PHYSICAL THERAPY AND REHABILITATION SCIENCE

Novel Use of LymphaTouch® to Treat Peripheral Facial Nerve Palsy: A Case Study

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Background

- Facial palsy may be caused by reactivation of the herpes zoster virus, herpes simplex 1 virus, and Lyme Disease.
- Synkinesis is a complication of facial palsy that may occur due to lack of muscle activity causing a build-up of fibrotic tissue adhesions.
- There is a lack of consensus in the literature about treatment protocols for peripheral facial palsy rehabilitation. (Fujiwara, 2017; Vaughan, 2020; Khan, 2022).
- The LymphaTouch® device is a negative pressure machine originally developed to reduce swelling and improve lymph flow in patients with lymphedema (Gott, 2018; Saul, 2020) and has treatment indications for scar and fibrotic tissue mobilization (Adams, 2016).

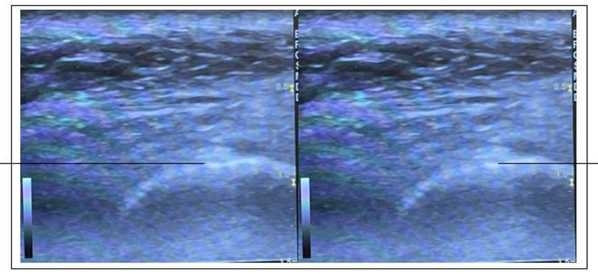
Initial Examination

- Sunnybrook Facial Grading System (FGS)
  - Resting symmetry = 5
  - Symmetry of voluntary movement = 36
  - Synkinesis = 0
  - TOTAL = 31/135
- Facial Clinimetric Evaluation (FACE) Instrument = 69/77.
- Trigeminal nerve involvement with diminished pinprick sensation in the V1, V2, and V3 distributions.
- Impaired balance as noted with decreased single limb stance.

Outcomes

- Sunnybrook FGS
  - Resting symmetry = 0
  - Symmetry of voluntary movement = 76
  - Synkinesis = 4
  - TOTAL = 72/135 (132% improvement)
- FACE Instrument = 72/77 (4% improvement).
- All symptoms resolved except for some degree of synkinesis and facial weakness. Full eye closure was achieved.
- The patient received PT for facial rehabilitation for 27 visits over 7 months in a cash-based outpatient practice.
- At discharge, the patient required surgery to release the DAO (depressor anguli oris).

Zygomaticus pre LymphaTouch ®



Zygomaticus post LymphaTouch ®

Initial Examination

Discharge

Case Description

- 33-year-old male with postherpetic geniculate ganglionitis (Ramsay Hunt Syndrome).
- Six-week history of left sided facial weakness, photophobia, metallic taste, rash on left side of the tongue, and hyperacusis.
- Previously received ≈30 sessions of physical therapy with electrical stimulation which is contraindicated for patients with facial weakness due to increasing the occurrence of synkinesis (Yoo, 2023).

Intervention

- LymphaTouch® to the supraorbital, infraorbital, mental foramen, and superficial musculoaponeurotic system (SMAS) areas of the face to decrease fibrosis.
- Neuromuscular re-education included exercises for smile, snarl, pucker, eyebrow raise, and eye closure.

Discussion

- Using LymphaTouch® to decrease fibrosis in patients with facial palsy is a novel application of this technology.
- This patient made significant improvements; however, the amount of contribution from the LymphaTouch® device is unable to be determined as this was used in combination with facial exercises.
- Further research is needed to determine the effectiveness of negative pressure therapy to enhance the rehabilitation of patients with peripheral facial nerve palsy.

References available upon request