Treatment of Granulomatous Rosacea with Chromophore Gel-Assisted Phototherapy

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Case report

Granulomatous rosacea is a variant of rosacea characterized by discrete erythematous papules most commonly affecting the central face. It is a rare condition reported primarily in middle-aged women, and tends to have a chronic course often recalcitrant to therapy. We report a case of granulomatous rosacea treated with chromophore gel-assisted phototherapy (CGAP).

A 50-year-old woman of Lebanese background presented with a three-month history of a papulopustular eruption. She described paroxysms of papules affecting the glabellar, malar and mental regions. She denied any flushing or ophthalmological symptoms. Examination demonstrated tumid papules and pustules affecting the glabella with malar erythema composed of fine telangiectasia. There was no appreciable phymatous change (Fig.1a). Biopsy demonstrated ectatic dermal blood vessels, and pandermal inflammation with perifollicular granulomas composed of lymphocytes and neutrophils (Fig.2 a & b). Microbial studies including special stains, as well as bacteria, Mycobacteria and deep fungal culture & PCR were negative. The clinical and pathological findings were consistent with granulomatous rosacea. Modest improvement was observed with topical metronidazole, ivermectin, and brimonidine and systemic minocycline 50mg BD led to the development of headache. The patient was reticent to pursue alternate systemic treatments and accordingly a trial of CGAP was pursued. The patient received twelve treatment sessions over six weeks involving application of a 2mm layer of the photoconverter chromophore gel (Kleresca®) followed by irradiation with a multi-LED lamp (415nm and 447nm) (Kleresca®, Balerup, Denmark). Significant improvement was observed in both the papulopustular and erythematotelangiectatic components of her rosacea (Fig. 1b). To date, there has been no relapse in her rosacea off all active treatment, at a time-point six months after cessation of CGAP.

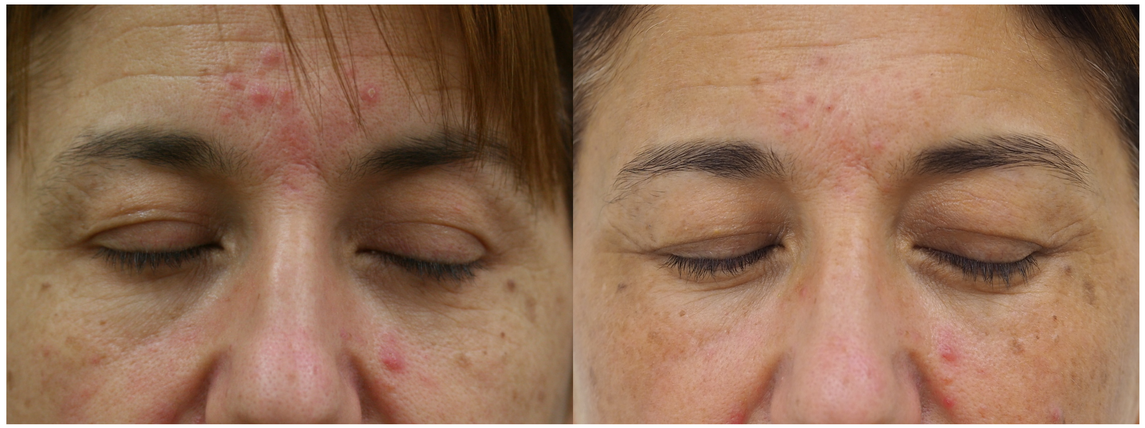

Figure 1. (a) Baseline photographs of a patient with a papular eruption affecting the glabellar and malar regions. (b) Following twelve treatments with CGAP, significant improvement is observed.

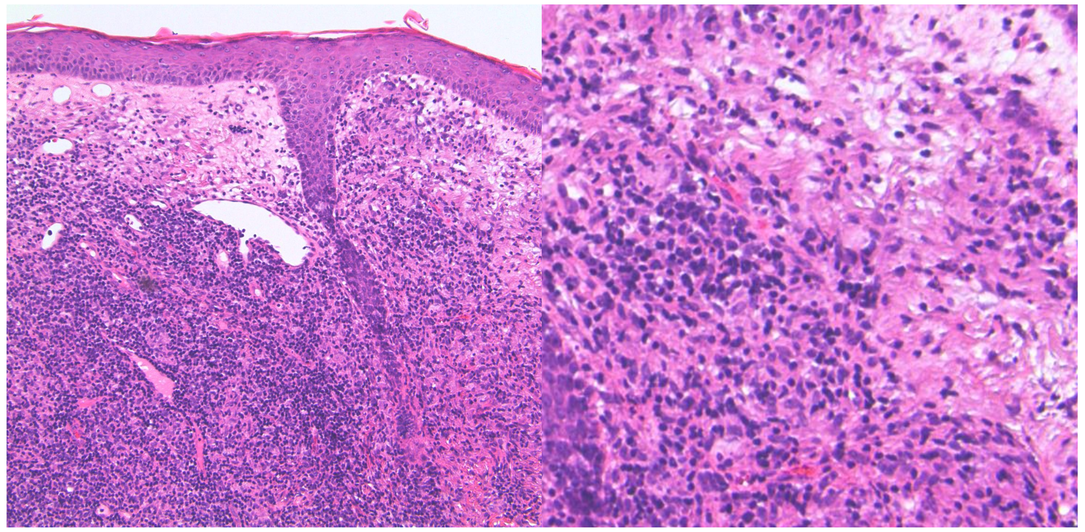

Figure 2. Biopsy demonstrated ectatic dermal blood vessels, and pandermal inflammation with perifollicular granulomas composed of epithelioid histiocytes, multinuclear giant cells, lymphocytes and neutrophils. (a) Haematoxylin and eosin, original magnification X10, (b) Haematoxylin and eosin, original magnification X40.

Discussion

Granulomatous rosacea is notoriously difficult to treat, and there is no current consensus regarding the best approach to management. Small-volume case reports and series have advocated therapeutic options including dapsone, tetracyclines and isotretinoin.[1] However systemic treatment is not always accepted or tolerated, as in the case of our patient. CGAP is a new therapeutic modality that has been shown to be effective in papulopustular rosacea,[2] as well other conditions such as acne[3,4] and erlotinib induced acneiform eruptions.[5] CGAP involves irradiation of a chromophore gel (Kleresca®) with light at the wavelengths 415nm and 447nm to generate a fluorescent spectrum from approximately 510-630nm. CGAP is non-invasive, in-office intervention with no known systemic side effects. While the pathophysiology of rosacea is unclear, there appears to be an overgrowth of commensal organisms paired with alterations in innate immune response.[1] Further studies with greater methodological rigor should be employed to determine the role of CGAP in this setting. However it is biologically plausible that CGAP may have be effective in the management of rosacea due to its proposed anti-inflammatory and antibacterial effects.[6] Additionally, light based modalities such as phototherapy and photodynamic therapy have been shown to be helpful in other granulomatous diseases, such sarcoidosis, by decreasing interleukin 1 and tumour necrosis factor alpha locallywhich are necessary for granuloma formation and maintenance.[7] This case suggests that there is promise in CGAP as management of granulomatous rosacea. However, a single case report cannot discount the impact of a placebo effect, or the possibility of spontaneous remission. Nonetheless, the noteworthy response of our patient to treatment suggests that CGAP may be of therapeutic value, and warrants further research with more rigorous studies.

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