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WEDNESDAY, 12 JUNE 2019

14:15:00 – 15:45:00

Crystal I

SP0023 INTRODUCTORY TALK ON CRYSTAL ANALYSIS

Anne-Kathrin Tausche. University Clinic Dresden, Rheumatology, Dresden, Germany

Rheumatologists are used to do the arthrocentesis to diagnose (and treat) patients with joint effusions. Crystal arthropathies are the most common inflammatory joint diseases. So the prompt detection of (micro-) crystals in joint fluid by microscopic analysis is of outstanding importance to make the right diagnosis of the very common disease gout or CPPD-arthritis (1). Since many years the EULAR facilitates practical courses in microscopy of crystals to start the training of rheumatologists in that helpful technique. During the practical skill course the trainee will be shown how to properly prepare a slide of SF, analyze the preparation with ordinary light, simple and compensated microscope and learn to discriminate urate from CPPD-crystals^{2,3}.

REFERENCES:

- [1] Zhang W, et al.; EULAR Standing Committee for International Clinical Studies Including Therapeutics. EULAR evidence based recommendations for gout. Part I: Diagnosis. Report of a task force of the Standing Committee for International Clinical Studies Including Therapeutics (ESCISIT). *Ann Rheum Dis*. 2006 Oct;65(10):1301-11.
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WEDNESDAY, 12 JUNE 2019

14:15:00 – 15:45:00

Capillaroscopy I

SP0024 STANDARDISATION OF NORMAL VERSUS ABNORMAL AND PATHOLOGICAL CAPILLAROSCOPIC IMAGES

Vanessa Smith. Department of Rheumatology, Ghent University Hospital; 2Department of Internal Medicine, Ghent University; 3Unit for Molecular Immunology and Inflammation, VIB Inflammation Research Center (IRC), Ghent, Belgium on behalf of the EULAR Study Group on Microcirculation in Rheumatic Diseases

Abstract: Medical doctors frequently get patients with Raynaud's phenomenon (RP), a frequent symptom in the general population, referred. The importance of distinguishing normal capillaroscopic findings from (pathognomonic) abnormal (pathological) findings (scleroderma pattern), lies in the fact that this distinction allows the differentiation between a primary RP (not connected to any connective tissue disease [CTD]) from a secondary RP due to systemic sclerosis (SSc) and diseases of the scleroderma spectrum.

What is normal in primary RP?

A normal capillaroscopic pattern, by qualitative assessment, is characterized by a homogeneous distribution of hairpin shaped capillaries as a "comb-like structure", with a density of >7capillaries per mm, with a normal dimension and absence of large hemorrhages. Yet, there exists a wide intra- and inter-individual variety in a normal population which will be discussed in this session.

What is pathognomonic abnormal in patients with RP due to SSc?

Patients with the RP who have an underlying clinically recognizable (= with skin involvement) SSc show a very characteristic combination of capillary abnormalities in the nailfold, which can easily be assessed through qualitative assessment (= pattern recognition). Maricq et al. described last century, with the widefield technique (magnification X12–14) the scleroderma pattern. This pathognomonic combination contains the following: a striking widening of all three segments of the

capillary loop (arterial, venous and intermediate), loss of capillaries and disorganization of the nailfold capillary bed. Many branched "bushy" capillaries may also be observed.

In 2000, Cutolo et al. qualitatively assessed the nailfolds of an SSc cohort with patients fulfilling the American College of Rheumatology (ACR) criteria for SSc with the nailfold videocapillaroscopic (NVC) technique (magnification X200). According to the different proportions of the hallmark parameters of the scleroderma pattern (giants, capillary loss, hemorrhages and abnormal shapes: (neo) angiogenesis, Cutolo et al. defined three patterns "early", "active" and "late".

The central role of capillaroscopy in distinction between a primary and secondary RP due to SSc is reflected by the fact that capillaroscopy is one of the new ACR/EULAR criteria for classifying a patient as having SSc.

In this lecture the standard "FAST TRACK" recognition system of the EULAR Study Group on Microcirculation in Rheumatic Diseases to discern scleroderma patterns from non-scleroderma patterns will be taught to the attendees.

Suggested further reading:

Smith V, et al. *Rheumatology* (Oxford). 2016;55(5):883-90.

Cutolo M, et al. *Rheumatology* (Oxford). 2018;57(4):757-759.

Cutolo M, et al. *Autoimmun Rev*. 2018;17(4):344-352.

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SP0025 RELIABILITY IN THE LAST 10 YEARS: CAPILLAROSCOPIC CHARACTERISTICS VERSUS INSTRUMENTAL DETECTION

Ariane Herrick. University of Manchester, Salford Royal Hospital NHS Foundation Trust, Division of Musculoskeletal and Dermatological Sciences, NIHR Manchester Musculoskeletal Biomedical Research Centre, Manchester, United Kingdom

Background: With nailfold capillaroscopy there are different aspects of reliability to consider, including reliability of qualitative image grading (e.g. 'early', 'active' and 'late') and also of semi-quantitative and quantitative measures including capillary density, apical width and presence of giant capillaries. The reliability of image acquisition (i.e. test-retest reliability) is especially important if nailfold capillaroscopic parameters are to be used in longitudinal studies (e.g. clinical trials) which involve acquiring repeat images over time. Lastly when assessing reliability, it is important to recognise that the nailfold capillaries cannot always be clearly seen, and cannot therefore be evaluated.

Objectives: To highlight the different aspects of reliability relating to nailfold capillaroscopy and how these have been addressed in studies over the last 10 years.

Methods: Review of recent studies

Results: 1. Intra-observer reliability has been shown in several studies to be higher than inter-observer.

2. Assessment of 'evaluability' varies between observers and therefore also needs to be taken into account when assessing reliability.

3. Subject to evaluability, certain parameters demonstrate high intra- and inter-observer reliabilities. Reliability differs across different capillaroscopic parameters.

Conclusion: Recent studies examining reliability of capillaroscopy suggest that certain parameters, including image grade, capillary density and apex width have high intra- and inter-observer reliabilities (subject to nailfold image evaluability, which remains a major challenge). Standardised training is likely to improve reliability.

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- [1] Murray AK, Vail A, Moore TL, et al. The influence of measurement location on reliability of quantitative videocapillaroscopy in patients with SSc. *Rheumatol* 2012; 51 : 1323-30.
- [2] Overbury R, Murtaugh MA, Fisher A, et al. Primary care assessment of capillary abnormalities in patients with Raynaud's phenomenon. *Clin Rheumatol* 2015; 34: 2135-40.
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- [4] Dinsdale G, Moore T, O'Leary N, et al. Intra- and inter-observer reliability of nailfold videocapillaroscopy - A possible outcome measure for systemic sclerosis-related microangiopathy. *Microvascular Research* 2017; 112: 1-6.
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- [6] Boulon C, Devos S, Mangin M, et al. Reproducibility of capillaroscopic classifications of systemic sclerosis: results from the SCLEROCAP study. *Rheumatology* 2017; 56: 1713-20.
- [7] Cutolo M, Melsens K, Herrick AL, et al. Reliability of simple capillaroscopic definitions in describing capillary morphology in rheumatic diseases. *Rheumatology* (Letter) 2018; 57: 757-9.