

## Research Article

## Open Access Full Text Article

## Non-Ablative Nd YAG XEO 1064 nm Laser for Treating Seborrheic Keratosis

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Seborrheic keratosis is a common benign skin neoplasm. It can present as a single tumor or in clusters. Its treatment with non-ablative laser is excellent. Objective. To describe the clinical characteristics of a patient with scattered lesions across the entire back of seborrheic keratosis and its treatment with non-ablative laser. Case report: An observational study was conducted on a 68-year-old patient with seborrheic keratosis, diagnosed dermatologically. The treatment with non-ablative laser was excellent, leaving no scar, and the lesions detached spontaneously within three to four weeks, without the need for surgery. Conclusions: Seborrheic keratosis is a benign dermatological lesion, and its treatment with non-ablative laser is effective, leaving no scar and not requiring surgery.

**Key words:** seborrheic keratosis, non-ablative laser.**Introduction**

Noncancerous (benign) skin growths. They tend to appear more frequently with age<sup>1</sup> Seborrheic keratoses are usually brown, black, or light brown in color. These growths (lesions) have a waxy, scaly, and slightly raised appearance.<sup>2</sup> They appear gradually, usually on the face, neck, chest, or back. Seborrheic keratoses are harmless and not contagious. They are usually circular or oval growths, ranging in color from light brown to black. They can develop as a single growth or in a cluster.<sup>3</sup> Seborrheic keratoses (SKs) are easily recognized through a clinical and dermatoscopic approach; however, some lesions behave in ways that mimic different skin conditions that lack typical clinical and dermatoscopic criteria.<sup>4</sup> Seborrheic keratoses (SKs) are easily recognized through a clinical and dermatoscopic approach; however, some lesions behave in ways that mimic different skin conditions that lack typical clinical and dermatoscopic criteria.<sup>5</sup> Seborrheic keratoses are very common benign tumors, especially in the elderly. It is not uncommon for them to coexist with other dermatological pathologies, including cutaneous lesions of mycosis fungoides. We present the case of a 41-year-old patient with mycosis fungoides and multiple seborrheic keratoses, predominantly located within the mycosis fungoides plaques. Histopathological findings of one of these lesions showed infiltration of the seborrheic keratosis by

atypical T lymphocytes. Seborrheic keratoses are benign lesions, and therefore are excised due to the symptoms they cause, such as itching, bleeding from irritation or friction with clothing, and because they are aesthetically bothersome. The lesions can be removed without risk of scarring using laser therapy.<sup>6</sup>

**Method**

An observational study was conducted on a diagnosed and treated case of seborrheic keratosis (SK), with lesions of varying sizes distributed across the entire back (extending from the base of the neck to the lower buttocks). The patient's medical history was thoroughly reviewed, and the clinical method was appropriately applied, allowing for the collection of the necessary data for the anamnesis and physical examination. Diagnostic and therapeutic methods were used, including dermatological analysis and the application of the XEO device, a Genesis laser handpiece with the following settings: 280 J/cm<sup>2</sup> fluence, 8ms pulse duration, 00 Hz repetition rate, and 3 mm spot size. And fluency 240 J /cm<sup>2</sup> pulse duration 6ms, repetition frequency 00 Hz and pulse size 3 mm.

**Clinical case**

A patient white, 6-8 years old, Phototype IV, according to the

scale classification Fitzpatrick went to the WAAS Medical Center in Madrid because of a feeling of itching all over. The back was caused by irregular injuries that had increased over time.

The physical examination revealed scattered lesions of varying sizes, warty, pigmented, and blackish throughout the region of Dorsum, approximately 2-3 mm and 10-12 mm in diameter, irregular, with well-defined edges, painless, firm and somewhat mobile, present for 3-4 years.

A dermatological study was performed that confirmed a benign lesion diagnosed as seborrheic keratosis.



Fig 1. Seborrheic keratosis lesions in the patient.

These injuries They were treated with a 1064 nm XEO neodymium YAG laser, programmed at 280 J/cm<sup>2</sup>, 8 milliseconds, 00 Hz and 3 mm, also at 240 J/cm<sup>2</sup> 1, 6 milliseconds, 00 Hz, and 3 mm. The procedure requires no anesthesia, is painless, and is performed on an outpatient basis, allowing a return to work without any downtime. Results are achieved when the lesion sloughs off within three to four weeks without leaving a scar or recurring. Surgery is not necessary. Conventional surgical treatment requires general anesthesia and an operating room. The surgical intervention is performed in two ways: 1. The lesion is removed en bloc, and the skin closes spontaneously. This process takes approximately two months and is called healing by secondary intention, frequently requiring moist wound care. 2. The lesion is removed, and the skin is closed using a flap interposition technique. This leaves a significant scar that affects the patient's appearance, incurs high costs, and results in lost workdays for the patient and their family, in addition to the discomfort caused by potential complications. The real advantages we offer in treating these lesions with the application of non-ablative laser technology at our Center are clear.



