

Eccrine Hidradenoma treated by Carbon dioxide Laser Vaporization

Dr.Fahad Abdulla.Msc. MD
Dr.Hala Al Homsy.MD

Abstract:

Eccrine hidradenoma is a rare benign solitary tumor of the skin, the only treatment is surgical removal recommended. We presenting a case of hidradenoma of the forehead in a male 30 years old, we treat him successfully with Carbon dioxide laser vaporization. To the best of our knowledge, this is the first case to be treated by CO2 laser in the reviewed literature.

Introduction:

ECCRINE HIDRADENOMA (EH) is an uncommon tumor that is usually solitary, sporadic, and has no regional predilection. It may occur at any age but tends to be most common in the third decades. It occurs more often in women than men with a ratio of 3:2. The tumors are firm dermal nodules 5-30 mm in size, and may be attached to the overlying epidermis which can be either thickened or ulcerated. Growth of EH is slow and there may be a history of serous discharge. The lesions are usually solitary and are most likely to be found on the scalp, face or anterior trunk (Ref.01). The histopathological features of this tumor characteristically show circumscribed masses composed of two cell types polygonal cells, whose glycogen content may give the cytoplasm a clear appearance, and elongated

darker and smaller cells, which may occur at the periphery. Cuboidal or columnar cells are seen lining duct-like spaces and clefts. The histochemical reactions and fine structure indicate an eccrine origin, with features of both secretory and duct cells (Ref.02). The EH may rarely become malignant. The treatment is surgical removal, and the use of CO2 laser to treat EH has not yet been reported.

Case report:

Male patient 30 years old a known case of psoriasis of the scalp, palmo-planter region presented with slightly itchy skin lesion on the forehead which bleed easily after scratching, the lesion has been progressively increasing in the size for the last 10 years (Fig.01). Clinical examination showed a well-defined erythematous crusted plaque about 4x3 cm in diameter irregular border and slightly indurated center (Fig.02). Two skin biopsies were taken and histopathological examination revealed nodular clear cell hidradenoma, no malignant change was demonstrated. Patient was not treated during the last 10 years because there was no complaint as the lesion was asymptomatic.

In an attempt to alleviate the shape and disfigurement of the lesion over the face and to avoid surgical morbidity, treatment with CO2 laser ablation was performed on the lesion, by using Dream pulse II surgical CO2 laser system (DAESHIN ENTERPRISE CO. Seoul, Korea).



Fig. 1



Fig. 2

Dermatology & Venereology Department
Hamad Medical Corporation
P.O. Box: 3050
Doha ñ Qatar.

The lesion was treated under local anesthesia with 1% lidocain with 1:100,000 epinephrine injection. After obtaining local anesthesia, the lesion was vaporized by superpulse CO2 laser (10,600 nm) wave

with a laser-to-target distance of 5.0 cm and a relatively defocused beam, several passes were performed with a 0.5mm handpiece with ranging influence from 4 to 7 W. Carbonization of the skin was wiped with saline solution between passes. The treatment was stopped when skin contraction was observed. The patient tolerated the procedure well, and there were no complications, local antibiotic ointment and erythromycin tab. 500mg BID for 1 week was given. Follow up monthly of the case showed a good response healing wound with minimal scar, Eight months postoperatively the treated lesion did not recur (Fig.03 &04) and showed cosmetically acceptable and satisfactory result for the patient.

Discussion:

Carbon Dioxide laser is used for tissue vaporization, coagulation, and cutting. It emits light at 10,600 nm that is strongly absorbed by water, which is the main component of the skin. Tissue charring from continuous wave CO2 lasers leads to damage at both the intended target and a peripheral zone affected by heat conduction (Ref.03). The earliest CO2 lasers used a continuous defocused wave of light for tissue

vaporization. Use of continuous wave CO2 lasers, however, often lead to scarring due to exposure of surrounding normal skin to excessive conducted heat. A recent advancement in the advent of pulsed CO2 lasers (including Ultrapulse, Coherent Laser Corporation, Palo Alto, CA; Novapluse, ESC Medical Technologies, Lexington, MA, Dream pulse II; DAESHIN ENTERPRISE CO. Korea) which produce superpulses of high peak flounces (energy/unit area) in brief pulse duration. With pulse durationís shorter than 1 millisecond thermal relaxation time of skin, reduction of potentially scarring heat conduction is obtained (These lasers typically generate a rapid succession of low energy subablative pulses.Ref.04&5). Most eccrine hidradenomas grow slowly over a period of years and remain benign. Injury or trauma often accelerates growth.

