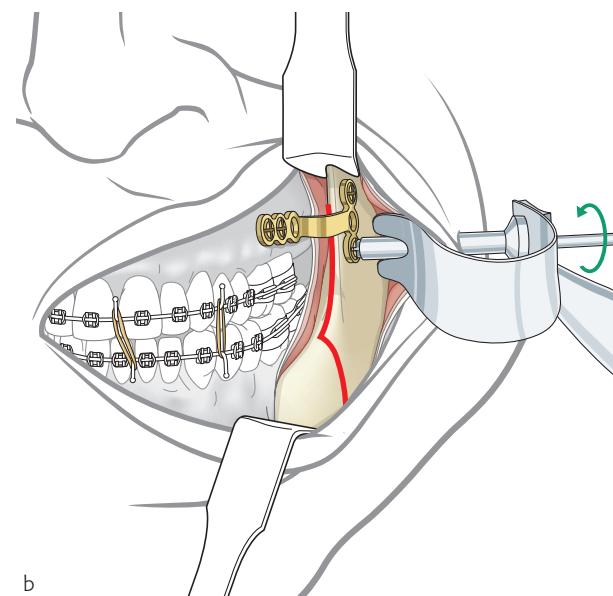
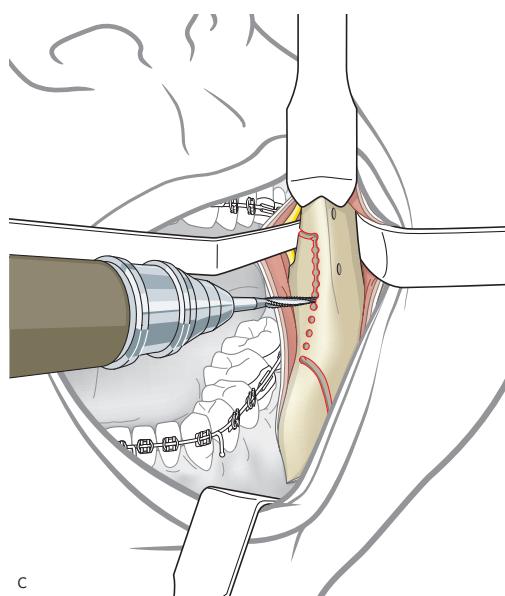
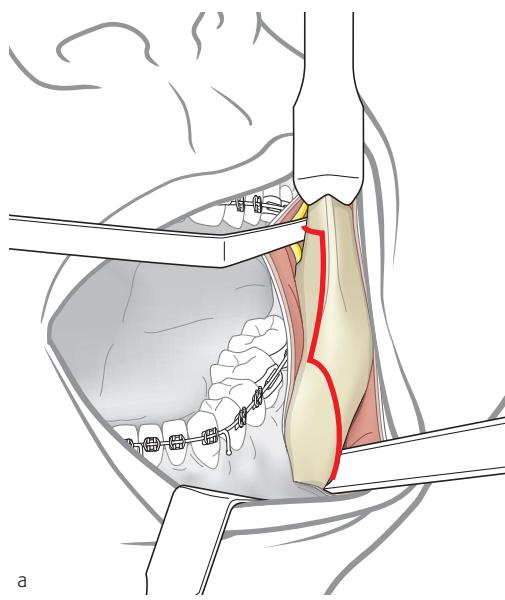


