


epidermal necrolysis (TEN) were published in your journal last year.¹ They highlighted the higher rate of infectious triggers in children than in adults. This message is especially important for us, as the son of author S.W. had SJS/TEN triggered by *Mycoplasma pneumoniae*, which accounts for up to 50% of infectious causes. S.W. experienced first-hand the frustration of aetiological uncertainty in this disease. Accurate diagnosis of mycoplasma-induced SJS/TEN is important as it allows for continuation of simple analgesia (otherwise implicated as a possible trigger), possible avoidance of further drug allergy testing (which can be inconclusive), focused treatment of mycoplasma with antibiotics, and management of recurrence risk.

Mycoplasma aetiology can be suspected in cases with limited skin involvement but predominant mucositis. The history may be difficult to distinguish, as the SJS/TEN prodrome includes upper respiratory tract symptoms, but chest X-ray shows consolidation in up to 79% of patients.² Polymerase chain reaction (PCR) and serology are the laboratory tests of choice, but interpretation is difficult due to false positives (e.g. asymptomatic carriage or previous infection). We caution against interpretation of a single positive result as confirmation of mycoplasma aetiology in SJS, especially if considering other possible triggers. If mycoplasma is suspected, microbiologists should be involved early to aid appropriate investigations and interpretation of results.

Comparison of different laboratory tests is outlined in Table 1. The diagnostic gold standard is serology: IgG and IgM should be measured acutely and at 2–4 weeks to assess for an initial IgM increase then subsequent fourfold IgG rise.³ The collection rate of this later sample to establish seroconversion can be as low as 6.6%.⁴ The table highlights some emerging technologies, which currently have limited availability, especially in hospitals without a research lab, which could consider off-site testing. Matrix-assisted laser desorption/ionization time of flight is appealing with its low cost and high accuracy; however, it relies on positive culture, which takes time and significant laboratory expertise, making it less useful acutely. Loop-mediated isothermal amplification (LAMP) is more rapid than PCR but is unable to test the same sample for multiple pathogens at once, making it less versatile. While mycoplasma tests have not been specifically validated in SJS/TEN, during an SJS outbreak in 2013, mycoplasma PCR was positive in five of seven cases, and serology in two of three.⁵

It is our opinion that a combination approach of serology (including a repeated blood test for paired sera) and PCR is justified in the population who fit the clinical picture of mycoplasma-induced SJS/TEN. While serology is of limited use acutely due to the turnaround time, mycoplasma confirmation is useful when following up these children, as a positive result highlights a population at higher risk for recurrence and informs decisions about drug avoidance. Individual response to the trigger plays a part and we suggest that genomic-variant analysis of survivors of these rare diseases may be enlightening.

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Conflicts of interest: S.W. works within the biotech industry and has a client working on LAMP technology for diagnosis of SARS-CoV-2. However, he does not work with any company listed or have any work current or planned in mycoplasma testing. His interest in writing this letter is from a parent's perspective, as well as it being a core value of his company and himself to support improved collaboration that influences better clinical outcomes with improved diagnostics.

Nailfold capillary abnormalities: a possible cause for nail psoriasis?

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DEAR EDITOR, Digital video nailfold capillaroscopy (DVNC) is an efficient and noninvasive technique for the evaluation of local

microcirculation. It has been widely used in the diagnosis and prediction of several kinds of connective tissue diseases. Currently, reports on changes of the nailfold capillaries (NFCs) in patients with psoriasis vulgaris (PV) with associated nail involvement are scarce, and the existing data are not conclusive. Using DVNC, we found that NFC abnormalities may relate to nail psoriasis (NP).

Thirty-seven patients with PV were recruited: 19 had nail involvement (mean age 42.6 ± 12.1 years, disease duration 13.1 ± 11.0 years) and 18 did not have NP (age 32.2 ± 9.1 years, disease duration 7.9 ± 5.2 years). Seven of the patients with PV with nail involvement received systemic therapy, including biologics (interleukin-17A or tumour necrosis factor- α inhibitor), methotrexate or acitretin, but the NP of these patients has not yet improved significantly. To avoid the potential effect of smoking on the study, any patients and healthy controls who had a long-term smoking history were excluded. Twenty-nine age- and sex-matched healthy volunteers were studied as a control group. All of the patients and the control group had no other autoimmune disease, and patients with psoriatic arthritis or other finger-joint disease were excluded.

We evaluated the fourth finger of the nondominant hand of each individual for good transparency of the skin and the best visibility of morphological alterations of capillaries. All participants were asked to avoid smoking and drinking beverages

with caffeine 4–6 h before the examination. In the DVNC examination, four consecutive images in the middle of the nailfold were collected to analyse the mean score value of each parameter, including capillary density, architecture, morphology of capillaries and blood flow characteristics.¹ The blood flow velocity was measured by the spot tracking method. The study protocol was approved by the local ethics committee of the First Affiliated Hospital of Nanjing Medical University and all participants gave written informed consent.

