# Correspondence

**Severe rhinophyma treated with double wavelengths carbon dioxide-GaAs laser: a case series**

Dear Editor,

Rhinophyma is a disfiguring condition of the nose characterized by hyperplasia of the sebaceous glands and dermal tissue, which usually represents the final stage of rosacea. Other variants including gnatophyma (chin), metophyma (forehead), otophyma (ear), and blepharophyma (eyelids) are rarely seen. Many different treatment modalities for rhinophyma have been utilized both alone and in combination including: traditional excision, cryotherapy, dermabrasion, electrosurgery, $CO_2$ laser, diode, and Er:Yag laser ablation, but as yet there is no agreement in the literature on the ideal treatment.

Rhinophyma consists of a slow, progressive thickening of the nasal skin and soft-tissue hypertrophy which may result in localized or generalized tuberous deformity of the lower two-thirds of the nose.[1] Rhinophyma is a benign condition, but the nasal deformation may severely affect both cosmetic and psychological aspects. We report four retrospective cases of mild-severe rhinophyma (range 58–85 years old) successfully treated with laser vaporization combining two different wavelengths: carbon dioxide ($CO_2$) 10,600 nm and GaAs 1,540 nm.

In two patients (Fig. 1a–c), oral therapy with tetracyclines and subsequent oral isotretinoin (0.5–1 mg/kg/die) for 6 months were effective in controlling inflammation episodes, but relapses were observed 6 months after suspension. The patients were scheduled for laser vaporization with a double-wavelength device (Youlaser MT apparatus, Quanta System, Solbiate Olona, Italy) emitting 10,600 nm and 1,540 nm wavelengths simultaneously. All informed consents were obtained. Troncular and local anesthesia were performed with bupivacaine + adrenaline (1:200.000). All patients underwent a single laser session using 1 mm spot size and 8 msec pulse delay, 8 W power at 2 msec pulse duration, and 10 W power at 0,25 msec pulse duration, respectively, for wavelengths 1,540 nm and 10,600 nm. During the treatment, the necrotic tissue was removed with a saline solution wet gauze, and we


**Figure 1** (a–c) A preoperative photograph of patient n.1 showing severe disfiguring rhinophyma; Pre-operative condition of patient n.2; (b–d) Two-month follow-up after treatment with double wavelengths carbon dioxide ($CO_2$) 10,600 nm and GaAs 1,540 nm; excellent cosmetic outcome at 12-month follow-up

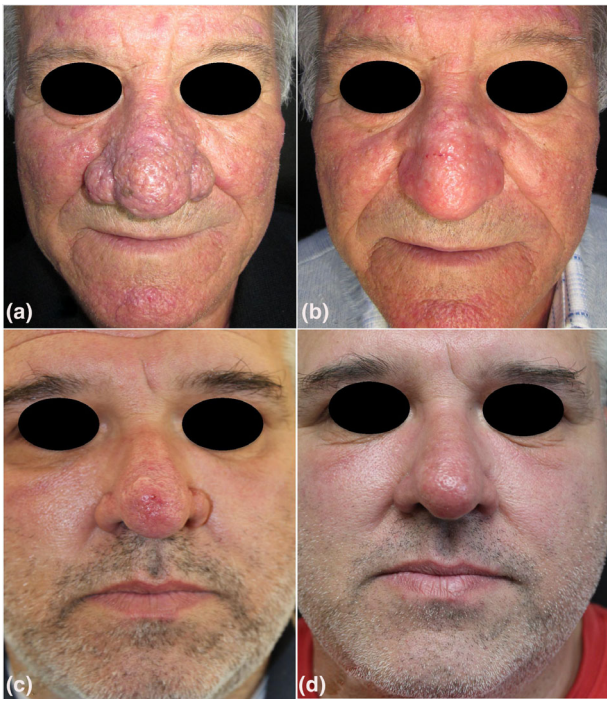


**Figure 2** (a–c) Preoperative patients n.3-4; (b–d) No recurrences at 12-month follow-up

evaluated the depth of ablation observing the sebaceous secretion of the removed tissue, which represented the guide for laser surgery. After the procedure, topical fusidic acid ointment was prescribed (twice daily) for 7 days, the vaseline ointment (twice daily) for 3 weeks more. Follow-up was 1 week and 4 weeks postoperatively, and we achieved a complete re-epithelialization at 30 days. None of the four patients had scarring or recurrences at 12-month follow-up (Figs. 1b–d and 2b–d).

Topical and oral antibiotics or retinoids have been used to control the early inflammatory stages, but they were not effective in improving the deformation induced by rhinophyma. Physical therapies such as traditional excision, dermabrasion, electrosurgery, $CO_2$, or Er:Yag laser ablation have been used to correct the rhinophyma, but each of these techniques showed some limitations, that is, surgical excision may cause excessive bleeding limiting the intraoperative visibility.[2] Furthermore the aforementioned techniques may have some disadvantages such as prolonged healing, crusting, postoperative pain, downtime, risk of scar formation, or alar notching. $CO_2$ laser emits an infrared light energy (10,600 nm) which vaporizes water-rich tissues in a non-selective manner, and it also produces effective hemostasis for blood vessels up to 0.5 mm in diameter achieving an excellent visualization of the operative field. However, fully ablative $CO_2$ laser may cause deep thermal injury leading to scarring or damage of the osteocartilaginous tissues.[2] New advances in laser ablation, such as fractional $CO_2$, yielded high-energy, "superpulsed"/scanned systems, or combination of surgical debulking with fractionated $CO_2$ reduced thermal injury leading to shorter downtime and minimal wounds formation. Madan et al used a $CO_2$ continuous mode to debulk the larger rhinophymas and a resurfacing mode (Silk Touch scanner) to reshape the nasal contours, obtaining a result classified as good to excellent in most patients.[1] Goon and co-authors combined the advantages of Er:YAG and $CO_2$ laser, that is, the low thermal vaporizing tool of Er:YAG and the coagulation capacity of $CO_2$ laser.[3] Moreira suggested that treatment of rhinophyma with $CO_2$ laser followed by pulsed dye laser may prevent progression after 1 year follow-up.[4] Our results suggest that patients with moderate-severe rhinophyma may benefit from treatment with double wavelengths $CO_2$-GaAs laser achieving a relatively rapid healing time. The simultaneous use of two wavelengths does not modify the ablation of each single pulse, and the GaAs 1,540 nm wavelength increases the superficial coagulation improving intraoperative visualization.[5]

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*Andrea Paradisi*[1], MD, PhD
*Francesco Ricci*[2]*, MD, PhD
*Paolo Sbano*[3], MD

[1]Dermatology Unit, "Cristo Re" General Hospital, Rome, Italy
[2]Melanoma Unit, IDI-IRCCS, Rome, Italy
[3]ASL Viterbo, UOSD Dermatology, C.O.B. Belcolle, Viterbo, Italy
*E-mail: fraric1984@libero.it

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