

A craniosacral osteopathic approach can help improve olfactory function in patients with a diminished sense of smell following head trauma

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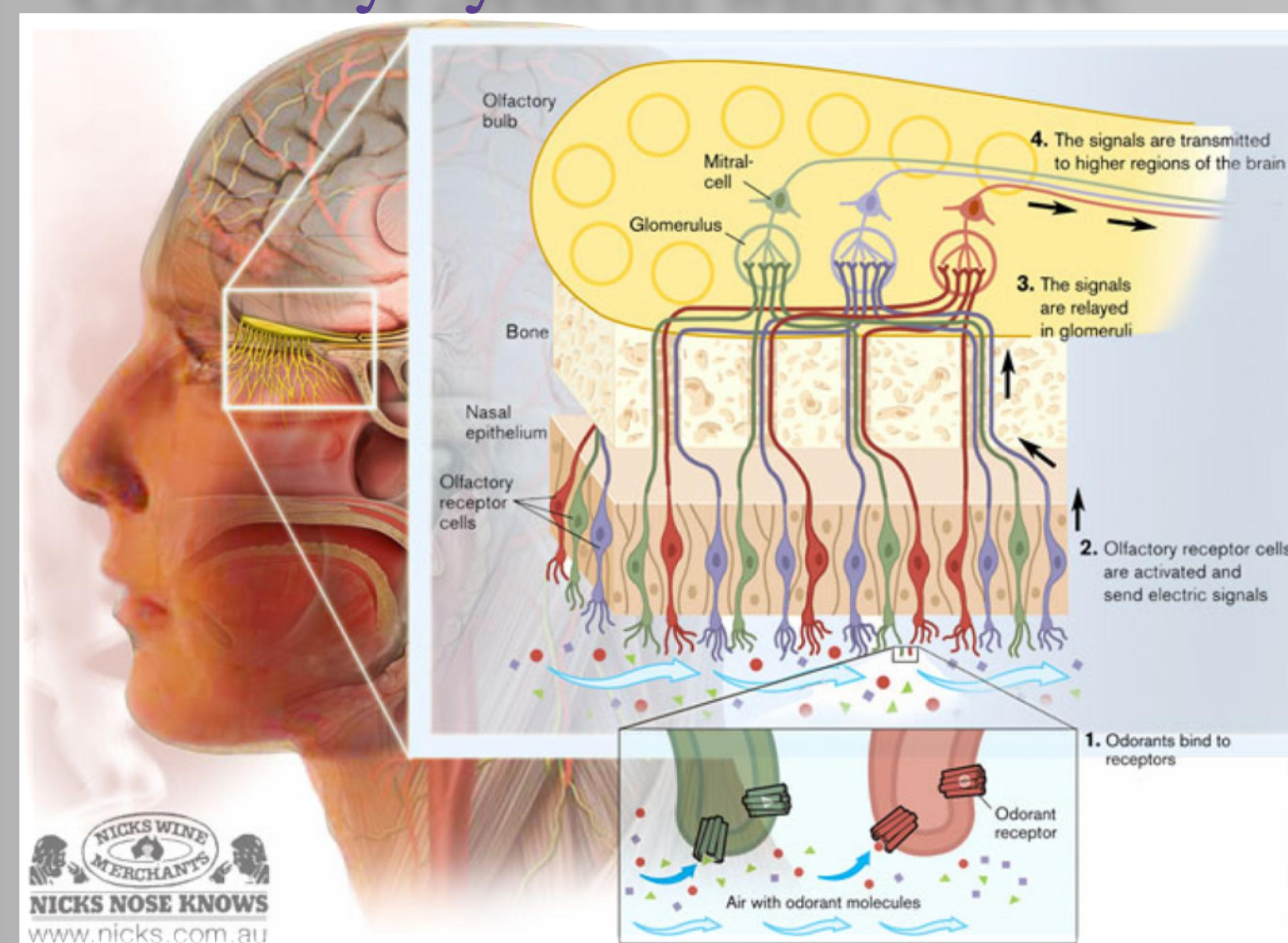
INTRODUCTION

- ❖ The incidence of dysosmia after a head trauma is frequent and rarely treated.
- ❖ The most frequent causes are post-traumatic (33%) and postinfectious (38%) [1].
- ❖ The incidence of sense of smell disturbances following a head injury is 13% [2, 6].
- ❖ The probability of suffering from anosmia depends on the severity of the injuries and may reach 60-70% of severe trauma cases [8, 9, 10].
- ❖ The loss of smell may have a major psychological impact [4, 5].

