IMPACT OF OSTEOPATHIC TREATMENT ON BRUXISM STUDENTS :
A feasibility study exploring jaw et cervical range of motion

Thomas Bagory, Mathieu Ménard, Franck Sutre, Hakim Mhadhbi, Marylène Bourgin, Paul Vaucher

Contact : *bagory.t@io-rennes.fr*

Introduction

- Bruxism is a common disorder often associated with other musculoskeletal disorders. [1,2]
- Osteopaths offer functional assessments and management for a range of health-related disorders including bruxism and neck pain.[3,4]
- **New instruments and methodologies** are now available to quantify ROM data in a clinical context.[5]
- This study explores **the value of using motion analysis to evaluate cervical and jaw range of motion (ROM)** on students with bruxism when comparing Osteopathic Manipulative Treatment (OMT) to sham in an Osteopathic Educational Institution (OEI).

Materials & Methods

- **23 volunteer students** (21.1 ± 2.0 years) from an OEI.
- **2 Groups :**
    - A treated* bruxism group [Brux_OMT]
    - A control** bruxism group [Brux_sham]
- Received two **OMT** sessions separated by one week and individualized (45'). ** Received two **SHAM** treatments separated by one week consisting of three manual techniques (45') .
- All participants were assessed 4 times: pre-treatment (T1), post-treatment (T2), follow-up pre-treatment (T3), follow-up post-treatment (T4). **ROM of jaw and cervical spine** was measured through a video based-system constituted by :
    - **15** body landmarks
    - **3** sport cameras (Gopro)
    - Kinovea software to analyse data

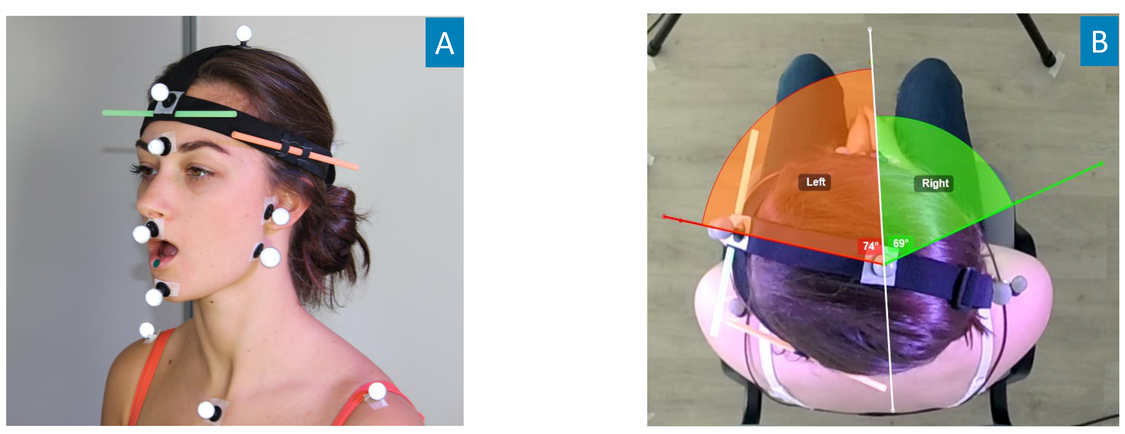

Figure 1 : Participant equipped by body landmarks performing a jaw opening **(A)** and data export of cervical rotation with the analysis software. **(B)**

Results

- Repeated measures of joint motion at baseline **showed high levels of reliability** (0.953 < ICC < 0.985).
- Motion analysis detected **important differences between OMT and sham** one-week post-treatment (T3) for jaw lateral ROM (3.3°; p = 0.018) and cervical rotation ROM (12.0°; p = 0.003) in participants with bruxism.
- **Following the second treatment (T4)**, effects were more important and current for all parameters.
- Changes over time at one week **were correlated between jaw and cervical ROM.** Students that gained in lateral jaw movement also gained in cervical side-bending (ρ = 0.595, p = 0.003) and cervical rotation (ρ = 0.440, p = 0.036).

