

# Ultrasonography-guided intralesional diode laser for the treatment of Hurley II hidradenitis suppurativa : Results from a pilot study with 46 procedures

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## Abstract Content

**Introduction:** Because of the burden of complete excision followed by secondary intention healing, minimally invasive treatments of pilonidal sinus disease (PSD) have been developed, including intralesional application of a radial fiber connected to a diode laser set. With a one-year recurrence rate around 5% and therefore almost similar to that of lay-open primary excision, laser-assisted sinus closure trends to become the first choice treatment in simple PSD. Whether this mini-invasive technique could be useful in hidradenitis suppurativa (HS) remains to be determined.

**Aim:** To evaluate the early outcomes after intralesional diode laser for HS lesions.

**Patients and methods:** After receiving informed consent, we prospectively included patients with chronic non-complicated Hurley II HS lesions who were addressed for surgical treatment. Under general anesthesia, the fistula tract was identified through inspection, palpation and, for some patients, ultrasonography (US). External orifices were widened or opened if closed to allow sharp debridement using a curette and intralesional injection of povidone-iodine. A radial-emitting laser probe (Leonardo® dual 45 diode laser, wavelength 980-1470 nm, continuous energy of 10W) was introduced in the fistula tract and pushed to the stop. The laser was then activated and pulled back at an approximate speed of 1mm per second until evacuation. The whole procedure was repeated once. A simple dressing was applied and patients were instructed to change it daily until complete healing. Paracetamol and NSAID were prescribed to be used postoperatively on demand.

**Results:** We included 34 patients (24 women, 71%), median age 29.5 yrs (IQR: 24-39); 20 (59%) were current smokers and the median BMI was 25 (22.7-28.6). Treatment of 46 lesions were planned but one intermammary procedure was eventually cancelled because of the risk of skin burns and necrosis of a too superficial fistula (deroofing was performed). The locations were axillary (n=17), inguinal (n=16), perianal (n=4), inner thigh (n=3), buttocks (n=3) and others (n=2). Treated lesions evolved for a median 2 yrs (1-4); previous incisions and/or excisions were reported in 5 and 7 patients, respectively. The median length of the fistula tract was 20.5 mm (12-30). Median applied energy was 274 J (182-420) in median time of 28 sec (19-43). The median procedure duration was 7 min (6-11). US was performed intraoperatively for 22/45 lesions (49%). Except two patients discharged at day 1 after surgery, all patients were outpatients.

Pain at day 0 was scored at 0 or 39 lesions and 1 for 6. The median pain at day 2 was 2 (1-3). Early postoperative complications occurred for 12 lesions (27%) including bleeding (n=1, stopped by simple compression), abscess (n=4 treated by antibiotics and local care in 3 and deroofing in 1, burn-induced

necrosis of the external orifice (n=3, local care) and inflammatory flares (n=4, antibiotics).

With a limited follow-up of 99 days (ranges: 8 - 193), recurrence was observed in 5 patients (11%) and treated by deroofting (n=1), excision (n=1), or long course of oral antibiotics (n=2); therapeutic decision pending for the last.

**Discussion:** This prospective pilot study suggests that intralesional diode laser could be an option for managing Hurley II HS lesions. The procedure is easy to performed (outpatient clinic) and well-tolerated. Because direct visual control of the fistula tract is lost as compared to deroofting and excision, intraoperative US appeared helpful. The postoperative wound care is clearly lightened. Both complication rate (27%) and the recurrence rate (11%), higher than those observed for PSD, suggest that a finer selection of patients is necessary in terms of inflammation stage, tract length and depth, and perhaps other patients and disease characteristics to be determined in larger and multicenter studies. Whether perioperative antibiotics are required should for example be ascertained. The observation that results were not as satisfying for HS than for PSD may be interpreted as different pathophysiological mechanisms including intrinsic (HS) or extrinsic (PSD) inflammation processes.

**Conclusion:** Intralesional diode laser should be evaluated in the management of simple HS fistula tracts. It could be considered as an alternative to existing minor surgical procedures including deroofting and a convenient way to reduce postoperative wound care. Further studies are required to standardized perioperative management (potentially including perfect inflammation control) and indications.