

2 Osteotomies of the mandibular body

2.1 Osteotomy of the lateral body

Osteotomies of the lateral body of the mandible for mandibular setback were once widely used, especially when premolars or molars were missing. By this technique prosthetic reconstructions with bridges can be avoided by eliminating the areas of missing teeth. Osteotomies of the mandibular body with osteotomies are also indicated in cases with extreme mandibular prognathism with marked discrepancies between mandibular and maxillary arch lengths. An extremely deep curve of Spee can be corrected, too. Some correction of the transversal dimensions is also possible. The osteotomy cuts can be linear or stepwise, and the inferior alveolar nerve must be preserved. Piezoelectric saws are helpful to avoid nerve damage. Blocks of bone are removed from the area of

the missing teeth and from the inferior part of the body. In step osteotomies the segments are connected by a horizontal osteotomy line which extends anteriorly above the nerve canal. The apices and lateral surfaces of roots should not be injured (**Figs 7.2-15a–b, 7.2-16a–b**).

When the osteotomy is completed and the bone blocks are removed, an acrylic splint is placed and the segments moved to the planned occlusion with the maxilla. MMF is carried out. The vertical osteotomies are fixed with miniplates, typically with one being positioned above and another below the nerve canal. 2.0 plates or Matrix plates with four holes can be used, fixed by monocortical screws, two at the distal and two at the proximal segment for each plate. Injuring the nerve and roots of the teeth must be avoided.

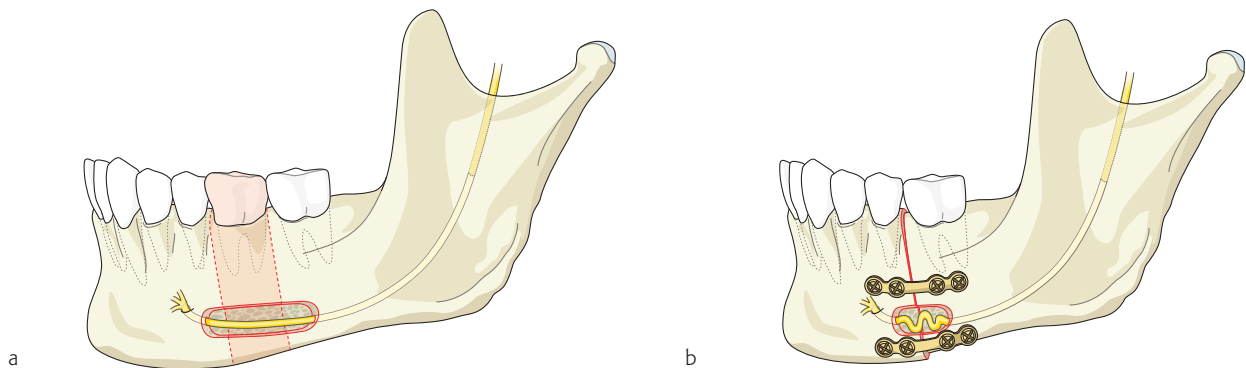


Fig 7.2-15a–b

- a** Marking for a linear osteotomy of the lateral body of the mandible. The inferior alveolar nerve must be freed (neurolysis).
- b** Fixation of mandible setback after linear osteotomy with two mandibular miniplates.

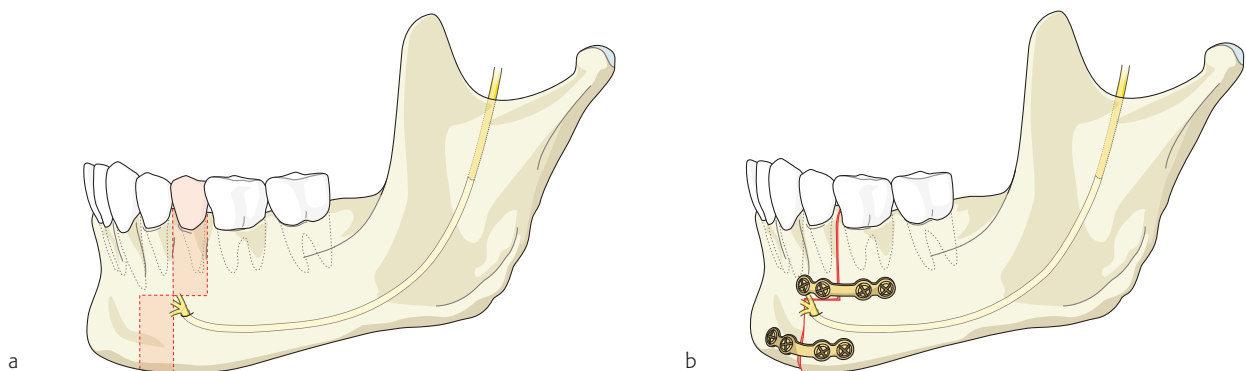


Fig 7.2-16a–b

- a** Marking for a stepwise osteotomy in the lateral body of the mandible. The horizontal cut is performed above the mental foramen. The width of one premolar is removed.
- b** Setback of anterior mandible after stepwise osteotomy in the premolar area. Fixation with two miniplates.



