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British Journal of Oral and Maxillofacial Surgery 57 (2019) 1161–1162

BRITISH Journal of Oral and Maxillofacial Surgery

www.bjoms.com

Technical note

A straightforward method to achieve dental class I occlusion in class II patients during bilateral sagittal split osteotomy: a technical note

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Accepted 4 September 2019
Available online 21 September 2019

Keywords: orthognathic surgery; class II

A bilateral sagittal split osteotomy with anterior repositioning of the distal segment is the standard technique to achieve a class I dental occlusion and improve the profile in a skeletally class II patient.

Temporary intermaxillary fixation in class I occlusion, with or without an intermediate splint, is followed by repositioning of the proximal segment into the articular fossa, and subsequently by fixation of the distal and proximal segments with screws or plates.

Each of these steps can become a source of error that can lead eventually to a suboptimal outcome. In particular, the anterior positioning of the mandible in class I dental occlusion can be difficult in class II dental patients, as a result of the traction of soft tissues in a dorsal direction. This traction, increasing with the amount of advancement (and the suboptimal intercuspation) is considered to be one of the possible causes of relapse.[1]

Detachment of the pterygomasseteric sling from the distal segment, positioning the proximal segment in a maximal dorsal position, and rigid fixation can help prevent relapse.[2]

In addition, before applying intermaxillary fixation, we can also change the position of the patient's neck on the operating table from a neutral to a flexed position, to eliminate the traction exerted on the mandible by the suprahyoid and

Fig. 1. The patient's profile (published with the patient's permission).

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https://doi.org/10.1016/j.bjoms.2019.09.003

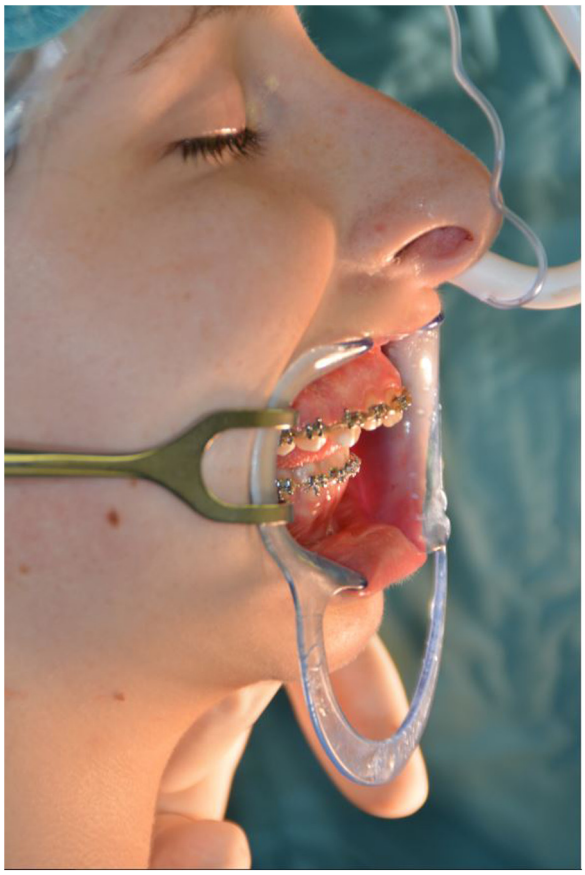

Fig. 2. Patient with neck extended after nasal intubation before operation: the surgeon is gently supporting the lower jaw to show the spatial relation between the maxilla and the mandible (published with the patient's permission).

infrahyoid muscles and fascias. The surgeon can palpate the patient's anterior neck on the midline easily, and feel the tension building up between the sternal notch and the chin. If the mandible is in a resting position and the muscles responsible for mandibular elevation are not activated, extending the neck will pull the mandible in a downward (depression) and dorsal direction (retraction).

On the other hand, if the mandible is at rest and the muscles responsible for depression are not activated, flexing the neck will push the mandible in an upward (elevation) and forward direction (protraction).[3] We simply take advantage of this effect during the procedure to position the teeth-bearing segment anteriorly, which achieves the best possible intercuspation without effort. This technique takes less than a minute, is straightforward, and does not add any additional risks for the patient or costs. It can reduce stress for the operating team and remove the need to repeat intermaxillary fixation and

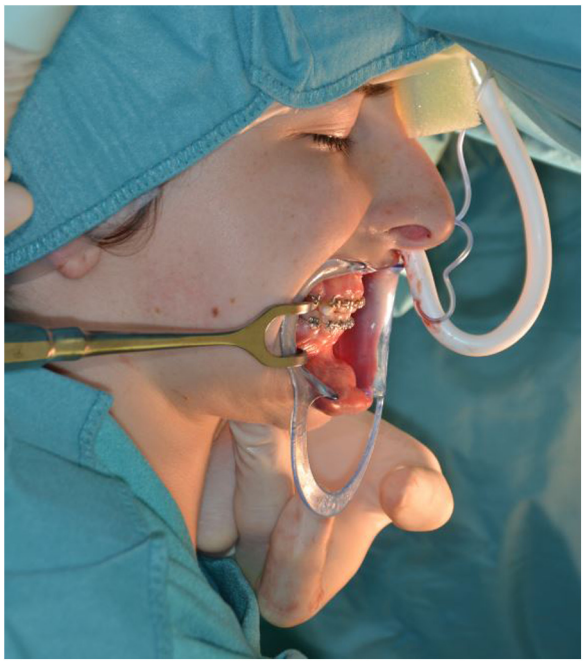

Fig. 3. Patient with flexed neck before the operation: the surgeon is gently supporting the lower jaw to show the spatial relation between the maxilla and the mandible (published with the patient's permission).

osteosynthesis, either then, or at a later stage, if the occlusion is suboptimal.

Figs. 1–3, show the effect of neck position on occlusion and inter-arch relations on a patient with a skeletal and dental class II occlusion.

Conflict of interest

We have no conflicts of interest.

Ethics statement/confirmation of patient's permission

Ethics approval was not required. We have obtained the patient's permission to publish the photographs.

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