Compared with the control group, the capillary density of patients with PV was significantly decreased ($P < 0.001$). The diameters of NFCs were markedly increased, including the arterial limb ($P < 0.05$), venous limb ($P < 0.001$) and apex ($P < 0.05$). The blood flow velocity was significantly decreased ($P < 0.001$) (Figure 1). There was no correlation between the blood flow velocity and the course of disease or age of patients. Those patients with psoriasis on systemic therapy or phototherapy were excluded when the correlation between the blood flow velocity and Psoriasis Area and Severity Index (PASI) or body surface area (BSA) was analysed, and the results were not statistically significant.

Semiquantitative scoring criteria were adopted to analyse the morphology of capillaries, in which the cases with $> 30\%$ crossing and branching capillaries were classified as having effective morphological abnormalities.² Overall, 51% of

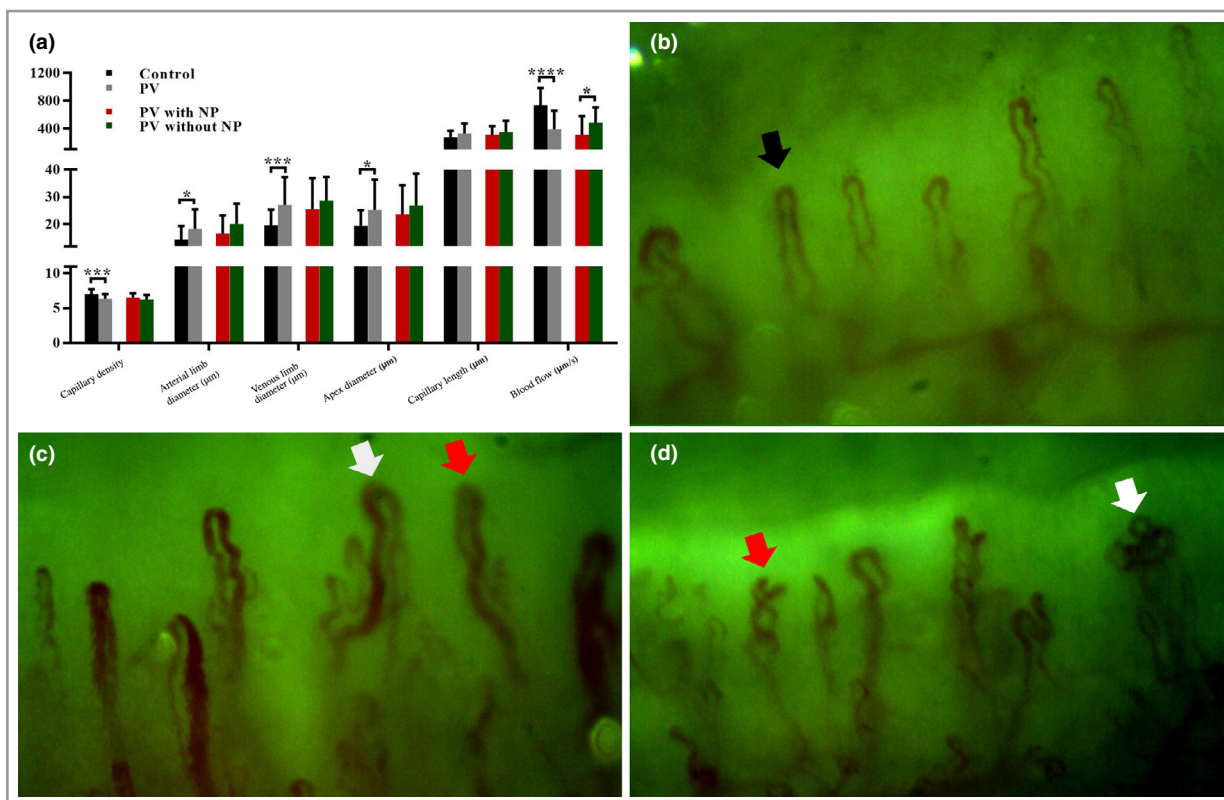


Figure 1 (a) The comparison of density, architecture and blood flow velocity between patients with psoriasis vulgaris (PV) and healthy controls, and patients with PV with and without nail psoriasis (NP). (b) The normal U-shape capillary of a healthy control (black arrow). (c, d) The capillary morphology of PV, (c) with or (d) without NP, showing crossing (white arrow) and branching (red arrow) capillaries. * $P < 0.05$, *** $P < 0.001$, **** $P < 0.0001$ by t-test or Mann–Whitney U-test.



patients with PV had effective morphological abnormalities, which was more than in healthy controls ($P < 0.01$). Among patients with PV there was no significant difference in the density or capillary architecture between those with and without NP, but the blood flow velocity of the fourth nail of those with NP was significantly lower than in those without NP ($P < 0.05$). In total 63% of patients with NP had effective morphological abnormalities.

