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Letter

Treatment of pediatric pyogenic granuloma in a functionally and cosmetically sensitive area with the 1064nm Nd:Yag laser

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Abstract

There has been increasing interest in minimally invasive approaches to treat pyogenic granulomas. We report successful treatment of a pyogenic granuloma in a pediatric patient on a functionally and cosmetically sensitive area using the 1064nm Nd:YAG laser.

Keywords: pyogenic granuloma, 1064 laser, Nd:Yag

Case synopsis

A ten year-old girl presented with a two month history of a rapidly-enlarging papule on her left nipple. On exam, an 8mm pedunculated papule with increased vascularity was noted on her left nipple, effacing the nipple architecture. The lesion was clinically consistent with a pyogenic granuloma (PG). Following anesthesia with topical lidocaine 4% cream under occlusion for 30 minutes, laser treatment with the 1064nm Nd:YAG laser was performed. Two pulses were delivered to the center and base of the lesion, with fluence of 180J/cm², 3mm spot size and 6ms pulse width. At five week follow up, the lesion had decreased in size to 4mm and was significantly less erythematous. Repeat treatment with Nd:YAG laser at the same parameters was performed. At 14 week follow up, the lesion was less than 2 mm and skin-colored. After a third laser treatment was performed, the patient was instructed to return six months later, at which time the lesion was found to have completely resolved.



Figure 1. The pyogenic granuloma measured 8mm in size and effaced the architecture of the patient's left nipple. **Figure 2.** At five week follow up, the lesion decreased in size to 4mm and was significantly less erythematous.



Figure 4. Six months after the final treatment, the lesion has completely resolved. **Figure 3.** After two treatments with the Nd:YAG laser, the lesion was less than 2 mm in size and was skin colored.

Discussion

Pyogenic granulomas are common and benign acquired neoplasms found in children and adults. Diagnosis is typically made clinically, with the patient presenting with a history of a rapidly growing pedunculated vascular papule, frequently with easy bleeding [1].

A variety of treatment options have been used to treat PGs, including full-thickness surgical excision, shave removal followed by electrocautery, cryotherapy, topical imiquimod, and laser therapy [1,2]. Given this is a pediatric patient with a lesion located in a cosmetically and functionally sensitive area, the following factors were considered when choosing the treatment modality: the preservation of cosmetic and functional outcomes, minimal trauma to the patient, ease of wound care, and low recurrence rates.

Although surgical methods offer tissue diagnosis and the lowest recurrence rates, scarring, infection and bleeding can occur. Cryotherapy is painful and multiple treatments may be needed; topical imiquimod does not produce consistent results [3]. Laser therapy has been used with success, with most data published on pulsed-dye (PDL) and carbon dioxide (CO₂) lasers. PDL produces good results but is generally reserved for smaller superficial lesions because the energy does not penetrate deeply into the skin. Low recurrence rates are also seen after ablation with CO₂ lasers, but intralesional anesthesia is required in a pediatric patient and ablation of the lesion creates open wounds and a higher potential for scarring [3].

There have been case reports and small case series demonstrating successful treatment using the 1064nm Nd:YAG laser for raised lesions owing to the ability to coagulate the deep central afferent vessels [4]. Since a pathologic specimen was not obtained, the patient and her mother understood that a tissue diagnosis may be required if no improvement occurred after laser treatment. Our patient tolerated the procedure extremely well with no discomfort, wound care requirement, or scarring. Treatment of a PG involving the nipple using this method has not been reported to the authors' knowledge.

This case demonstrates the usefulness of Nd:YAG laser therapy as an alternative to treat PG, especially involving functionally and cosmetically sensitive areas in pediatric patients. This treatment preserves tissue function and causes minimal to no trauma.

References

1. Pagliai KA, Cohen BA. Pyogenic granuloma in children. *Pediatr Dermatol* 2004;21:10–3. [PMID:14871318]
2. Lee J, Sinno H, Tahiri Y, et al. Treatment options for cutaneous pyogenic granulomas: a review. *J Plast Reconstr Aesthet Surg* 2011;64:1216–20. [PMID:21316320]
3. Craig LM, Alster TS. Vascular skin lesions in children: a review of laser surgical and medical treatments. *Dermatol Surg*. 2013 Aug;39(8):1137-46. [PMID:23379675]
4. Hammes S, Kaiser K, Pohl L et al. Pyogenic granuloma: treatment with the 1,064-nm long-pulsed neodymium-doped yttrium aluminum garnet laser in 20 patients. *Dermatol Surg*. 2012 Jun;38(6):918-23. [PMID:22272571]