OBJECTIVE

This study aims to gather information about the effects of osteopathic treatments for an individual with dysosmia following a head injury.

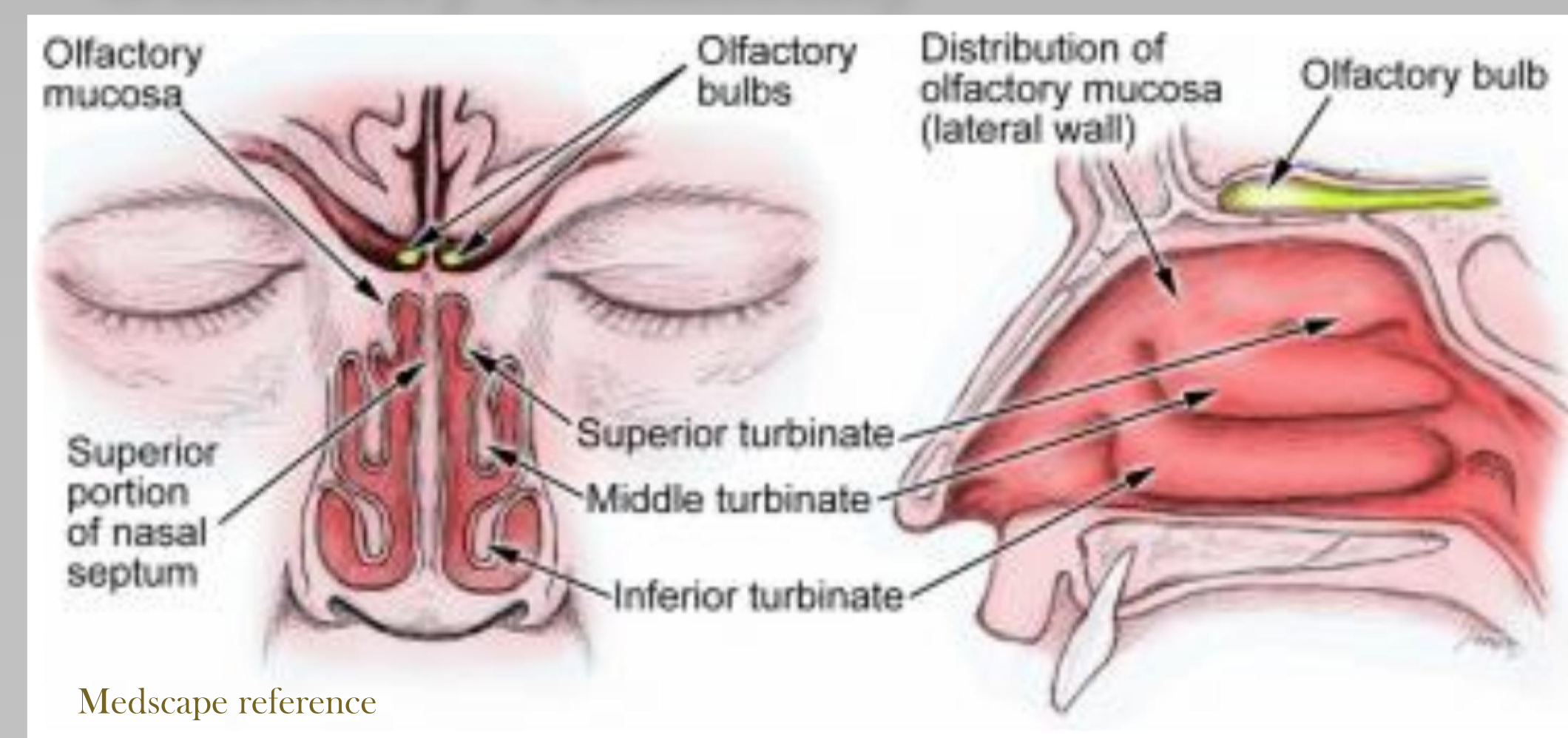
Olfactory System with Nerve



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Olfactory Anatomy



METHODS

A 43-year-old woman seeks medical attention for dysosmia after a fall. The patient believes she is anosmic, since she could not smell anything.

Because of missing data in the medical record, we were not able to objectively assess the level of the anosmia. The medical history reveals a diminished sense of smell without changes in taste. The patient didn't show any sign of nasal congestion prior or after the trauma. At the Glasgow Coma Scale, she had a score of 15. A Magnetic Resonance Imaging (MRI) eliminated the possibility of a fracture. During the osteopathic exam, several craniosacral dysfunctions are found:

- ❖ Spheno-Basilar Symphysis (SBS): Sidebending/rotation, lateral and vertical strain,
- ❖ Restriction of movement of:
 - ❖ Ethmoid bone,
 - ❖ Facial bones and sutures (including maxilla and palatine bones, intermaxillary and transverse palatine sutures),
 - ❖ Vault (including parietal and frontal bones),
 - ❖ Reciprocal Tension Membrane (RTM),
 - ❖ Laterally inflected sacrum.

Four osteopathic treatments over a three-month period were performed in order to normalize cranial dysfunctions and the inflected sacrum.

RESULTS

❖ In first treatment, the normalizations focused on RTM, on severe restrictions of movement of facial bones, as well as on the ethmoid and on the SBS, have notably increased the variety of perceived smells, such as coffee, vanilla, shampoo and a new perfume.

❖ The second treatment, including normalizations of the vault and of the suture lines, have improved movement on cranial bowl, but do not seem to increase sense of smell.

❖ The last two subsequent treatments were based on normalizations of the sacrum, SBS, RTM and ethmoid in a significant recovery of the sense of smell, as well as the quality of sleep and energy level, were noted.

DISCUSSION

The loss of the sense of smell following a head injury is attributed to several causes, such as: a mechanical alteration of the nasal cavities, shearing of olfactory nervous fibres or an injury of the olfactory brain regions [6]. Following olfactory improvements in our subject, 2 mechanical hypotheses may explain the dysosmia:

❖ General cranial restrictions are reflected specifically on movement of the ethmoid, but can also have an effect on the vascular aspect, causing inflammation of olfactory slits.

❖ The disruptive effect on the ethmoid in the lamina cribrosa could cause either a decrease in the transmission of the nervous signal, or a decrease in the migration of odorous molecules through mucus.

