The reliability of periodic acid-Schiff staining in the diagnosis of onychomycosis

Sir,

We read with great interest the article on "Comparison of potassium hydroxide mount and mycological culture with histopathological examination using periodic acid-Schiff staining of nail clippings" in a recent issue of IJDVL.[1] The authors' findings about high sensitivity of periodic acid-Schiff (PAS) staining in the diagnosis of onychomycosis is consistent with previous studies on the subject.[2,3] However, certain fallacies of PAS staining in this context deserve consideration as appended below.

Morphological differentiation of nondermatophytes from dermatophytes is not always feasible with PAS staining,[4] whereas culture shows significantly higher isolation rates and allows for accurate identification of genus and species of organism.[5] Culture has a high specificity of 82% compared with 72% with PAS staining.[6] Nondermatophytes and yeasts are not always contaminants, but can be primary invaders and pathogens.[4,7] Their identification is important as they are less sensitive and even unresponsive to current antifungal treatment available.[8] Moreover erroneous false PAS positivity is seen with psoriasis, starch particles, and serum parakeratotic cells.[4] As a result, a patient may be mistakenly diagnosed as a case of onychomycosis resulting in erroneous diagnosis and inappropriate treatment.

Therefore, despite its high sensitivity, PAS staining with histopathology is not an invaluable test in the diagnosis of onychomycosis owing to its,

1. Ineffectiveness in identifying the causative pathogen, which would aid in advocation of correct treatment.
2. False positivity with other inflammatory nail dermatoses as they may be indistinguishable histologically as also clinically.[9]
3. PAS is the least cost effective compared to potassium hydroxide mount and mycological culture.[10]

Thus concluding, culture remains the indisputable gold standard in diagnosis of onychomycosis.[11]

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