

from the anterior alveolus to the posterior palate with a thin osteotome, with a starting point between the central incisors (**Fig 7.3.2-2**). Care should be taken not to perforate the palatal mucosa. To avoid perforations the submucous chisel position can be controlled with a palpating finger. Some surgeons prefer to do two osteotomies, one on each side of the basal nasal septum, to avoid a basal septal deviation

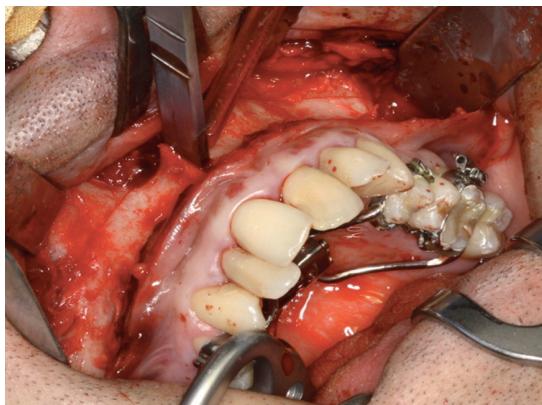


Fig 7.3.2-2 Midline osteotomy of the hard palate, osteotome in place.

through the widening process. The anterior osteotomy of the alveolus between the two middle front teeth must be performed very carefully to avoid damage to the tooth roots. It is recommended to perform an incomplete osteotomy of the anterior alveolus and finally do a gentle maneuver with a chisel to crack it open. Mobility of the two palatal halves and the attached lower maxillary components is checked. This osteotomy in the end creates two fragments containing the two halves of the palate and the lateral and anterior lower parts of the maxilla. Therefore, the terminology of “surgically assisted rapid palatal expansion (SARPE)” and “surgically assisted rapid maxillary expansion (SARME)” are both inaccurate, because the former does not mention the lower parts of the maxilla, and the latter does not mention the palatal halves.

To avoid a wider maxilla exposure, endoscopically assisted SARPE procedures have been described as a minimally invasive alternative.

The transverse expansion is done with the help of either a tooth- or bone-anchored distraction device according to the preferences of both surgeon and orthodontist (**Figs 7.3.2-3a-o, 7.3.2-4a-b**). Only a bone-anchored device does not direct