Based on these findings, it was concluded that patients with PV had significant NFC abnormalities, including decreased capillary density, increased proportion of abnormal morphological capillaries, decreased blood flow velocity and dilated capillary loops. Bakirci Ureyen et al. reported that the nail fold vessel resistive index (NVRI) was higher in patients with PV and nail involvement than in the healthy control group, and NVRI was higher in psoriatic nails with tortuous capillaries than in nails without tortuous capillaries, as measured by ultrasound.³ Capillary endothelial cell dysfunction could trigger inflammatory responses including immune complex deposition and complement cascade activation, which would thicken the vessel wall to increase resistance in the bloodstream.^{4–6}

Patients with PV without NP already showed significant NFC abnormalities, and these changes, especially decreased blood flow velocity, can lead to trophic disturbances in the periungual region.⁶ Such inflammatory factors accumulate easily around the nail and then cause nail damage. Low blood flow of NFCs can also be a consequence of NP, which may be related to the effect of a local inflammatory reaction of the psoriatic nail on NFCs. Branching capillary is a form of neoangiogenesis, which might be a compensation for the slow blood flow and the decreased capillary density. Our study shows no significant correlation between the blood flow velocity and PASI or BSA, which needs to be verified through further investigations with large samples.

Taking the evidence together, our study found concrete abnormalities in the NFCs of patients with PV. Low blood flow of NFCs may well be a cause of NP or a secondary consequence of NP, and further studies are needed.

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Occupational dermatology in the time of the COVID-19 pandemic: a report of experience from London and Manchester, UK

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DEAR EDITOR, The coronavirus disease 2019 (COVID-19) pandemic has resulted in healthcare systems responding to rapidly rising demand. Simultaneously, increased infection prevention measures for staff, which includes additional personal protective equipment (PPE) and more rigorous hand hygiene procedures, has resulted in an increased incidence of occupational skin disease in frontline staff.¹

From April to June 2020, self-referral occupational dermatology 'drop-in' and virtual clinics were established at Guy's and St Thomas' NHS Foundation Trust (GSTT) and Salford Royal NHS Foundation Trust (SRFT) to support frontline staff. We describe our patient cohorts, delineate the commonly seen diagnoses and offer practical management advice.

Questionnaires were completed for each consultation, with 167 consultations (146 staff, average age 35.7 years, range 23–69) at GSTT and 92 (85 staff; average age 39.5 years, range 24–59) at SRFT. Overwhelmingly, staff were female (85.1% at GSTT, 87% SRFT), reflecting the workforce demographic (Table 1).

Occupational hand dermatitis is well recognized in healthcare workers. Lan et al. reported occurrence in 74.5% of 526 staff in Hubei province, China.¹ Irritant contact dermatitis (ICD) was present in 97.1% of staff with hand dermatitis at GSTT and 76% at SRFT, reinforcing the importance of preventative strategies for frontline workers. Within our trusts an information leaflet was publicized in trust briefings and on intranets. Moisturizers were made freely available to all staff. This is particularly

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These data are from different clinical trials and cannot be directly compared.

Co-primary endpoints PASI 90 and IGA 0/1 at Week 16 were met.**Secondary endpoints. †N= mNRI, missing data were imputed with mNRI (patients with missing data following treatment discontinuation due to lack of efficacy or a TRAE were counted as non-responders; multiple imputation methodology was used for other missing data). [†]43.9% (n=189/431), and 43.4% (n=116/267) of biologic-naïve and TNFi-IR PsA patients achieved the primary endpoint of ACR 50 at Week 16 in BE OPTIMAL and BE COMPLETE, respectively (vs 10.0% [n=28/281] and 6.8% [n=9/133] placebo, p<0.0001); 54.5% (n=235/431) and 51.7% (n=138/267) maintained it at Week 52 (NRI).⁴⁻⁶

ACR 50, >50% response in the American College of Rheumatology criteria; **AS**, ankylosing spondylitis; **CRP**, C-reactive protein; **DMARD**, disease-modifying antirheumatic drug; **HS**, hidradenitis suppurativa; **IGA**, Investigator's Global Assessment; **(m)NRI**, (modified) non-responder imputation; **MRI**, magnetic resonance imaging; **nr-axSpA**, non-radiographic axial spondyloarthritis; **NSAID**, non-steroidal anti-inflammatory drug; **PASI 75/90/100**, ≥75/90/100% improvement from baseline in Psoriasis Area and Severity Index; **PsA**, psoriatic arthritis; **PsD**, psoriatic disease; **PsO**, psoriasis; **TNFi-IR**, tumour necrosis factor-α inhibitor – inadequate responder; **TRAE**, treatment-related adverse event.

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