

Usefulness of Nailfold Videocapillaroscopy to Evaluate Microvascular Damage in Patients with Long-Term COVID-19

Gallucci F, Marrone E, Parisi A, Romano C, Buono R, Abate A, Morelli D and Morella P

UOC Medicina Interna 3, AORN A. Cardarelli, Napoli, Italy

Background: Several patients (pts) infected with SARS-CoV-2 continue to have symptoms for a long time after the nasopharyngeal swab negativization (long-term COVID-19). Endothelial dysfunction represents a key pathophysiological factor in COVID-19. Nailfold videocapillaroscopy (NVC) is nowadays considered one of the best diagnostic techniques of non-invasive imaging to study the microcirculation in vivo. The aim of our study was to assess microvasculature damage in long-term COVID-19 pts by means of NVC.

Methods: We examined 18pts (12F and 6M), aged 53.9 years (range 29-84) with recent diagnosis of COVID-19 and two successive oropharyngeal swabs resulted negative for the SARS-CoV-2 genome, hospitalized in our ward for other acute pathologies or related to our NVC clinic. The control group consisted of 20 healthy subjects (hs) without previous or current SARS-CoV-2 infection with overlapping demographic characteristics. We used a VideoCap3.0 (DS-Medica), equipped with 200x optics.

Results: Long-term COVID-19 pts, compared to control subjects, showed a higher prevalence of meandering capillaries, enlarged capillaries, loss of capillaries, hemosiderin deposits expression of micro-hemorrhages and micro-thrombosis, sludge flow and pericapillary edema.

Conclusions: Long-term COVID-19 pts present greater microvascular abnormalities at NVC compared to hs. However, further studies with larger case series are needed to assess the clinical relevance of NVC in long-term COVID-19.

References

1. Gallucci F, Russo R, Buono R, Acampora R, Madrid E, et al. (2008) Indications and results of videocapillaroscopy in clinical practice. *Adv Med Sci* 53: 149-157.
2. Østergaard L (2021) SARS CoV-2 Related microvascular damage and symptoms during and after COVID-19: consequences of capillary transit-time changes, tissue hypoxia and inflammation. *Physiological Reports* 9: e14726.