Olfactory System Trauma

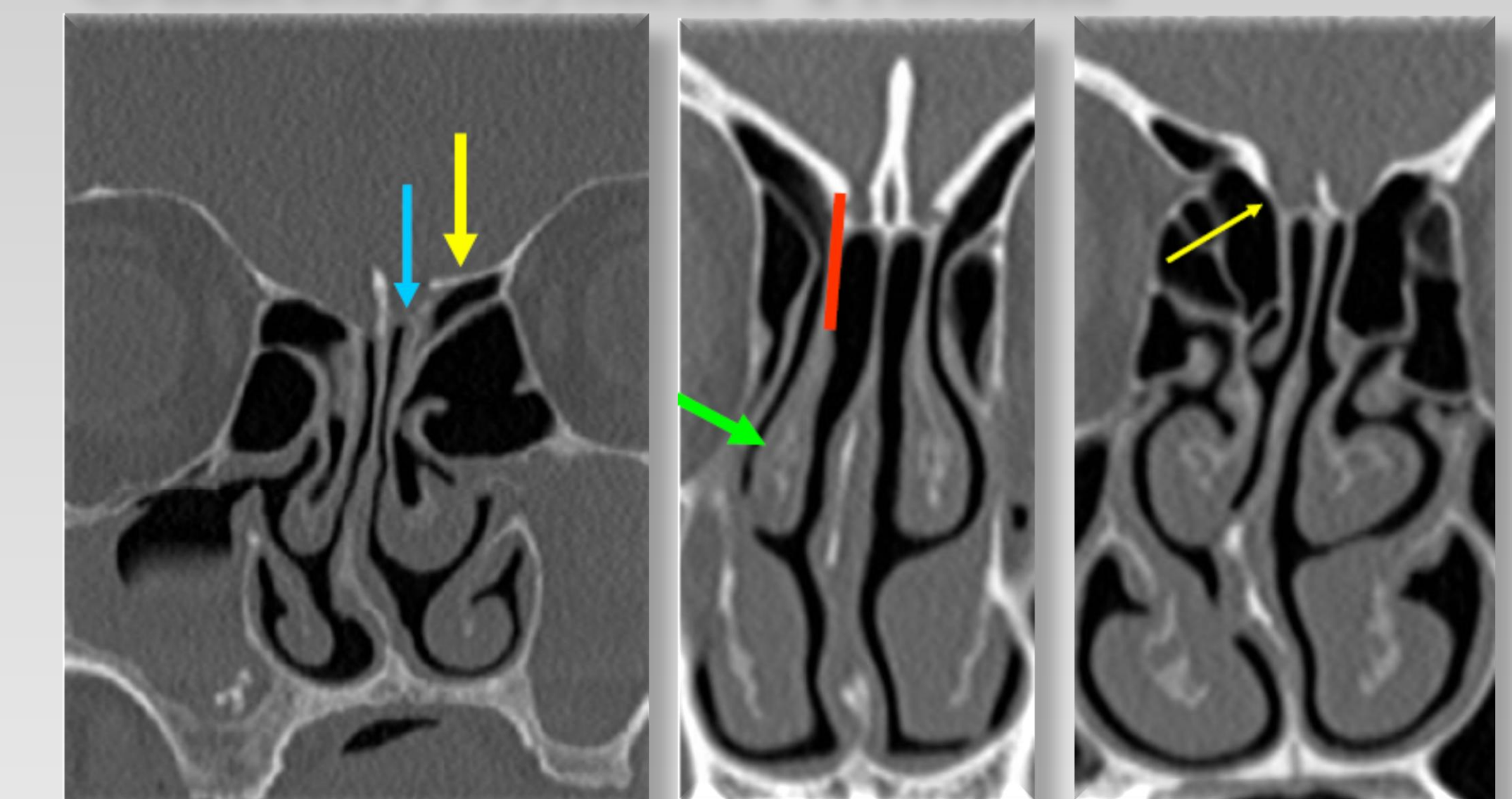
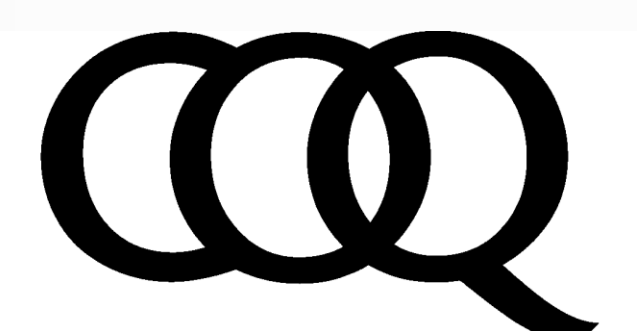


Photo Radiologie; PP Redécouvrir la fente olfactive, P.Henrot et al.

CONCLUSION

Cranial osteopathic treatments seem to have had a positive effect in this case on the recovery of the sense of smell after a traumatic incident, while there are currently few medical solutions. Further research is required to determine the impact of osteopathic dysfunction, be it inflammatory or obstructive.



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