Biosurgery Utilized for Chronic Leg Ulcers in a Patient with Refractory Pemphigus Vulgaris

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Chief Complaint and History

- A 65 year-old female presented with a two month history of a progressively enlarging rash located over the right eyebrow and back. The patient stated that the rash initially began as a single, non-healing erosion that repeatedly scabbed over with surrounding inflammation. A new lesion near the right eyebrow appeared simultaneously. There was associated pruritis and burning of the affected areas.
- Complete ROS was grossly negative and patient denied prior rash
- PMH: asthma and hyperlipidemia
- Physical Examination: several flaccid bullae and erosions on the mid-upper back and a single, moist, well-demarcated red plaque with overlying crust on the right eyebrow. Several erosions present on floor of the mouth.
- Pathology: punch biopsy revealed suprabasilar intraepidermal acantholytic blister consistent with pemphigus vulgaris (PV). DIF consistent with linear/granular IgG deposition throughout the epithelial cell surfaces.

Physical Examination

- Initiated on prednisone 30mg and topical clobetasol 0.05% ointment, lesions progressed to abdomen, scalp, lower extremities, oral mucosa. Patient initiated on mycophenolate mofetil 3g daily and prednisone 40mg daily with little improvement.
- Patient developed painful, non-healing ulcers of the lower extremities. She required inpatient therapy and biopsies of ulcers showed no distinct etiology. Lesions were cultured for pseudomonas conferring diagnosis of pseudomonas-infected chronic lower extremity ulcers.
- Perilesional maggot therapy, or biosurgery under occlusion was administered twice during the course of inpatient admittance. Following each 48 hour occlusion her bilateral lower extremities marked improved. Patient continued on mycophenolate mofetil 4g and prednisone 20mg daily to manage PV.

Discussion

Maggot therapy or biosurgery is increasing in popularity for debridement of chronic wounds and enhancement of wound healing.

The maggots have diverse properties including anti-inflammatory, anti-microbial, antibiofilm, and wound healing properties.

Antibacterial activity targets specific organisms such as Streptococcus A and B, Staphylococcus aureus, Pseudomonas, and methicillin resistant S. Aureus (MRSA).

Treatment is generally well-tolerated in patients, with reported side effects including venous bleeding.

Studies on biosurgery show improvement of tissue oxygenation following debridement for 1-4 days, further elucidating a possible mode of action of this therapy.

Further studies are needed to investigate the clinical effects, and possible mechanisms of action of biosurgery; however it proved to be an effective and rapid treatment for our patient's non-healing lower extremity ulcers.

References