

Patient Assessment: Venous History, Examination and CEAP

The first consultation with the patient is a time of evaluation. It is a time when we are evaluating the patient and the patient is evaluating us! If you are mindful of this fact it will influence the way you conduct yourself during the time spent with the patient.

During the consultation we need to satisfy a number of entities. These include: -

- The patient
- Medico-legal fraternity
- Medicare
- Us

So the consultation needs to be structured so that all the above requirements are met.

To satisfy the patient we must: -

- Address the patients concerns.
- We must convey our concerns regarding their condition.
- Convey an atmosphere of confidence, competence and thoroughness.
- The patient is motivated to partake in discussion.

To satisfy Medicare for a prolonged consultation we must: -

- Take a thorough detailed multi-system history.
- Perform a methodical and thorough multi-system examination.
- Perform or request appropriate investigations.
- Provide informative discussion and literature.
- All of which needs to be recorded and documented.

The venous history to be adequate entails asking about 120 questions which is time consuming and fatiguing and often resulting in indecisive answers from patients.

These include questions from the following categories.

1. Presenting complaints and symptoms.
2. Aggravating and relieving factors.
3. Questions relating to onset of disease.
4. Pelvic congestion.
5. Past venous history.
6. Past vein treatment history.
7. Past medical history.
8. Gynaecological and obstetric history.
9. Family history.
10. Psychological history.
11. Social history.
12. Medication list.
13. Allergies.
14. Other

How does one ask and get answers to 120 questions and still be able to complete the consultation within the time frame?

It is suggested that you prepare a pre-printed patient questionnaire that can be filled out by the patient prior to the consultation. Sample questionnaires can be found in most Phlebology textbooks and can be customised to suit you. Making use of these can dramatically reduce the consultation time and yet is thorough and allows the practitioner to focus on the important points of interest.

The phlebological consultation has its own agenda apart from satisfying the various parties described above. What we want to be able to do at the consultation is to: -

1. CEAP classify-therefore make a diagnosis.
2. Determine the patient's relative risk of thrombosis.
3. Formulate a management plan.
4. Be confident that there has been a meaningful discussion.

When performing history and examination you must always be thinking in the language of the Phlebologist. That is the CEAP classification. This is the universal language of the Phlebologist that allows for UNIFORM diagnosis and for meaningful COMMUNICATION internationally.

HISTORY

With taking the venous history one is seeking to determine and clarify the answers given in the questionnaire but also to then seek answers to questions of special interest. I tend to focus to clarify the following questions of special interest: -

1. What are the patients concerns- do they have symptoms? Or is their problem just cosmetic? These two patients have very different expectations.

2. Are there symptoms of venous disease?
 - Aching
 - Heaviness
 - Tiredness
 - Throbbing Pain
 - Burning
 - Itching
 - Cramping

These symptoms are typically worse with prolonged sitting and standing and are worse towards the end of the day. The symptoms are usually relieved by walking or by elevating the legs or by wearing compression. Other diagnosis should be considered if there is no typical association of the symptoms.

3. Is there a family history of venous disease?

One must inquire about blood relatives with known venous disease.

4. Is there personal or family history of Thromboembolic disease?

Specific questions need to be asked to jolt their memory

- Have they ever taken warfarin or required injections into the tummy?
- Have they ever had leg problems following plane travel?
- Past history of leg fractures? These may produce local distortion of venous anatomy and also be sites of undetected DVT.
- Any leg problems with pregnancy?

5. Have they had past procedures to the veins?

If so, then when and what was performed? Eg. High ligation and stripping, ambulatory phlebectomy, UGS, EVLT etc.

6. Were they satisfied with the past treatment? If not why? Was it due to pain/or time involved/cost/poor results/perceived or real complications? Perhaps they have unrealistic expectations!

7. Future plans.

- Are they planning an overseas trip soon? If so will you be able to achieve the result in time? Are there risks with proceeding with treatment and pending plane travel?
- Are they planning a pregnancy soon?

8. What medications are being taken?

- HRT/OCP/NSAI/Iron/Vitamins/antibiotics-are they contraindicated?

This needs to be documented and having a patient questionnaire with room for notes is very useful.

EXAMINATION OF THE PATIENT

The aim of the examination is to:-

1. Identify clearly the patients concerns.
2. Clarify the venous anatomy.
3. Locate the proximal sites of reflux.
4. Determine the severity of reflux.