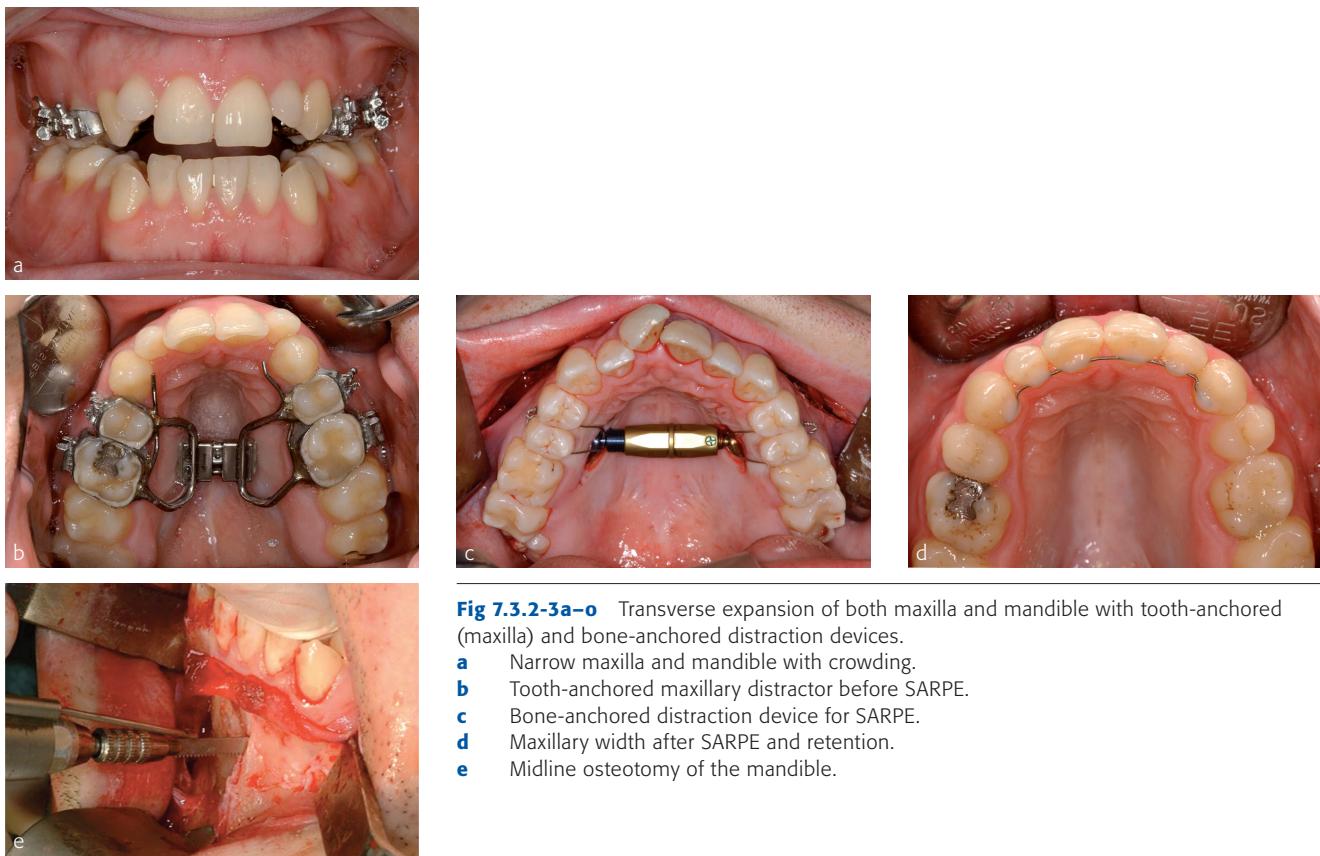


Fig 7.3.2-3a-o Transverse expansion of both maxilla and mandible with tooth-anchored (maxilla) and bone-anchored distraction devices.

- a** Narrow maxilla and mandible with crowding.
- b** Tooth-anchored maxillary distractor before SARPE.
- c** Bone-anchored distraction device for SARPE.
- d** Maxillary width after SARPE and retention.
- e** Midline osteotomy of the mandible.

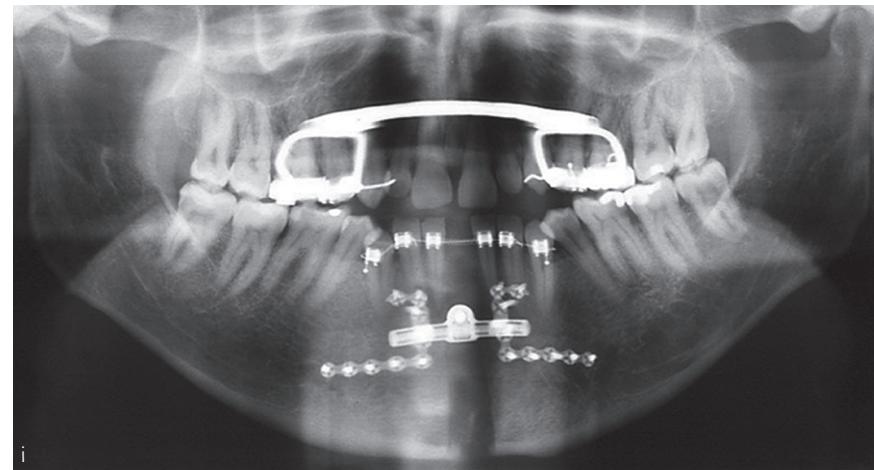
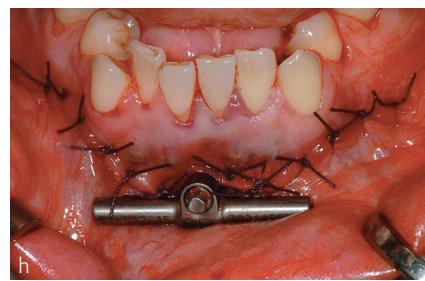


Fig 7.3.2-3a-o (cont) Transverse expansion of both maxilla and mandible with tooth-anchored (maxilla) and bone-anchored distraction devices.

- f** Positioning of a bone-anchored mandible distractor.
- g** Distractor in place, stabilized with monocortical mini screws. Initial activation to check functionality of the device.
- h** Situation after closure of the mucosa. Tooth-anchored maxillary and bone-anchored mandible distractor in place, midline mandible gap after activation of the distractor.
- i** Midline mandible gap, endpoint of activation.
- j** Situation after distractor removal, consolidated bone in the chin area.
- k** Narrow mandible before midline distraction.
- l** Mandible after midline distraction in the retention phase of orthodontic treatment.
- m** Oblique view of the occlusion before treatment.
- n** Oblique view of the occlusion after treatment.