerns

- Do they have symptoms?

- Or is the problem “cosmetic”?

Symptoms attributable to venous disease

- Symptoms

- -Aching
 - Heaviness
 - Tiredness
 - Pain Throbbing
 - Burning
 - Tingling
 - Itching
 - Cramping
2. Family History

- Is there a family history of varicose veins?

–Inquire about blood relatives such as uncles, aunties and grandparents.

3. History of Thromboembolic Disease

■Is there any family or personal history of thromboembolic disease, in particular, a past history of DVT?

–Warfarin

–Heparin

–Plane Travel

–Pregnancy

–Past Leg fractures- these can localise venous abnormalities and can also be a site of undetected DVT.

5. Past Procedures to Varicose Veins

■When and what venous procedures have been performed?

–Ligation and stripping

–Ambulatory phlebectomy

–Ultrasound guided sclerotherapy

–EVLV

–Normal sclerotherapy

–Cutaneous laser therapy

6. Satisfaction

■Was the patient satisfied with the treatment they received?

■If not – why?

■Was it due to

–Pain

–Time involved

–Cost

–Poor results – below patient expectations(is the patient realistic)

–Perceived complications

7. Future Plans

■Is the patient planning an overseas trip in the near future?

–Is the treatment appropriate before travel?

–If we proceed with treatment are we putting the patient at increased risk?

–Are we able to achieve the expected result before the trip?

8. Medication

■What medication are they taking?

–HRT

–OCP

–NSAI

–ASPIRIN

–FE / VITAMINS

Examination

■Relate to the patient's concerns

- Clarify the venous anatomy

- Locate sites of reflux

- Assess the severity of reflux

Stand

Inspection

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- Thighs.

- Legs.

- Non Venous clues to venous disease.

Non Venous Clues to Venous Disease

■ Asymmetrical swelling or oedema – ? suggesting possible past DVT(C3)

■ Scars – may have caused venous distortion

■ Skin discoloration (C4a)

■ Early Venous Eczema

■ Also known as erythematous dermatitis and can progress to blistering, weeping and scaly eruptions (C4a).

■ Suggestive of CVD

■ ATROPHIE BLANCHE

■ Usually around the ankle and appears like white porcelain (C4b)

■ Represents skin atrophy

■ Sign of severe CVD

Lipodermatosclerosis-chronic inflammation with fibrosis of the skin and subcutaneous tissue (C4b)

Corona Phlebectasia-early sign of advancing venous disease

ULCERATION- full thickness skin defect that fails to heal and is sustained by CVD(C6)

Venous Examination

■ Large Varicose Veins

– Truncal

– Branch Veins

– Related to Incompetent Perforators

■ Small Veins

– Reticular Vein Patterns

– Telangiectasis

Most Common Sites of Reflux

■ Sapheno-femoral junction

■ Sapheno-popliteal junction

■ Perforating Veins

■ Superficial Veins

– Reticular

– Telangiectasias

Most Common Sites of Reflux

■ ***Sapheno-femoral junction***

Most Common Sites of Reflux

■ Sapheno-femoral Junction

■ ***Sapheno-popliteal junction***

Most Common Sites of Reflux

- Sapheno-femoral junction
- Sapheno-popliteal junction
- ***Perforating Veins***

Perforator veins(Old Names)

Note new classification- depicting the designated location is now preferred(eg. Cocketts 1st,2nd and 3rd now known as upper,middle and lower posterior tibial perforators.

- Clinical assessment alone is an incomplete and often insufficient assessment of the venous system.
- Often the underlying etiology is rarely apparent particularly in a complex presentation.
- Diagnostic evaluation is necessary if one is to understand the particular venous hemodynamics of an individual patient.
- Most advanced phlebologists would not proceed without further investigation – the two simplest being continuous wave Doppler and photoplethysmography but of course the “gold standard” is a duplex scan.

Comments

- Duplex ultrasound has become the “gold standard” in the diagnosis of both deep venous thrombosis and venous insufficiency. Most diagnostic centres have replaced CWD and PPG with duplex ultrasound.
- It is controversial whether HHD examination alone is sufficient before undertaking treatment.
- However educated phlebologists must have knowledge of these tests and their physiologic background.

Is there a Role of CWD?

- ABI index in patients with suspected arterial insufficiency who also have features of CVD.
- May not be very specific but is very sensitive to weak signals such as small perforators in areas of poor responding telegiectasias. These small sites of reflux are often missed with duplex scanning.

■ “Stethoscope of the phlebologist should be present at every venous examination which in essence allows for coupling of the physical examination and physical investigation.”

■ This is considered by many the minimum level of investigation before any treatment is initiated.

■ Is an excellent screening tool.

CWD

■ Takes practice and is user dependant and can identify flow abnormalities such as reflux in the superficial veins and deep veins (Austrian Physicist-Johann Christian Doppler).

■ Requires methodical and systematic approach

CWD

CWD

Who do we use CWD on?

- All patients during the initial examination

- And most patients at subsequent reviews

Where on the Lower Limb do we use CWD?

- I focus on the most common sites of superficial reflux

- 1. Sapheno-femoral junction and great saphenous vein in the thigh

- 2. Sapheno-popliteal junction and small saphenous vein in the calf

- 4. Perforator sites

- 5. Small incompetent veins.

Examination of Sapheno-Femoral Junction with CWD

Examination of Great Saphenous vein with CWD

Examination of Sapheno-popliteal junction with CWD

Examination of Perforator Veins with CWD

CWD and deep system.

- The CWD was first introduced by Strandness and Baker in 1960's. It was applied to the diagnosis of DVT and later deep vein insufficiency.

- Examination is performed with patient supine and slightly leg down.

- Again the commonest sites of deep vein reflux are examined.

Commonest sites of deep vein reflux

- Common femoral vein at the inguinal region.

- Popliteal vein in the popliteal fossa.

- Post tibial vein behind the medial malleolus.

Photoplethysmography (PPG)

CWD can assist with identifying sites of reflux. PPG assists by quantifying the reflux in a reproducible manner.

Photoplethysmography – Method of Use

Basic Fact regarding the use of PPG

- The fact that needs to be understood is that normally refilling of blood into the venous circulation occurs only through the arterial circuit and this normally takes at least 20 – 25 seconds

- A value of less than 20 seconds indicates the presence of an abnormal refilling channel – namely retrograde flow through the superficial or deep venous system.

- But to have retrograde flow – this means the presence of incompetent valves in the system.

PPG measures the Degree of Venous Valvular Incompetence

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