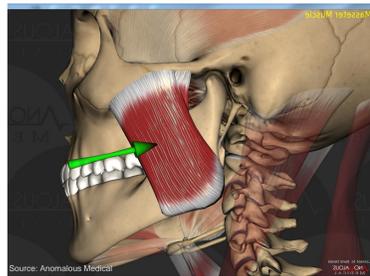


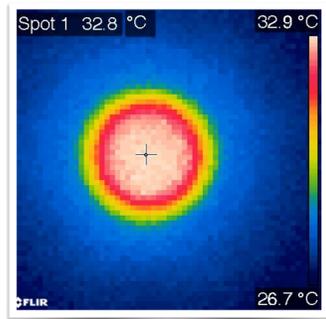


Introduction

- The diagnosis of neurological and musculoskeletal abnormalities by thermography is based on the local thermal asymmetry between opposite side muscles.¹



Masseter muscle



Skin Thermogram

Aim

- To assess the relation between muscle pain and muscle temperature.

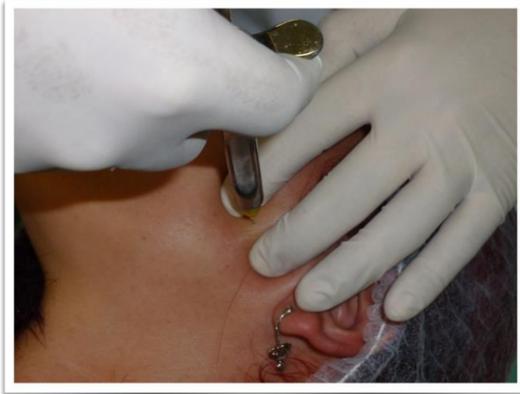
Material and Methods

Study design and study population.

- Longitudinal 12-minutes experimental study. A total of 31 cases of diagnosed patients with myofascial pain were included in this study. The diagnosis was based on the RDC/TMD criteria performed by a calibrated dentist (MW).

Anesthetic block

- Pain side** : anesthetic block of 10 ml of Lidocaine hydrochloride 2% without vasoconstrictor (Fig.1). MW
- Opposite side** : control group.



Masseter anesthetic block

Results

1. Population: 31 female patients with mean age of 44 years

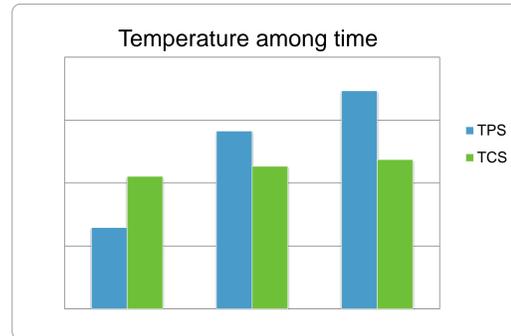


Figure 1. Pain side: 32.47 °C (SD = 2.01) 2 minutes before injection 33.62 °C (SD = 2.14), 2 minutes after injection, 34.10°C (SD = 1.54) 10 minutes after injection. **Control side:** 33.08 °C (SD = 1.70) 2 minutes before, 33.20 °C (SD = 1.44) 2 minutes after, and 33,28 °C (SD = 1.59) 10 minutes after injection .

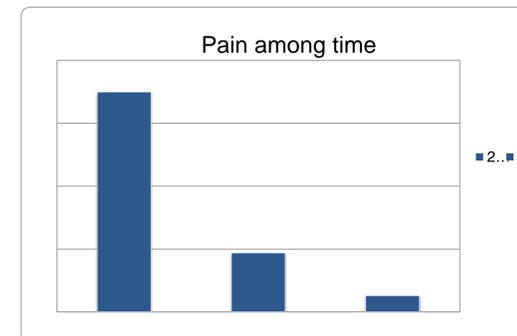


Figure 2. The mean values for pain were 6.12 (SD = 2.23) 2 minutes before, 1.649 (SD = 2.02), 2 minutes after, and 0.45 (SD = 0.87) 10 minutes after injection.