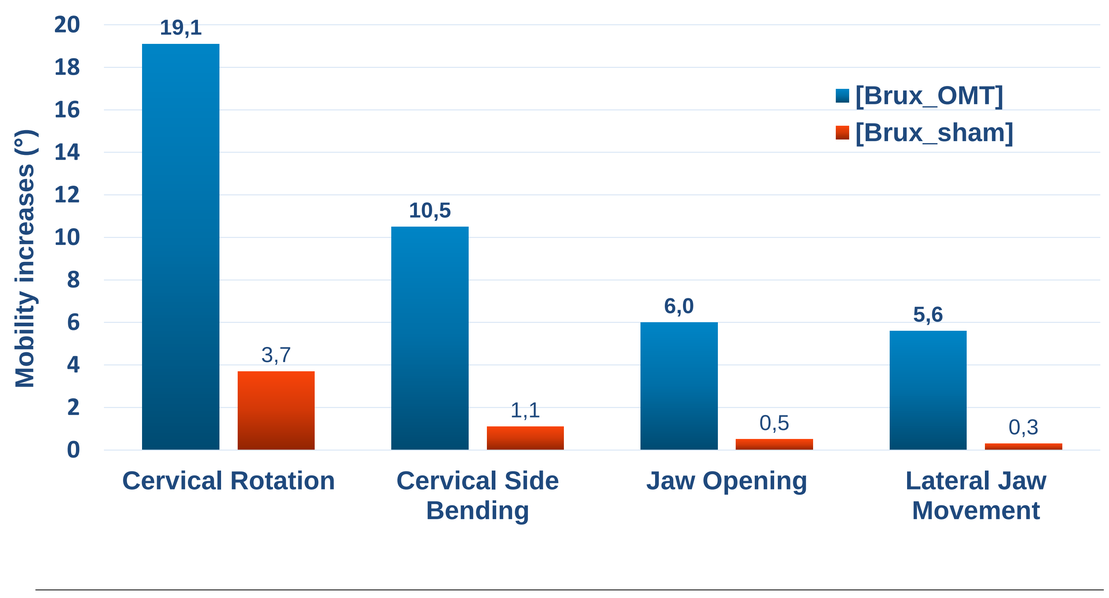

Figure 2 : Mobility increases between T1 and T4 for the two groups.

Discussion

- Osteopathic manipulative treatment **improves cervical and jaw ROM in bruxism students** compared to control group.
- All effects were **more** important after the second intervention that **highlighted the importance of a follow-up of patients**.
- The correlations observed testify to **the (close?) relationship between the manducatory sphere and cervical mobility**, in a quantifiable manner.

Conclusion

- Motion analysis **can detect** the effects of OMT on cervical and jaw ROM in students with bruxism.
- **This complementary evaluation approach** to traditional methods **could allow a better understanding of the injury mechanisms of patients** with functional disorders of the craniocervical region.

Références

(1) Martinot et al. 2020. *Chest 157 (3).*
(2) Martynowicz et al. 2019. *Frontiers in Neurology, 10.*
(3) Thomson et al. 2014. *International Journal of Osteopathic Medicine 17 (3).*
(4) Vaucher et al. 2020. *BMJ Open,8 (8).*
(5) Bernardina et al. 2017. *Journal of Applied Biomechanics*, 35 (1), 80–86.
(6) Akgol et al. 2019. *International Journal of Health & Allied Sciences, 8 (1), 38.*

INSTITUT D'OSTÉOPATHIE DE RENNES-BRETAGNE
Campus Rennes Atalante Ker-Lann 50 rue Blaise Pascal | (face à l'Ensai) 35 170 BRUZ | 02 99 57 19 62
osteopathierennes@gmail.com | www.osteo-rennes.fr

Etablissement privé d'enseignement supérieur agréé par le Ministère de la Santé et enregistré au Rectorat de Rennes NOR AFSH1516142S