Fig. 2. Result of non-ablative laser treatment.

## Discussion

Seborrheic keratoses are benign skin tumors that are very common, and most people will develop them in highly variable numbers (from a few to hundreds) during their lifetime. They most frequently affect people over 30 years of age. These tumors can appear anywhere on the skin, although they have not been described on mucous membranes. When located on the trunk and numerous, they may present a “Christmas tree” pattern, with their longest axis parallel to skin folds or Blaschko's lines.<sup>7</sup> Seborrheic keratoses have not been associated with malignancy; they are considered benign lesions that generally constitute a cosmetic problem and occasionally cause mild symptoms, such as itching or irritation.<sup>8</sup> There are several histological forms of seborrheic keratosis (acanthotic, reticulated, irritated, macular, among others). The clonal subtype is characterized by well-defined or larger nests of basaloid cells within a seborrheic keratosis.<sup>9</sup> Seborrheic keratoses do not require treatment, and in patients with a high number of lesions, excision may be impractical. If they cause discomfort due to irritation, rubbing, or cosmetic concerns, they can be treated with cryotherapy, electrocoagulation, laser therapy, or excision.<sup>10</sup> Melanomas that clinically mimic other skin lesions, particularly seborrheic keratosis, can delay diagnosis and timely treatment. Differentiating between melanocytic and non-melanocytic lesions using dermatoscopy allows for the early detection of melanomas and prevents the misdiagnosis of seborrheic keratosis as a melanocytic tumor.<sup>9</sup> Dermatoscopy has been shown to improve diagnostic accuracy among dermatologists and enhance skin cancer detection even among non-dermatologists. For this reason, the use of this tool should be encouraged as an additional and complementary technique, since it significantly improves the sensitivity for detecting melanocytic lesions.<sup>2</sup> However, suspicious lesions should be biopsied to achieve not only a diagnosis but also histological microstaging of the lesion.<sup>11,12</sup> Seborrheic keratosis appears on the skin and is distinguished by a diagnostic triad: hyperkeratosis (thickening of keratin in the skin), acanthosis (thickening of the epidermis), and papillomatosis, which is the formation of invaginations of the epidermis into the dermis. The diagnosis based on morphological findings was seborrheic keratosis. This condition tends to have multiple and varied presentations, occurring primarily in areas of the body with skin.<sup>13</sup> The use of IPL can also be effective in treating seborrheic keratoses, as these are superficial and subtly pigmented lesions.<sup>14</sup> For this purpose, filters that allow the selection of short wavelengths (530 nm) should be used, as these act on the epidermis and are safe for treating superficial lesions. The mechanism of action is likely related to the absorption of radiation by epidermal melanin and subsequent thermal diffusion to surrounding cells; this causes epidermolysis, which increases keratinocyte regeneration with the removal of necrotic cells through micro-crusts, thus eliminating these keratinocyte lesions.<sup>14</sup> There are no published studies, but the British Skin Laser Study Group presented a series of treated seborrheic keratosis cases at the British Medical Laser Association meeting (2011).<sup>14-17</sup> Unlike the treatment of lentigines, high fluences are tolerated because seborrheic keratosis presents as lesions on the epidermal surface that absorb energy with relative preservation of endogenous melanin.<sup>18</sup>

Seborrheic keratosis (SK) is the most common benign skin tumor associated with aging, causing aesthetic concerns and potential discomfort. The growing demand for cosmetic interventions is driving the search for effective removal methods. One study compared three treatment modalities: curettage, 532 nm laser, and propane-butane cryotherapy.<sup>19</sup> Current evidence supports laser therapy as a safe and effective alternative to cryotherapy, curettage, and electrosurgery, especially when aesthetics are paramount.

Standardized parameters and trials including diverse skin types are urgently needed.<sup>20</sup>

## Conclusion

Seborrheic keratosis is a benign dermatological lesion, and its treatment with non-ablative laser is effective. The lesion sloughs off spontaneously in 3-4 weeks, leaves no scar, requires no anesthesia or surgery, is performed on an outpatient basis, and the patient can resume their normal activities.

## Conflict of interest

The authors declare that they have no conflict of interest.

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