Case Report

Nd-YAG Laser Treatment of Pilonidal Cysts

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Christine Lindholt, Jes S. Lindholt, Jan Lindholt MD - Denmark

ABSTRACT

A 38 year-old girl with a recurrent suppurative pilonidal cyst was successfully treated causally with an Nd-YAG laser, and with no recurrence at the 3-month follow-up. A similar success is observed for another 15 consecutively treated patients, including suppurative cases. The effect could be attributable to the ability of the YAG-laser to operate at a wave-length of 1064 nm and to penetrate the skin to levels deeper than that of most other lasers before the energy is absorbed in melanin and oxyhaemoglobin. Consequently, the contents of the cyst can be reached and destroyed. The treatment could be a very attractive alternative to open surgery.

INTRODUCTION

Surgical treatment of pilonidal cysts is associated with a considerable incidence of adverse events. An uneventful course in just 49% of cases was therefore considered a successful result at the presentation of a novel surgical procedure (1). The below text describes the preliminary experience with a novel laser-based method for the treatment of non-suppurative pilonidal cysts as an alternative or adjunct to the more common surgical excision.

CASE HISTORY

A 38-year-old female was referred for recurrent pilonidal cyst treatment. She had experienced open excision 10 years before, but now for an extensive period of time she had endured intermittent pain, bloody and purulent secretion and had a red, tender swelling in and at the natal cleft. The physical examination revealed 2 sinus openings in the natal cleft but no aggressive symptoms of inflammation or infection (Figure 1). The patient received two local Nd-YAG laser treatments at a wavelength of 1064 nanometres (nm) given at one month intervals. Fluence 40J/cm² with two 3.0 millisecond (ms) pulses, 20 ms delay and using a 15-mm circular handle. The natal cleft and sinus openings were radiated with a maximum overlap of 1/3 and in two parallel rows on both sides hereof to ensure exposure of the entire assumed extent of the pilonidal cyst. Following initial flare-up of soreness and redness, all local symptoms receded after the first week. After the second treatment, the patient was asymptomatic and subjectively felt that she had healed. Objectively, the sinus had healed, and there were no signs of inflammation. The patient remained asymptomatic 9 months after the initial treatment and the sinus openings had disappeared (Figure 2).

DISCUSSION

We describe a very lenient treatment technique compared with conventional surgery; a technique that seems to yield a satisfactory result. A PubMed literature search retrieved 29 articles in which laser therapy formed part of treatment; most frequently in the form of epilation and studies comparing laser excision to traditional procedures such as surgical excision using a scalpel, or diathermy to laser excision. Only two retrospective studies seem to have examined the possibility of a curative stand-alone laser treatment without compromising skin integrity (2, 3). However, the two studies used lasers and IPL light at wavelengths providing only few millimetres of skin penetration. Consequently, they effectively examined the epilation effect, and all patients experienced recurrence even though this occurred later than expected. The Nd-YAG laser used in this study operates at a wavelength of 1064 nm, and consequently
the laser waves penetrate deeper into the skin than most other laser types before the energy is absorbed in melanin and oxyhaemoglobin. Pilonidal cysts generally contain hair and an increased number of blood vessels caused by inflammation. This provides a number of theoretical treatment options which we have ventured to exploit by choosing a certain type of laser and laser settings to destroy the pilonidal cyst’s deep cavities instead of treating the skin, where melanin and oxyhaemoglobin are congruent chromophores. During the last 9 months we have treated another 15 consecutively referred patients with large and small as well as recurring, but non-suppurative pilonidal cysts with similar results.

It is remarkable how fast patients experience subjective relief. Even complicated cases with 3-4 previous surgical interventions and recurrence with accompanying soreness and secretion experience considerable subjective relief already in the first week after receiving laser treatment (Figure 1). Other factors than epilation must therefore be influencing the process. Furthermore, the reduction of hair is limited at the applied laser settings. How long patients stay recurrence-free or may be considered to be cured needs to be established in more comprehensive future cohort studies of longer duration. Such studies should also determine the need to carry out randomised studies.
figure 1. Before Ng-YAG treatment of recurring pilonidal cysts in a patient with four previous surgical interventions. Two secreting sinus openings of up to 5 mm are shown. Soreness in the surrounding area.

Fig. 2. Status at 1 month follow-up. Healed sinus openings and no signs of inflammation.