FRI0645 NAILFOLD CAPILLAROSCOPY IN DIABETES MELLITUS TYPE 2

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Background: Diabetes mellitus (DM) is characterized by chronic hyperglycemia states and the development of specific microvascular disorders such as retinopathy and nephropathy. Conventional methods are usually used to study the vascular compromise of this entity, however, the use of capillaroscopy for the evaluation of capillary microarchitecture is not frequently used.
Objectives: The objective of this study was to identify vascular alterations in patients with type II diabetes mellitus and to determine the relationship between capillaroscopic findings and clinical manifestations.
Methods: Observational, descriptive and prospective of patients with diabetes mellitus II selected by inclusion and exclusion criteria. Subjects presenting signs/symptoms or history of any collagen disease, trauma presence in the nailfold due to cosmetic treatment or nail polish, were excluded. The capillaroscopy was performed by an experienced rheumatologist in a room with an ambient temperature of 20–23oC. The fourth and fifth fingers of the nondominant hand were chosen. The capillaries were observed using a 10x magnification capillaroscope (Dino-Lite) and photographs of the last distal row of capillaries were taken. The following capillaroscopic parameters were considered: capillary diameter (ectasia and giant capillaries), crosslinked capillaries, capillary tortuosity, ramified capillaries, avascular zones, hemorrhages, dominant morphology, subpapillar venous plexus visibility, cuticulitis and SD pattern. The images were analyzed by an experienced rheumatologist. Data was analyzed using SPSS. The non-parametric correlations were performed by tau_b Kendall and values were considered statistically significant when $p>0.01$ and they had two tails.
Results: 65 patients were included in the study, with a mean age of 57 years [39–80], of which 75% [49] were women and 25% [16] men. The capillaroscopic findings were evident in 83% of the study population. The most frequent alterations were tortuous capillaries in 63% [41], cross-linked capillary in 59% [38], avascular areas in 48% [34], ectasias in 31% [25]. In smaller frequency, giant capillaries 14% [9], arborified capillaries 11% [7], no haemorrhages, no SD pattern. The capillaroscopic findings representing vascular damage were greater in patients with Diabetes Mellitus than in the control group (Figure 1). Moreover, the capillary morphology in the control group was open versus tortuous in patients with DM. Those patients with capillaroscopic alterations had a longer time of evolution of the disease with an average of 12.8 years, compared to those who did not present alterations that had a mean evolution of the disease of 8.5 years, which shows that those capillaroscopic alterations represent progressive endothelial damage. In addition, an association between the presence of retinopathy and capillary damage at the nail bed level was demonstrated ($p>0.001$).

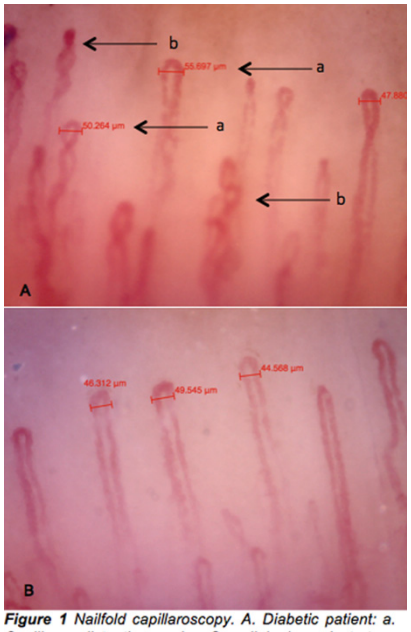

Figure 1 *Nailfold capillaroscopy. A. Diabetic patient: a. Capillary distention b. Crosslinked and tortous capillaries. B. Healthy subject, normal capilaroscopy. Original photos: Génessis Maldonado.*

Conclusions: Capillaroscopy has proven to be a non-invasive, reproducible and reliable technique for the evaluation of vascular microarchitecture within a large group of rheumatic diseases of the scleroderma spectrum. However, it has been shown that it can be used for evaluation other diseases outside the field of Rheumatology such as diabetes, being a tool that should be known by primary care physicians and healthcare workers.
Disclosure of Interest: None declared
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FRI0646 THREE-DIMENSIONAL NAIL IMAGING BY OPTICAL COHERENCE TOMOGRAPHY: A NOVEL BIOMARKER OF RESPONSE TO THERAPY FOR NAIL DISEASE IN PSORIASIS AND PSORIATIC ARTHRITIS

