

UIP Consensus on corona phlebectatica

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Corona phlebectatica is a fan-shaped pattern of numerous bluish intradermal veins with a diameter <3 mm on the medial and/or lateral aspects of ankle and foot in the inframalleolar area.

The corona phlebectatica was described in 1960 by Van der Molen ¹ as the association of "cup-shaped" dilatations (dilated subcutaneous veins), intradermal "telangiectases" (small blue veins and red venules) and "stasis spots" (clusters of dilated papillary capillaries) in the paraplantar (infra-malleolar) area.

The definition "corona phlebectatica" was used in the Basle study by Widmer ² as the definition of the first grade of chronic venous insufficiency.

However, it was not taken into account in the first CEAP classification ³ because its clinical significance was disputed in 1994.

In the 2004 revision of the CEAP,⁴ the corona was mentioned and defined as "*Fan-shaped pattern of numerous small intradermal veins on medial or lateral aspects of ankle and foot. Commonly thought to be an early sign of advanced venous disease. Synonyms include malleolar flare, and ankle flare*". It was not included in the classification, mainly because of the absence of clear-cut practical (operational) diagnostic criteria.

Vasquez M. *et al.*⁵ proposed in 2010 a revision of the VCSS scoring system including corona, but restricted its presence to a score of "1" in the varicose veins (mild).

Diagnostic criteria for corona phlebectatica can be summarized in two points:

1. using the CEAP "C" classes as a reference for ascending severity of CVD, the evaluation of the information linked to each of the four items of the corona (as described by Van de Molen) in a series of 524 limbs shows that "stasis spots" are the most specific severity marker, red intradermal venules the most sensitive one, and blue intradermal veins the most reliable. The combination capillary stasis spots and/or blue intradermal veins is the most informative;^{6,7}

2. a reproducibility study on 100 photographs by six experts shows that the blue intradermal veins are by far the most reproducible (unpublished inter-observer study). The consensus threshold for significant alteration being at least five non-confluent bluish intradermal veins. The occasional association with small local pigmented areas would shift the classification into C4.

According to the new recommendations two grades of severity are recognized:

1. incipient corona (or corona grade 1): more than 5 clusters of bluish intradermal veins in the submalleolar area;

2. definite corona (or corona grade 2): tortuous bluish intradermal veins with a diameter less than 3 mm in the submalleolar area, extended over the half length of the foot or more.

As suspected by Cockett 56 years ago,⁸ the link between corona phlebectatica and incompetent perforators of the lower leg has been recently shown.⁹

Statistical association with the severity of CVD

as shown in the ascending CEAP "C" classes was shown in cross-sectional studies.¹⁰

In the Basel Venous Study, based upon an 11-year follow-up of 1441 workers of the chemical industry, corona was shown by far the best predictor of subsequent occurrence of skin changes in the subjects with mild disease (C0 to C3) at study onset.¹¹

In a large case control study on the risk factors for leg ulceration, the corona phlebectatica was found to be the second best independent predictor after the presence of skin changes.¹²

In the Bonn Vein Study 2 corona grade 2 was associated with C3-C6 whereas corona grade 1 was equally distributed in all C stages (Rabe, Pannier, unpublished data).

These data are consistent with studies on the microscopic venous valves in the superficial cutaneous venules of the microvascular bed of the limb using casting resins and scanning electron microscopy of the corrosion specimens. These microvenous valves are found in small caliber veins from 20 μ m postcapillary venules onwards and are abundant in regions where gravitational back flow occurs.¹³

Not to be forgotten: corona phlebectatica is a strong clinical predictor of CVI and subsequent occurrence of skin changes.

Other reasons for localized telangiectases and venules in the foot region or "corona of the whole foot" in patients with atrophic transparent skin could be due to long-term use of corticosteroids, or to acrodermatitis chronica atrophicans (Lyme disease stage 3).

In order to stop its progression it is important to treat the underlying venous changes.

Finally, the corona phlebectatica is a highly significant clinical sign indicating chronic venous insufficiency. It has prognostic value for the progression of CVD. Corona phlebectatica should be evaluated in every patient with CVD. It should be considered for inclu-

sion in existing or future classifications/scoring of CVD.

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