

## SHORT COMMUNICATIONS

### Plant Stellate Trichomes: Strange Contaminants Appearing in KOH Preparations

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We have observed stellate structures under microscopy on potassium hydroxide preparations of skin scrapings. These structures are starfish-shaped with three to eight legs joined in the center and are in whole or fragments (Figure 1). Although they are commonly observed on skin scrapings, their etiology and identity may be unknown to some dermatologists.

Cornelius and Shelley reported similar findings in 1968.<sup>1</sup> Following careful examination of their possible biological origins, they concluded that these were fragments of plant trichomes, also known as stellate hairs, the uni- or multicellular outgrowths present on the epidermal surfaces of plant vegetative and floral organs.<sup>1</sup> Based on their morphological characteristics, Cornelius and Shelly proposed that the origin of the stellate trichomes in their preparations were from the undersurface of leaves of *Viburnum dentatum*, or southern arrowwood.<sup>1</sup> Similarly, Fleischer et al. (1994) identified arrowwood trichomes as nonpathogenic artifacts on skin preparations.<sup>2</sup> Interestingly, these structures have also been observed as contaminants in pap smears.<sup>3</sup>

Given the long, tubular nature of the stellate trichome arms these structures may be mistaken for fungal hyphae or other fibrous material. For example, “floral-shaped fibers”, similar in morphology to the stellate structures we observed, were reported in skin samples from patients with Morgellons disease and hypothesized by the authors to be keratin fibers produced by keratinocytes.<sup>4</sup>

**Figure 1.** Plant stellate trichome. Typical appearance as seen on a potassium hydroxide preparation without skin scrapings (40X).



We suspected that these stellate structures were likely a contaminant from the air onto the slides rather than from the skin, and therefore performed potassium hydroxide preparations on slides without skin scrapings. The trichomes were found on multiple slides and were especially numerous (3-5 per slide) on slides that had been left on an open shelf for one week. This is not surprising since in addition to the *Viburnum* species noted previously, stellate trichomes have been described in Black Oak, hibiscus, and members of the mallow family and can be found in a wide range of trees and herbaceous ornamentals including some plants commonly found in homes and offices.

The purpose of this case is not only to remind dermatologists of the identity of this interesting appearing contaminant, but also to show that it is most likely coming from the environment and not from a patient's skin scrapings.

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