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Background: Nail disease is a common feature of psoriasis and psoriatic arthritis (PsA) and can impact quality of life significantly. The assessment of nail disease, unlike skin disease, is challenging with no tissue biomarkers feasible. Commonly used clinical outcomes include the Nail Psoriasis Severity Index (NAPSI) or the modified NAPSI system which are subjective. Optical Coherence Tomography (OCT) can detect changes in psoriatic nails and is a potential tool to assess response to therapy (1).
Objectives: To evaluate OCT imaging changes in cases with nail psoriasis following 6 month-therapy with Apremilast, a PDE4 inhibitor with known efficacy for nail disease in psoriasis and PsA.
Methods: Forty fingernails from four psoriatic patients were imaged at baseline and after 6 month-treatment with Apremilast 30 mg bd using Vivosight OCT scanner (Michelson Diagnostics Ltd., Kent, UK). Three OCT scans were collected from each fingernail (1 transverse and 2 longitudinal – proximal and distal) totalling 240 scans available for analysis. OCT scoring of the forty fingernails, at baseline and six months later, was carried out for changes including: 1. leukonychia/white spots; 2. pitting/localized surface irregularities; 3. diffuse surface waving; 4. onycholysis; 5. subungual hyperkeratosis. OCT score was arbitrarily calculated based on the absence (=0) or presence (=1) of each feature on the three scans of the corresponding fingernail (range 0–15). Macroscopic nail features were scored at baseline and 6 months later using the NAPSI scoring system by a Dermatologist blinded to OCT findings and compared with OCT score. Data were expressed as median (range). Comparison between baseline and follow up measurements was performed using Wilcoxon matched-pairs signed rank test. Difference between two groups and correlation were calculated using Mann-Whitney test and Spearman's test respectively. Statistical analysis was carried out using GraphPad Prism software V.7.0.
Results: Based on NAPSI, twenty-eight/40 fingernails (70%) improved or remained stable after 6 months with the median NAPSI per nail falling from 3.5 (0–7) to 0 (0–6) ($p<0.0001$). The OCT evaluation showed that the entire gamut of nail changes exhibited improvement or stabilization in thirty-three/40 (82.5%) nails after 6 months with median OCT score per nail falling from 8 (3–14) to 4 (1–9) ($p<0.0001$). Difference of the change (Δ) of OCT score between baseline and follow-up significantly correlated with Δ-NAPSI ($r=0.71$, $p<0.0001$).
Conclusions: OCT is able to identify all common psoriasis related nail pathology and changes after treatment. Further studies with larger numbers are needed to validate its potential role as a biomarker for nail disease.
References:
[1] Aydin SZ et al. Dermatology 2013.
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FRI0647 COLOR DOPPLER AS A VALUABLE PROCEDURE FOR EARLY DIAGNOSIS OF OCULAR VASCULAR CHANGES IN BEHÇET'S DISEASE

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Background: Ocular involvement is a common and serious manifestation of Behçet's disease (BD). It occurs in about 70% of the patients and is associated with a high risk of blindness (Kaçmaz et al., 2008).
Color Doppler is used for imaging retrobulbar vasculature. It measures the peak systolic velocity (PSV) and end diastolic velocity (EDV), from which the resistance index (RI) is calculated in the ophthalmic artery (OA), central retinal artery (CRA), and posterior ciliary artery (PCA) to detect any abnormality in the retrobulbar vessels (Nagaoka, 2006).
Objectives: To determine and compare the orbital Color Doppler haemodynamic parameters of Behçet's patients with those of healthy subjects and to evaluate the OA, CRA, PCA flow velocities and resistance indices (RIs).
Methods: This study included thirty patients suffering from Behçet's disease satisfying at least 3 of the criteria of BD according to the International Study Group for Behçet's disease in 1990. 20 age/sex-matched healthy subjects served as a control group. All patients were subjected to history taking, clinical examination, full ophthalmological examination, routine laboratory investigations and Color Doppler ultrasound (CDU) examination.
Results: The patients' age ranged from 18 to 45 years with a mean of 31.0±7.5. Their disease duration ranged from 0.25 to 20 years with a mean of 5.71±5.84. There were diminished blood flow velocities of the OA, CRA and PCA as the peak systolic velocity (PSV) and end diastolic velocity (EDV) of these arteries were lower than normal while resistance flow indices (RIs) were higher than normal.