Abstract

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Video capillaro scopic patterns in a population with microcirculation disorders: Experience of a hospital Outpatient clinic

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Background: Nailfold-Videocapillaroscopy (NCV), a non-invasive imaging technique of now proven efficacy in the "in vivo" evaluation of the microcirculation alterations that characterize various connective tissue diseases, is now a 'mainstream' investigation for rheumatologists, because a "scleroderma pattern" helps to differentiate primary from secondary Raynaud's phenomenon (RP). "Abnormal nail fold capillaries" (when referring to the "scleroderma pattern") are included in the 2013 American College of Rheumatology (ACR)/ European League Against Rheumatism (EULAR) classification criteria for Sistemic 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". It is perhaps the safest and most harmless test in medicine. The Italian contribution in the development of the modern NCV 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 2021, we underwent NCV 355 patients (pts.), mean age 49.4 years (range 13-86), with Raynaud-like skin manifestations (274 pts.) or acrocyanosis (81pts), of which 74 M (mean age 48.5 years; range 18-81) and 281 F (mean age 53.6 years; range 13-86), to evaluate the presence of one of the following patterns: "normal", "minor non-specific anomalies", "major non-specific anomalies", "scleroderma pattern" (SP) (early SP, active SP or late SP). To this end, we used Video cap 3 instrumentation, equipped with an optical contact probe with 200x magnification and image analysis software from DS Medica in Milan (Italy).

Results: Seventy-two pts. (20.3%) showed a normal NCV pattern (15 M and 57 F). 21.4% (76 pts.) had minor nonspecific abnormalities (16 M and 60 F); 121 (34.2%) pts. (25 M and 96 F) had major non-specific anomalies. In 86 pts. (24.1% of the total), of which 18 M and 86 F, we observed a SP; in particular, 23 pts. (4 M and 19 F) presented an early SP; in 47 pts. (11 M and 36 F) there was an active SP; one SP late, on the other hand, characterized 16 patients (3 M and 13 F). Although the population consecutively referred to our clinic and therefore studied, was made up mostly of female patients, we did not highlight statistically significant differences as regards the single patterns between the two sexes. The average age, on the other hand, was higher in the group of patients with scleroderma NCV than in pts. with a picture characterized by non-specific microcirculation anomalies.

Conclusion: Once again, also in our experience, NCV has proved 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.