CEAP Classification Of Venous Disorders

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Definition/Introduction

During the Fifth Annual Meeting of the American Venous Forum 1993, John Porter suggested a classification for venous disease, just like the TNM (tumor/node/metastasis) classification for cancer. In 1994, the American Venous Forum created a classification system to aid universally uniform diagnosis and comparison of chronic venous disorders. In 1995, the classification was incorporated into the "Reporting Standards in Venous Disease." In 2004 the classification underwent revision, which retained the basic CEAP categories but improved the underlying details. The name CEAP classification stands for Clinical (C), Etiological (E), Anatomical (A), and Pathophysiological (P).[1][2][3]

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Issues of Concern

Seven clinical categories are recognized as below:[1][2][4]

- C0 No visible or palpable signs of venous disease
- C1 Telangiectasies or reticular veins
- C2 Varicose veins; distinguished from reticular veins by a diameter of 3mm or more
- C3 Edema
- C4 Changes in skin and subcutaneous tissue secondary to CVD
    - C4a Pigmentation or eczema
    - C4b Lipodermatosclerosis or atrophie blanche
- C5 Healed venous ulcer.
- C6 Active venous ulcer.
- S: Symptomatic
- A: Asymptomatic

The etiological classification divides into:

- Ec: Congenital
- Ep: Primary
- Es: Secondary
- En: No venous cause identified

Anatomical classification divides into four categories:

- As: superficial veins
- Ap: perforating veins
- Ad: deep veins
- An: no venous location identified

Last is the pathophysiology classification, divided into four categories:

- Pr: Reflux
- Po: obstruction
- Pr,o: reflux and obstruction
- Pn: no venous pathophysiology identifiable

In advanced CEAP classification, there is an addition of 18 named venous segments to locate the venous pathology.[1]

- Superficial veins
    - Telangiectasies or reticular veins
    - Great saphenous vein above the knee
    - Great saphenous vein below knee
    - Small saphenous vein
    - Nonsaphenous veins
- Deep veins
    - Inferior vena cava
    - Common iliac vein
    - Internal iliac vein

    - External iliac vein
    - Pelvic: gonadal, broad ligament veins, other
    - Common femoral vein
    - Deep femoral vein
    - Femoral vein
    - Popliteal vein
    - Crural: anterior tibial, posterior tibial, peroneal veins (all paired)
    - Muscular: gastrocnemius, soleal veins, other
- Perforating veins:
    - Thigh
    - Calf

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Clinical Significance

Before the CEAP classification, the diagnosis of the chronic venous disorder lacked precision in diagnosis. This problem had led to reporting errors in studies of the management of venous problems. CEAP classification was then adopted worldwide, providing a universally understandable description, and it became an instrument to standardize the diagnosis and allow better communication of chronic venous disorder diagnosis between healthcare professionals. Accurate classification and proper diagnosis of the disease will help to create a base for better management for this condition.[1][5]

Example of the CEAP classification application:

A patient comes in with swelling and tightness of the leg. On physical examination, the examiner observes varicose veins, lipodermatosclerosis, and healed ulceration. Duplex scanning report showed great saphenous vein reflux and popliteal and anterior tibial reflux. Signs of postthrombotic obstruction are negative.

- CEAP Classification: C2,3,4b,5,S , Ep, As,d, Pr

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Nursing, Allied Health, and Interprofessional Team Interventions

The use of CEAP classification results in an organized categorization of the critical elements of the venous abnormalities and clarifies the interrelationships between the causes, clinical manifestations, and anatomic distribution. Therefore, this classification method will help facilitate interinstitutional studies.[6]

To determine the CEAP classification requires an interprofessional team of healthcare professionals that includes nurses and clinicians in different specialties such as an internist, cardiologist, and radiologist. Besides doing a thorough physical examination to determine the clinical categories of the patient, it is essential to have a clear medical history of the patient to come up with the etiology of the disease. To identify specific

sites of venous obstruction, duplex ultrasound, computed tomographic (CT), magnetic resonance (MR), or catheter-based contrast venography are used.[7] [Level 1]

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Questions

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References

1.

Eklöf B, Rutherford RB, Bergan JJ, Carpentier PH, Gloviczki P, Kistner RL, Meissner MH, Moneta GL, Myers K, Padberg FT, Perrin M, Ruckley CV, Smith PC, Wakefield TW., American Venous Forum International Ad Hoc Committee for Revision of the CEAP Classification. Revision of the CEAP classification for chronic venous disorders: consensus statement. J. Vasc. Surg. 2004 Dec;40(6):1248-52. [PubMed]

2.

Lurie F, Passman M, Meisner M, Dalsing M, Masuda E, Welch H, Bush RL, Blebea J, Carpentier PH, De Maeseneer M, Gasparis A, Labropoulos N, Marston WA, Rafetto J, Santiago F, Shortell C, Uhl JF, Urbanek T, van Rij A, Eklof B, Gloviczki P, Kistner R, Lawrence P, Moneta G, Padberg F, Perrin M, Wakefield T. The 2020 update of the CEAP classification system and reporting standards. J Vasc Surg Venous Lymphat Disord. 2020 May;8(3):342-352. [PubMed]

3.

Waheed SM, Kudaravalli P, Hotwagner DT. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Jan 29, 2020. Deep Vein Thrombosis (DVT) [PubMed]

4.

Meissner MH, Gloviczki P, Bergan J, Kistner RL, Morrison N, Pannier F, Pappas PJ, Rabe E, Raju S, Villavicencio JL. Primary chronic venous disorders. J. Vasc. Surg. 2007 Dec;46 Suppl S:54S-67S. [PubMed]

5.

Eklöf B. CEAP classification and implications for investigations. Acta Chir. Belg. 2006 Nov-Dec;106(6):654-8. [PubMed]

6.

Kistner RL, Eklof B, Masuda EM. Diagnosis of chronic venous disease of the lower extremities: the "CEAP" classification. Mayo Clin. Proc. 1996 Apr;71(4):338-45. [PubMed]

7.

Souroullas P, Barnes R, Smith G, Nandhra S, Carradice D, Chetter I. The classic saphenofemoral junction and its anatomical variations. Phlebology. 2017 Apr;32(3):172-178. [PubMed]