Patient positioning for examination is important and most Phlebologists use an elevated stand. The design of the stand should be given consideration. At the very least the stand should have a supportive bar that the patient can grip to allow for stability during examination.

We then INSPECT the patient looking at: -

1. Abdomen for any distended veins, which suggests possible obstruction to IVC.
2. Look at the skin for malignant skin lesions.
3. Look at the groin and perineum to see if vulval veins are present suggestive of pelvic vein reflux. Always ask permission and explain what you are looking for!
4. Thighs
5. Legs
6. Non-venous clues to venous disease.

Non venous clues suggesting venous disease.

- Foot posture –are they flat footed-may increase risk of incompetent calf perforators.
- Asymmetrical swelling may be suggestive of previous undiagnosed DVT.
- Surgical scars may lead to abnormal venous patterns.
- Skin changes-general skin discoloration.
 - oedema (C3)
 - Early venous eczema. (C4a)
 - Pigmentation. (C4a)
 - Atrophie blanche. (4b)
 - Lipodermatosclerosis. (C4b)
 - Ulceration-healed (C5) or active (C6).

Venous Clues-venous Examination

I tend to categorize the veins into two groups and always try and related the location to the main system it relates to.

1. Large veins -Truncal- eg GSV/SSV
 - Branch veins- eg ALVV/AMVV/PTVV
 - Related to Incompetent perforators.
2. Small veins -Reticular veins
 - Telangiectasias

Methodical examination is required and I tend to focus on the commonest sites of reflux.

1. Sapheno-femoral junction and GSN
2. Sapheno-popliteal junction and SSV
3. Perforating veins
4. Superficial veins.

CEAP Classification

C- Clinical Manifestations

E-Etiologic Factors

A-Anatomical Consideration

P-Pathophysiology

The CEAP committee quickly established that to develop a UNIVERSAL classification system for CVD **also** required a consensus on the **definitions** of the words used in the classification.

- **CVD** – including the full spectrum of morphological and functional abnormalities of the venous system from telangiectasias to venous ulcers.
- **Telangiectasias** – a confluence of dilated intradermal venules of <1mm in diameter. Synonyms include spider veins, hyphen webs and thread veins.
- **Reticular veins** – dilated bluish subdermal veins usually between 1mm - 3mm in diameter. Synonyms include blue veins, subdermal varices and venulectasias.
- **Varicose veins** – subcutaneous dilated veins greater than or equal to 3mm in diameter as measured in the upright position. Synonyms include varix, varices and varicosities.
- **Corona Phlebectatica** – a fan shaped pattern of numerous intradermal veins on the medial or lateral aspects of the ankle and foot. Synonyms include malleolar flare and ankle flare.
- **Oedema** – a perceptible increase in volume of fluid in the skin and subcutaneous tissue characteristically indenting with pressure. Usually located in the ankle but also can extend to the leg and foot.
- **Pigmentation** – a brownish darkening of the skin resulting from extravasated blood, which usually occurs in the ankle region but may extend to the leg and foot. A sign of increasing venous pressure due to CVD.

• **Eczema** – an erythematous dermatitis which may progress to blistering, weeping, or scaly eruption of the skin of the leg. Commonly located near varicose veins but can be localised anywhere on the leg and reflects uncontrolled CVD.

• **Lipodermatosclerosis** – localised chronic inflammation and fibrosis of the skin and subcutaneous tissue of the lower leg and suggests severe CVD.

• **Atrophie Blanche** – A localised whitish and atrophic skin area surrounded by dilated capillaries and sometimes hyperpigmentation and is a sign of severe CVD.

• **Venous Ulcer** – Full thickness defect of the skin most frequently seen in the ankle region that fails to heal spontaneously and is sustained by CVD.

Basic CEAP Classification

CLINICAL Classification

- C0- no visible or palpable signs of venous disease.
- C1-telegiectasia 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 thrombus)
- En-no venous cause identified

ANATOMICAL Classification

- As-superficial veins
- Ap-perforator veins
- Ad-deep veins
- An-no venous location found

PATHOPHYSIOLOGICAL Classification

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

Basic CEAP classification - example

•Painful swelling of the leg and varicose veins plus lipodermatosclerosis and active ulceration where duplex scan on May 17, 2007 demonstrated axial reflux of the GSV above and below the knee, incompetent perforators and axial reflux in the femoral and popliteal veins.

