

Treatment of Trigeminal Trophic Syndrome with Intralesional Triamcinolone Acetonide Injections and Platelet Rich Plasma Delivery: A Case Report and Review of the Literature



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INTRODUCTION/BACKGROUND

Trigeminal Trophic Syndrome (TTS) is a rare cause of facial ulcerations and paresthesias. Patients may experience paresthesias such as pruritus, burning, or tingling which may provoke self-manipulative behaviors (scratching, picking, rubbing, etc.) in TTS.¹ The pathogenesis of TSS is believed to be due to the destruction of gasserian, or trigeminal, ganglion.² TTS is a clinical diagnosis, with careful exclusion of other possible causes of ulcerations such as infection, malignancy, immune mediated disease, and trauma.³ **While some progress has been made in TTS management, there is a need for more successful treatments for this intractable condition.** Herein, we report a novel treatment of TTS with intralesional triamcinolone acetonide injections and platelet rich plasma (PRP) delivery. We also review the literature and provide a summary of treatment of TTS.

CASE

A 68-year-old woman presented to our clinic with a 5-year history of excoriated ulcers of the bilateral mid eyebrows, left nasolabial fold, cheek, upper lip, and commissure. Paresthesias including intractable pain and numbness were reported. A diagnosis of TTS was made. Behavioral modification and gabapentin 300 mg twice daily yielded little improvement. Some ulcers healed to scar tissue.

TREATMENT

After reviewing the literature, we decided to use intralesional triamcinolone acetonide injections in addition to a trial of intralesional platelet rich plasma (PRP) delivery due to its role in wound healing. **PRP was used a total of two times, one month apart. Liquid Nitrogen (LN₂) was applied to all ulcer sites to soften sclerotic areas. Intralesional triamcinolone 3mg/mL, 1mL total was delivered to the areas under local anesthesia (1% lidocaine with 1:100,000 epinephrine).** A topical hydrocortisone-retinol solution 0.1% was given to use at home twice daily. This regimen of intralesional triamcinolone injections was repeated bi-weekly

RESULTS

INITIAL PRESENTATION



4 MONTH FOLLOW UP

Follow up after 2 weeks revealed significant improvement and diminished sclerotic tissue. Complete healing of ulcers was observed after 4 months with a significant decrease in scar tissue.

RATIONAL FOR PLATLET RICH PLASMA DELIVERY

PRP plays a role in wound healing, which may have contributed to the significant improvement of chronic ulcers and scarring in our TTS patient. **PRP exerts a combined effect on both connective and epithelial tissue, inducing migration, proliferation, and biosynthetic activity of dermal fibroblasts. This activity encourages extracellular matrix restoration and dermal fibroblast differentiation. Additionally, dermal revascularization is promoted by platelets.** PRP has been used in dermatology for the treatment of burns, diabetic foot ulcers, vitiligo, psoriasis, acne scars, and other skin conditions.⁴ Ullah et. al in 2022 found that injected PRP was significantly better than conventional dressing in the management of diabetic foot ulcer.⁵ Kaulh et. al treated psoriasis and atopic dermatitis patients with injected PRP subdermally which yielded encouraging, safe, and efficacious results.⁶

SUMMARY OF TREATMENTS

Our literature review revealed non pharmacologic, pharmacologic, and surgical approaches to treatment of TTS. **Behavior modification, protective wear, and thermoplastic dressings** sutured in place may help TTS patients refrain from self-manipulation provoked by the associated paresthesias of TTS. These three techniques are simple, economic, of low risk, and therapeutic. Pharmacologies such as **gabapentin and carbamazepine** have shown success, but results have varied, and more studies are needed to determine their utility in this condition. **Intralesional triamcinolone injections, transcutaneous electrical stimulation and iontophoresis** may be promising treatments, however supporting studies are limited. **Surgery using grafts and various flaps** may be a successful treatment in some TTS patients, but social factors may provide difficulty in obtaining surgery and should be considered. An **interdisciplinary approach** with different specialty services could be of benefit for clinicians.

CONCLUSION

Intralesional triamcinolone acetonide injections in combination with PRP delivery may heal ulcers and reduce scar tissue in TTS. More studies are needed on this TTS treatment regimen and others to help patients suffering from this intractable condition.

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