Although the treatment of choice is surgical, we attempt to try to treat this case by CO2 laser superpulse mode, as the patient many times rejected the surgical interference of the lesion, CO2 laser as alternate therapy was suggested to the patient who accepted this type of management and consent taken. To the best of our knowledge, this is the first case to be treated by CO2 laser in the reviewed literature.

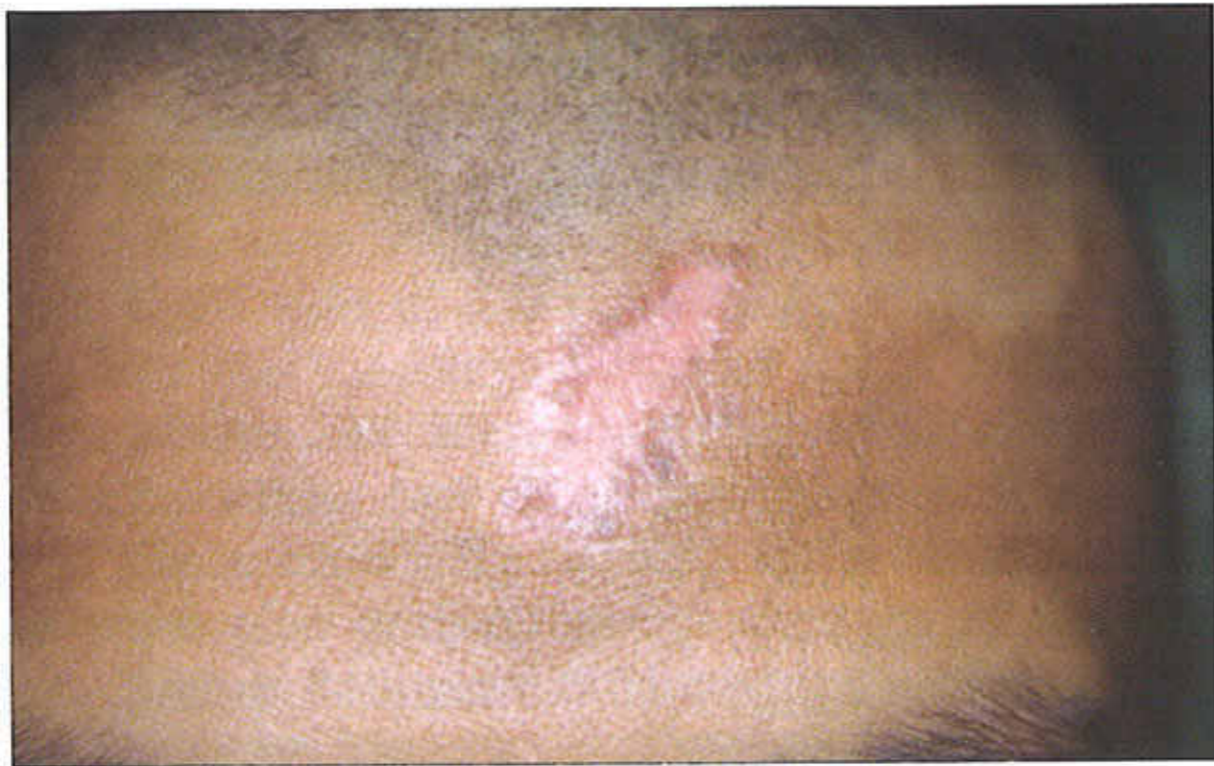


Fig. 3



Fig. 4

References:

1. Winkelmann RK, Wolff K. Solid-cystic hidradenoma of the skin. *Arch Dermatol* 1968; 97:651-61.
2. Hernandez-Perez E, Cestoni-Parducci R. Nodular hidradenoma and hidradenocarcinoma. *J Am Acad Dermatol* 1985; 12: 15-20.
3. Ratner D, Tse Y, Marchell N, et al. Cutaneous laser resurfacing. *J Am Acad Dermatol* 1999; 41:365-89.
4. Fitzpatrick RE, Goldman MP, Ruiz-Esparza J. Clinical advantage of the CO2 laser superpulsed mode. Treatment of verruca vulgaris, seborreic keratosis, lentigines, and actinic cheilitis. *J Dermatol Surg Oncol* 1994; 20:449-56.
5. Ross E, Domnakevitz Y, Skrobal M, and Anderson R. Effects of pulse duration on CO2 laser ablation: implications for skin resurfacing. *Lasers in surgery and Medicine* 1996:19.