

Utility of capillaroscopy in diagnosis of microcirculation alterations: Experience of a hospital outpatient clinic

F.Gallucci, R.Buono, A.Parisi, D.Morelli, A.Abate, F.Cinque, E.Marrone, C.Mastrobuoni, U.Valentino and P.Morella

Internal Medicine Unit 3, Cardarelli Hospital, Naples

Background

Nailfold-Videocapillaroscopy (NCV) is a non-invasive imaging technique of now proven efficacy in the "in vivo" evaluation of the microcirculation alterations that characterize various connective tissue diseases. It is perhaps the safest and most harmless test in medicine and is now a 'mainstream' investigation for rheumatologists, because a "scleroderma pattern" (SP) helps to differentiate primary from secondary Raynaud's phenomenon (RP). "Abnormal nail fold capillaries" (when referring to the "SP") are included in the 2013 American College of Rheumatology (ACR)/ European League Against Rheumatism (EULAR) classification criteria for Systemic Sclerosis (SS), scoring two points out of the nine required for classification, with "the exhortation to anyone interested in scleroderma and connectivity to equip themselves with the instrumentation to perform NCV and to train themselves in the technique for its correct use". The Italian contribution in the development of the modern and of a semiautomatic computerized reading system of the number of capillaries in each image is recognized as fundamental.

Methods

In our dedicated clinic, in 2022, we underwent NCV 324 patients (pts), mean age 46.3 y (range 14-85), with Raynaud-like skin manifestations (233 pts) or acrocyanosis (91 pts), of which 69

M (mean age 44.5 y; range 16-82) and 255 F (mean age 54.9 y; range 14-85), to evaluate the presence of one of the following patterns: "normal", "minor non-specific anomalies", "major non-specific anomalies", "SP" (early SP, active SP or late SP). We used Videocap 3.0, equipped with an optical contact probe with 200x magnification and image analysis software.

Results

Sixty pts (18.5%; 12M, 48F) showed a normal NCV pattern. 20.7% (67pts; 14M,53F) had minor nonspecific abnormalities; 115 pts (35.5%; 23M ,92F) had major non-specific anomalies. In 82 pts (25.3%; 20M, 62F), we observed a SP; among them, 19pts (3M, 16F) presented an early SP; 48 pts (11M, 37F) an active SP; 15 pts (2M, 13F) a late SP. The population consecutively referred to our clinic and therefore studied, was made up mostly of female pts. The average age was higher in the group of pts with SP than in those showing non-specific microcirculation anomalies.

Conclusion

Also in our experience NCV confirms to be a very useful and reliable tool in the diagnosis of microcirculation alterations associated with connective tissue pathologies and particularly in the differential diagnosis between primary and secondary RP.