•Basic CEAP- C6,S,Ep,As,p,d,Pr

In the basic CEAP classification we pick the highest clinical presentation which in this example is an active ulcer (C6) and apply an S for symptomatic as the patient has painful swelling. The etiology is primary and denoted with (Ep) and followed by the anatomical classification which is in the superficial, perforator and deep system and denoted by (As,p,d). This is followed by the pathophysiology, which is reflux and denoted by (Pr). Phlebologists anywhere in the world if given this formula would be able to give the above description.

However additions to the basic CEAP have been made to allow for the Advanced CEAP classification. These additions include:-

Date of Classification

As venous disease is not static it is recommended that any CEAP classification be followed by a date that classification was made.

It was also decided by the CEAP committee that as a precise diagnosis of the underlying venous pathology is the basis for a correct classification it is recommended that the level of investigation utilised be included in any CEAP classification.

Level of Investigation

- Level 1- office visit with history and examination and/ or use of HHD.
- Level 11- non-invasive – Duplex scan and /or PPG.

- Level 111 – Invasive – varicography, ascending and descending venography, venous pressure measurements, spiral CT scan or MRI.

The CEAP committee also felt that greater accuracy should be given to the anatomical location of the venous pathology.

Anatomical locations

- Same as basic CEAP with the addition of 18 named and numbered venous segments used to localise the venous pathology.

·SUPERFICIAL VEINS

- 1) Telangiectasias/ reticular veins.
- 2) Great saphenous vein reflux above knee.
- 3) Great saphenous vein below knee.
- 4) Small saphenous vein.
- 5) Nonsaphenous veins.

·DEEP VEINS

- 6) Inferior vena cava.
- 7) Common iliac vein.
- 8) Internal iliac vein.
- 9) External iliac vein.
- 10) Pelvic-gonadal, broad ligament veins, other.
- 11) Common femoral vein.
- 12) Deep femoral vein.
- 13) Femoral vein.
- 14) Popliteal vein.
- 15) Crural-anterior tibial, posterior tibial, peroneal veins (all paired).
- 16) Muscular-gastrocnemial, soleal veins, other.
- 17) Perforating veins, thigh.
- 18) Perforating veins, calf

Advanced CEAP classification- example.

Painful swelling of the leg and varicose veins plus lipodermatosclerosis and active ulceration where duplex scan on May 17, 2007 demonstrated axial reflux of the GSV above and below the knee, incompetent calf perforators and axial reflux in the femoral and popliteal veins. No obstruction.

•Basic CEAP- C6,S,Ep,As,p,d,Pr

•Advanced CEAP-C2,3,4b,6,S,Ep,As,p,d,Pr 2,3,18,13,14 (2007-05-17, L11)

In the advanced CEAP classification we include all the clinical manifestations which in this case is varicose veins (C2) swelling or oedema (C3) lipodermatosclerosis (C4b) and active ulceration (C6) and is listed consecutively C2, 3, 4b, 6. This is followed by an s for symptomatic, as they are painful. Therefore C2, 3, 4b, 6, s. The etiology is still primary and denoted by Ep. The anatomy is still in the superficial, perforator and deep system and denoted by As, p, d. The pathophysiology as reflux and denoted by Pr. So far we have C2,3,4b,6,s,Ep,As,p,d,Pr which is now followed by the more accurate anatomical listing. The reflux is in the GSV above and below the knee (2,3) and includes reflux in the femoral vein (13) and the popliteal vein (14) and incompetent calf perforators (18). Therefore C2,3,4b,s,Ep,As,p,d,Pr,2,3,13,14,18. This is then followed by the date of the classification May 17, 2007 and denoted as 2007-05-17 and is followed by the level of investigation, which was a duplex scan Level 11. Both the date and level of investigation are placed in brackets (2007-05-17, L11). Therefore the completed advanced CEAP classification is C2,3,4b,sEp,As,p,d,Pr,2,3,13,14,18(2007-05-17,L11).

Statistically with the history and examination we are about 50% right in our assessment. Most Phlebologists would not proceed with treatment without further investigation.

The two simplest methods being the use of Continuous Wave Doppler (CWD) and Photoplethysmography (PPG) - the ultimate of course being a Duplex Scan.