## 7.2 Standard osteotomies in the mandible

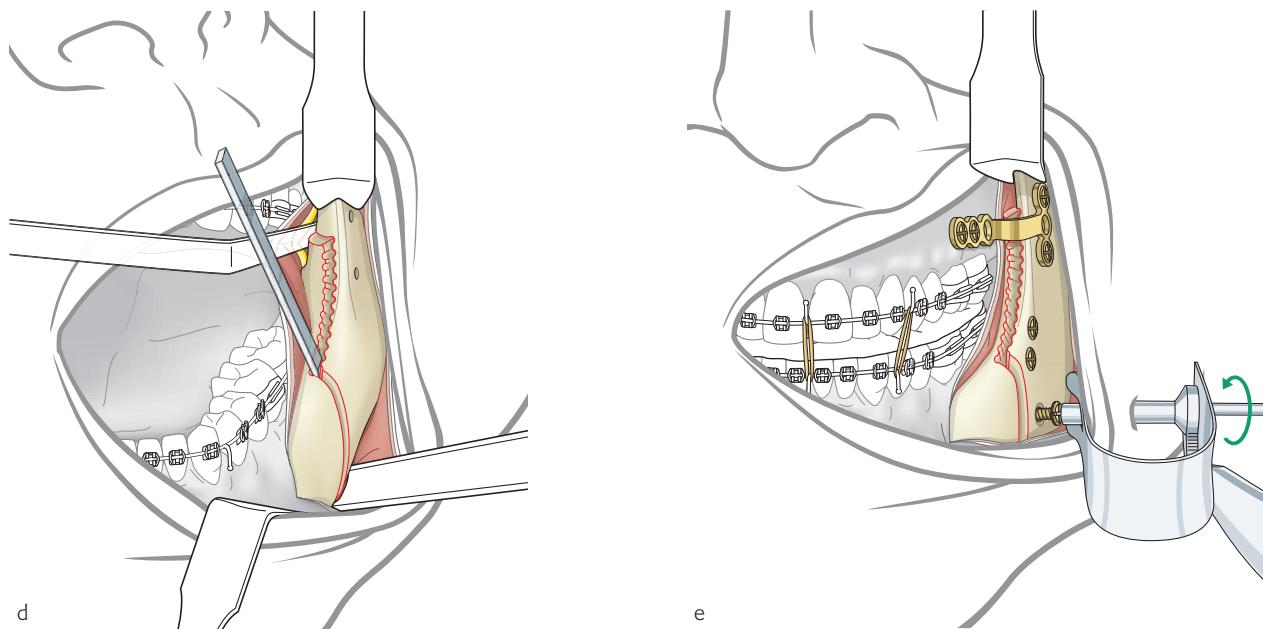
A 1.5 or 2.0 adaptation or Matrix plate can be used as a "prefixation" plate to define and later maintain the positions of the proximal fragments. Before performing the osteotomies, MMF is applied in the preoperative centric occlusion using a splint/wafer in the preoperative position. Transoral approaches are made and miniplates are attached bilaterally from the lateral side of the ramus to the retromolar area of the maxilla with two screws on either sides of the plates. In the maxilla the screws can be inserted through the mucosa. MMF is released and stability is controlled. Positioning plates are removed and bilateral osteotomies are performed. After that, the anterior segment of the mandible is positioned

into the splint, MMF is performed, and the prefixation plates are reattached using the same burr holes. Now stable internal fixation can be performed, while the proximal fragments are maintained in their preoperative position (**Fig 7.2-8a–e**). However, it must be noted that there is no evidence confirming that the prefixation technique leads to improved condyle positions over manually positioned condyles. Therefore, many surgeons prefer to position the small proximal fragments manually by pushing the mandibular angles upwards and backwards. Intraoperative position control with surgical navigation is also possible.



**Fig 7.2-8a–e** Fixation procedure for keeping the proximal fragment in correct position for mandibular setback.

- a** Marking of the osteotomy line on the bone surface.
- b** Fixation of the ascending ramus fragment to the maxilla with the help of a plate and transbuccal instrumentation. This is done before the BSSO is performed.
- c** Completion of the osteotomy with a Lindemann burr after removal of the fixation device for the positioning of the proximal fragment.



**Fig 7.2-8a-e (cont)** Fixation procedure for keeping the proximal fragment in correct position for mandibular setback.

**d** Completion of the osteotomy with an osteotome.

**e** After completion of the osteotomy, the distal tooth-bearing fragment is positioned with the splint and MMF, while the condyle-bearing fragment is positioned with the pre-fixation plate. Position screw osteosynthesis is performed using transbuccal instrumentation.

An altered position of the condyle can lead to postoperative resorption, other joint complications, and/or relapse of the position of the mandible. The placement of the condyle is anatomically guided by the shape and the position of the disc and by the shape of the glenoid fossa. The direction and magnitude of forces applied are critical. General anesthesia, relaxation, and the supine position of the patient tend to seat the condyle posteroinferiorly. This should be remembered while attempting to achieve the correct, uppermost position of the condylar head in the center of the glenoid fossa.

Condylar resorption is an irreversible cause of late relapse. Mandibular hypoplasia with a high mandibular plane angle, huge advancement, TMJ dysfunction, long period of MMF,

and counterclockwise rotation of the proximal fragment, especially when connected with a posteriorly inclined condylar neck, are regarded as risk factors for this condition.

After seating of the proximal fragments, fixation of the osteotomies can be initiated. Historically, fixation was done with wires. After that, a long period of MMF was necessary and the union of the fragments was sometimes poor. Lag screw fixation gives excellent stability and good conditions for primary healing of the osteotomy. The nerve could, however, be injured by the screw itself or by compression of the fragments. When gaps exist between the osteotomy fragments, compression may cause unwanted torque of the proximal fragment with the consequences previously mentioned. Screw fixation requires minimal hardware.