In a chin osteotomy with transversal expansion for patients with narrow mandibles and anterior crowding, transversal mandibular expansion is an alternative for extraction therapy. Mandibular expansion is usually done from a vertical midline or a paramedian osteotomy with a bone-anchored distractor (**Fig 7.3.2-3**, page 364).

2.2 Subapical (block) osteotomies

Subapical osteotomies are indicated when the basal skeletal relationships are good and the malocclusion is of alveolar origin and cannot be treated by orthodontic methods only. They can be restricted to certain segments (block or segmental osteotomies) or extended even to the whole dental arch (**Fig 7.2-17**). The osteotomies are typically performed from an intraoral vestibular approach. Care must be taken

to avoid unnecessary soft tissue stripping. Soft tissues must remain attached to the lingual aspect of the mobilized segment. The creation of small segments containing only one or two teeth should be avoided, in order not to compromise viability of the segments.

The segments can be moved in any direction. Anterior open bite can in some cases be treated by moving the segment upwards. Bone grafts should then be positioned into the gap area. The method is extremely suitable for correcting the superior position of anterior teeth. In these cases a section of bone should be removed inferiorly (**Fig 7.2-18a-b**). The method can be combined with other types of osteotomies and carried out in the same session.

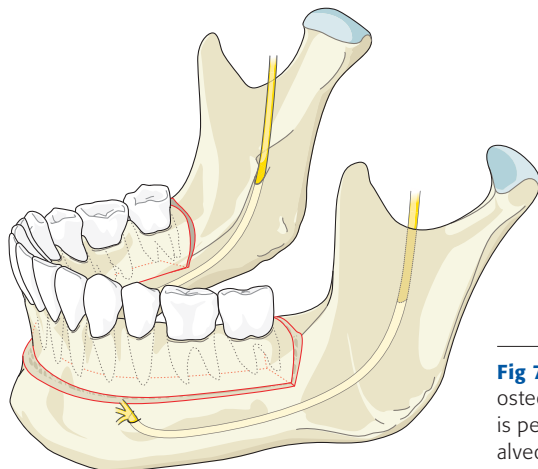
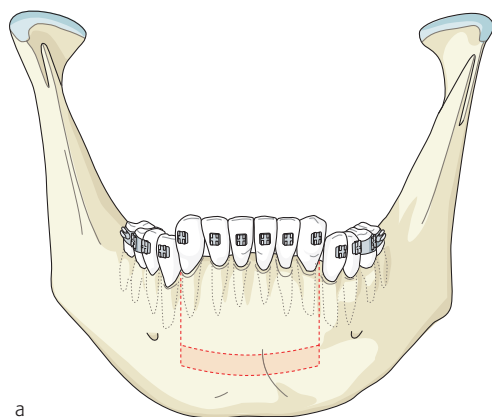
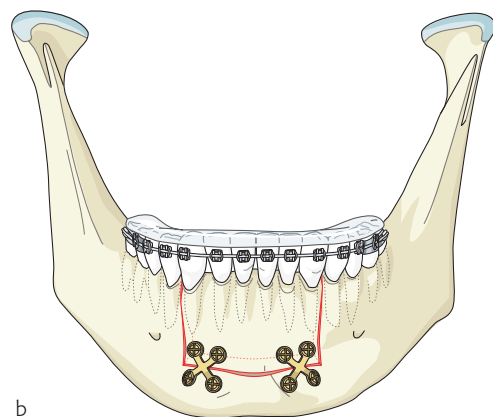


Fig 7.2-17 Circumferential subapical block osteotomy in the mandible. The osteotomy is performed above the canal of the inferior alveolar nerve and below the tooth roots.



a



b

Fig 7.2-18a-b

- a** Subapical osteotomy in the chin area. The osteotomy zone is marked for osteotomy and subsequent downward movement of the anterior block.
- b** The anterior block is fixed in the new position after downward setting. Fixation of the bony part with two crosslike miniplates and fixation in the dental area with a splint.