Diode Laser Hair Removal Around Ileo-Colo Ostomys Is Safe, Effective and Beneficial: A Pilot Study

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Background and Objective: Hair removal around an ileo-colo ostomy can cause a number of problems. We compared laser hair removal with mechanical shaving around the ostomy.

Method: Eleven patients were selected with hairy skin around the ostomy for therapy with an AlGaAs diode laser at 800 nm. Three to four treatments were given with an interval of 6 weeks.

Results: Ten patients completed laser therapy. The average hair reduction was 60% based on visual inspection. Shaving frequency reduced from once a week to once every 6 weeks.


Key words: ostomy; hydrocolloid adhesive membrane; hair removal by the Lightsheer Diode laser at 800 nm; skin problems

INTRODUCTION

Construction of an ostomy to collect urine or feces from the ileum or colon occurs in about 1.7 per 1,000 people, based on about 100,000 stoma patients in the UK with 60 million inhabitants [1]. With 16 million people, this implies about 27,000 ostomy patients in The Netherlands. The skin around an ostomy is continuously covered by a hydrocolloid adhesive membrane. Because a hairy skin reduces the adhesion strength of the membrane, hair removal of the skin around the ostomy is essential for an uncomplicated function. So far, mechanical shaving is the method of choice here, with epilation as the only alternative, not performed in the patients involved in this study. Nevertheless, hair removal by shaving is associated with adverse effects, for example, skin irritation and pseudo-folliculitis. These conditions are normally experienced as a mild discomfort, but are considered a major problem for patients having an ostomy. Because hair removal by laser therapy has become a standard procedure [2], we report our first experience of using a diode laser for hair removal of the skin around ostomys.

PATIENTS AND METHODS

Before selection of patients, a questionnaire was sent to 154 of the 27,000 ostomy patients in The Netherlands. Eleven patients with an ostomy were selected for the pilot study. They were all male. Five had an ileostomy, six a colostomy. Seven patients had Fitzpatrick skin type II and four had skin type III. Their age varied between 34 and 63 years. Informed consent was obtained. The laser used was an AlGaAs diode laser at 800 nm (Lightsheer Diode Laser System, Lumenis, Inc., Santa Clara, CA), operated at 26–34 J/cm² radiant exposure, 30–100 ms pulse duration, 0.5 Hz repetition frequency, and a spot size of 0.9 cm. The laser parameters chosen are based on literature data [2]. Before each therapy session two test laser pulses were given close to the ostomy, of increased dose compared to the previous session, and depending on the skin response and the patient’s pain reaction, the laser parameters with the highest dose where chosen. The time between the last test pulse and start of therapy was at least 5 minutes. During treatment, cooling was given by a ChillTip and by applying a cooling gel. Pre-cooling was not applied. After the laser session the skin was cooled immediately by cool packs for about 10 minutes. This period is long enough to reduce the possible discomfort following the laser pulses, but short enough to prevent problems of adhesion of the membrane. The area selected for laser hair removal was bounded by the diameter of the ostomy, and an outer diameter 2 cm larger than that of the ostomy, to prevent problems of adhesion in case other size

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membranes will be chosen in the future. After each laser session the patient was asked to fill in a questionnaire aimed to document possible skin changes occurring between the last and the next session.

Ileostomy patients were asked to come without food intake to prevent feces production; however, production of feces in colostomy patients cannot be influenced, except by irrigation. The patients were treated early during the day to prevent a possible disturbance of their fluid balance, which could affect attachment of the ostomy following therapy. Before laser the skin was marked with a white pencil and shaved. Before and after laser impacts the skin was photographed (Fig. 1). The next day the patients were asked to report their skin reaction.

The common accepted interval between consecutive laser sessions is 10–12 weeks [2], which corresponds with the hair growth cycle in this region. In this study we have chosen for intervals of 6 weeks, to reduce or prevent the need for mechanical shaving.

RESULTS

The questionnaire had a response of 52/154 (29.6%). The 24 patients without hair around the ostomy were left out for consideration. In 21 of 28 ostomy patients shaving was advised for hair removal by their ostomy nurse. Of these 21 patients, 11 had to shave one to three times a week, 8 at least once every 2 weeks and 9 minimally once a month. Twenty-one of 28 patients had skin problems after shaving, like irritation (10), pseudo-folliculitis (4), hair growth into the skin (1) or damage of the ostomy (6). Nineteen of 28 patients felt pain by removing the membrane when shaving was non-smooth. Fourteen of 28 patients showed interest in laser hair removal, of which 9 were older than 50 years. Eight of 28 patients had problems with shaving around the ostomy; in 4 the ostomy was outside the range of vision due to obesity, and 4 were not able to shave smoothly.

One patient with an ileostomy was denied permission for laser therapy by its treating gastroenterologist who feared possible, albeit undefined complications for its ulcerating enterocolitis. Therapy was completed by the 10 other patients.

The number of laser impacts in each session was between 102 and 225. Three to four treatments were given per patient in the study period of 6 months. After treatment, the skin around the ostomy showed a reactive erythema and perifolliculair edema, and took between a few hours to two days to recover. Six weeks after the last treatment the final result was assessed. An average hair reduction of 60% was achieved, based on visual inspection, and a reduced frequency of shaving from once a week to once every 6 weeks. There were no adverse side effects like hyperpigmentation, hypopigmentation, or blistering; the latter would have been a serious side effect here, causing reduced adhesion strength of the membrane and pain by removing it.

DISCUSSION

The results of this first report of laser hair removal around ostomys, by an 800 nm diode laser, show that the treatment is safe and effective, and thus a preferable alternative for shaving. The most important advantage is prevention of pseudo-folliculitis. The ostomy will not be damaged by a pulse of the laser of the appropriate dose due to the excellent blood circulation and absence of melanin. A high satisfaction level was noticed under the patients. No more shaving and an improved skin condition compared to mechanical shaving were the advantages reported by the patients. The quality of life improved markedly.

The choice of the laser parameters, that is, radiant exposure, pulse duration, repetition frequency, and spot size, and the cooling protocol were based on literature data [2] and recommendations by the company that provided the laser. We recommend starting laser treatment as soon as possible because mechanical shaving tends to become more difficult at older ages, for example, due to worsening of fine movements (e.g., due to rheumatism) and vision and, last but not least, the disappearance of melanin pigmentation of the hair, the target chromophore of laser therapy. We did not treat patients with a urine-ostomy, but we expect comparable results.
There are also drawbacks. Some clinicians are ignorant regarding the safety of laser impacts around an ostomy, demonstrated by the patient who was not allowed to have laser therapy by his treating gastroenterologist. There is pain sensation during treatment, the necessity of hair pigmentation, and laser hair removal is costly.

In conclusion, laser hair removal around an ostomy is safe and effective and of significant benefit for the patients. It likely becomes the preferred method for hair removal in ileo-colo-ostomy patients.

REFERENCES