The TTEST Procedure

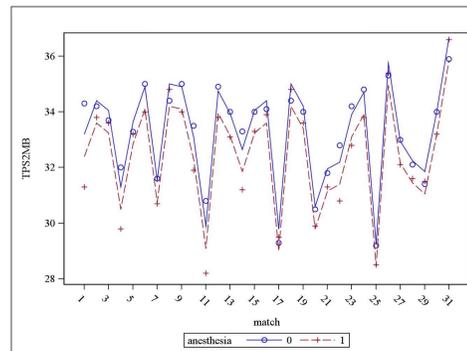


Figure 3. On baseline there was a statistical difference with a mean of 0.79 and $P < 0.001$.

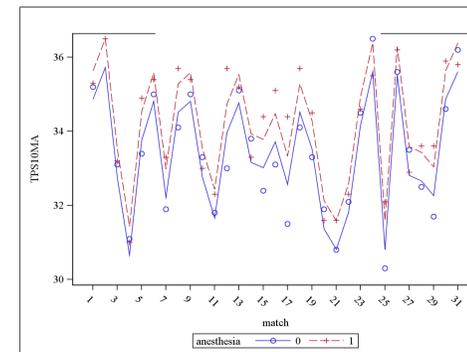


Figure 4. 10 minutes after anesthetic block there was a statistical difference with a mean of -0.77 and $P < 0.001$.

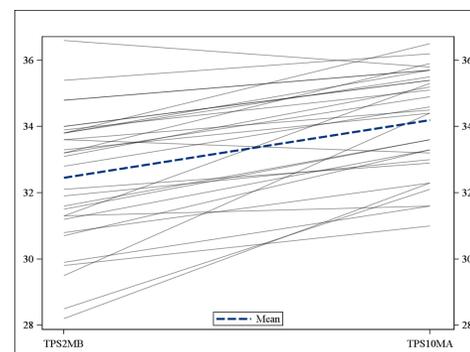


Figure 5. Difference between baseline temperature and after 10 minutes among those with anesthetic block **there was a significant difference** with mean of -1.74, SD of 0.98 to 1.65 and $P < 0.001$.

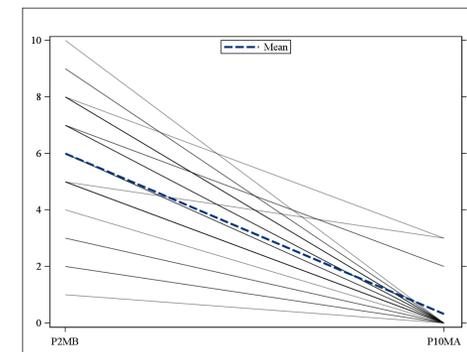


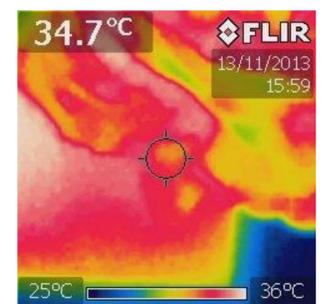
Figure 6. Related pain baseline and 10 minutes after anesthetic block: **there was a significant difference** with a mean of 5.67, SD 2.23 and $P < 0.001$ with 95% of confidence limits.

Conclusion

- This study found a negative association between temperature and muscle pain.
- This relationship was not affected by age, gender, BMI.
- Our results suggest that warm compress is effective to decrease pain intensity.

Future direction

- Re-conduct the longitudinal study for 3-months.
- To assess in a randomized controlled trial the effectiveness of application of warm compress in the management of TMD pain.



References

- Haddad, D. S., M. L. Brioschi, R. Vardasca, M. Weber, E. M. Crosato and E. S. Arita (2014). "Thermographic characterization of masticatory muscle regions in volunteers with and without myogenous temporomandibular disorder: preliminary results." *Dentomaxillofac Radiol*: 20130440.

Acknowledgements

