

Glitter Effects of Nail Art on Optical Coherence Tomography

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Optical coherence tomography (OCT) is a noninvasive imaging technology that can visualize nail morphology in diseases such as psoriatic arthritis or onychomycosis. We recommend removal of glitter nail art to properly assess nail pathology and decrease diagnostic delay. *Cutis*. 2023;111:295-296.

Practice Gap

Nail art can skew the results of optical coherence tomography (OCT), a noninvasive imaging technology that is used to visualize nail morphology in diseases such as psoriatic arthritis and onychomycosis, with a penetration depth of 2 mm and high-resolution images.¹ Few studies have evaluated the effects of nail art on OCT. Saleah and colleagues¹ found that clear, semitransparent, and red nail polishes do not interfere with visualization of the nail

plate, whereas nontransparent gel polish and art stones obscure the image. They did not comment on the effect of glitter nail art in their study, though they did test 1 nail that contained glitter.¹ Monpeurt et al² compared matte and glossy nail polishes. They found that matte polish was readily identifiable from the nail plate, whereas glossy polish presented a greater number of artifacts.²

The Solution

We looked at 3 glitter nail polishes—gold, pink, and silver—that were scanned by OCT to assess the effect of the polish on the resulting image. We determined that glitter particles completely obscured the nail bed and nail plate, regardless of color (Figure 1). Glossy clear polish imparted a distinct film on the top of the nail plate that did not obscure the nail plate or the nail bed (Figure 2).

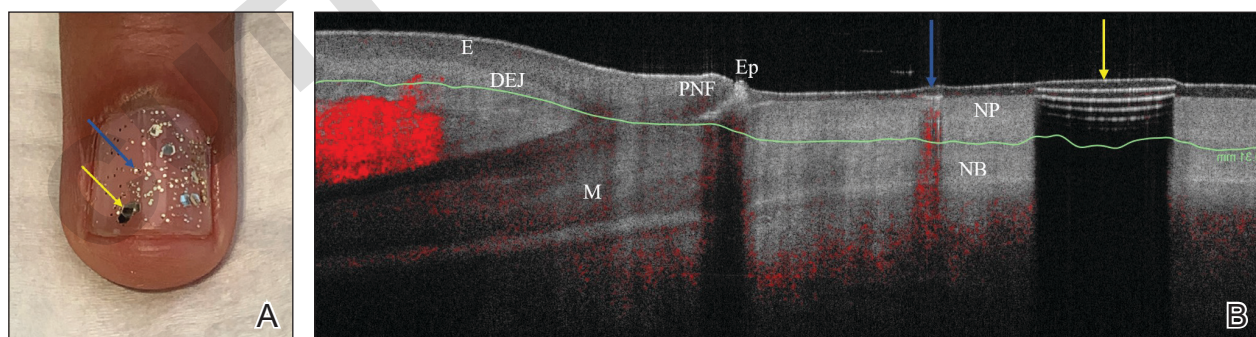


FIGURE 1. A, Gold glitter nail polish with large (yellow arrow) and small (blue arrow) glitter particles. B, Longitudinal optical coherence tomography images showed reflective small (blue arrow) and large (yellow arrow) glitter flakes embedded in nitrocellulose film with shadowing due to the effects of glitter. DEJ indicates dermoepidermal junction; E, epidermis; Ep, eponychium; M, matrix; PNF, proximal nail fold; NB, nail bed; NP, nail plate.

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The authors report no conflict of interest.

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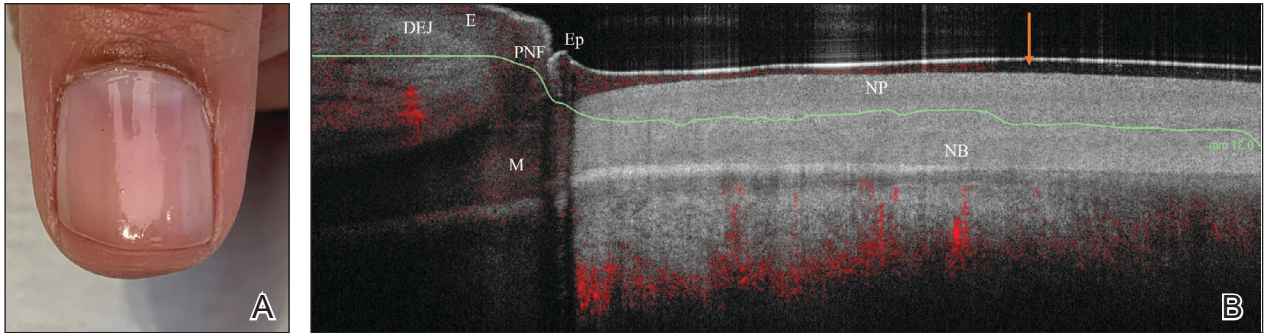


FIGURE 2. A, Clear nail polish. B, Longitudinal optical coherence tomography showed that clear polish created a distinct layer above the nail plate (orange arrow). DEJ indicates dermoepidermal junction; E, epidermis; Ep, eponychium; M, matrix; PNF, proximal nail fold; NB, nail bed; NP, nail plate.

We conclude that glitter nail polish contains numerous reflective solid particles that interfere with OCT imaging of the nail plate and nail bed. As a result, we recommend removal of nail art to properly assess nail pathology. Because removal may need to be conducted by a nail technician, the treating clinician should inform the patient ahead of time to come to the appointment with bare (ie, unpolished) nails.

Practice Implications

Bringing awareness to the necessity of removing nail art prior to OCT imaging is crucial because many patients partake in its application, and removal may require the involvement of a professional nail technician. If a patient

can be made aware that they should remove all nail art in advance, they will be better prepared for an OCT imaging session. Such a protocol increases efficiency, decreases diagnostic delay, and reduces cost associated with multiple office visits.

REFERENCES

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