

# MIDLINE STEP MANDIBULOTOMY AND MANDIBULECTOMY

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# MIDLINE STEP MANDIBULOTOMY

## STEP 1 INCISION

Incise the lower lip vertically in the midline until the periosteum covering the mandible is exposed and then incise the periosteum to expose the bone of the mandible.

**Figure 1**

## STEP 2 EXPOSE THE OSTEOTOMY SITE

Elevate the soft tissues off the mandible in a subperiosteal plane with a periosteal elevator so that enough bone is exposed to accommodate two 4- or 5- or 6-hole plates and prepare for the osteotomy.

**Figure 2**

The mental foramen with its nerve is the lateral limit of elevation on both sides.

**Figure 3**

Choose the optimal site for the step osteotomy (two vertical and one horizontal limbs) to minimize the risk of dental injury.

It may be necessary to remove a tooth to provide adequate space for the blade in which case the osteotomy is done through the centre of the socket.

Choose the optimal site for the two plates so that the screw holes do not involve dental roots, while centering the plate on the planned osteotomy. The minimum requirement is two 4-hole plates to provide adequate stability.

A notched or stair-step osteotomy gives more stability than a straight osteotomy.

## STEP 3 MARK THE OSTEOTOMY SITE AND CONTOUR THE PLATES

Use the oscillating saw to mark and partially start the planned osteotomies.

Contour the plate using plate bending forceps to snugly hug the bone. Then drill each hole, one at a time, and screw the

# MIDLINE STEP

## MANDIBULOTOMY

screw into the bone engaging the plate if it has a locking screw head. Do not over-tighten the screw as it needs to be removed. Take care to avoid stripping the screw and bone thread. This preparation will greatly facilitate the realignment and stability of the mandible after surgery.

### Figure 4

Remove the screws and plates and remember to keep the plates orientated so that the correct plate is properly positioned for the final reduction and fixation. **Figure 5**

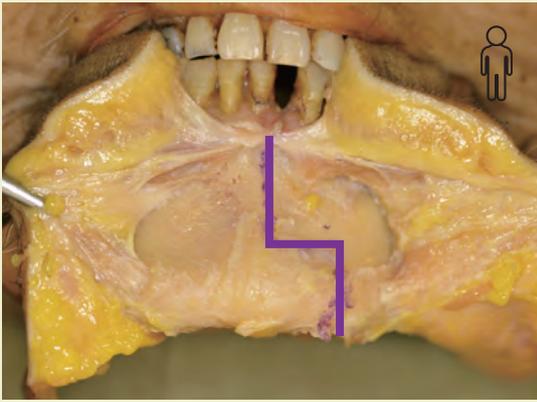
## STEP 4 COMPLETE THE OSTEOTOMY

The osteotomy is completed with the oscillating saw and then a thin osteotome is gently used to complete the bony division and to separate the ends if necessary. **Figure 6**



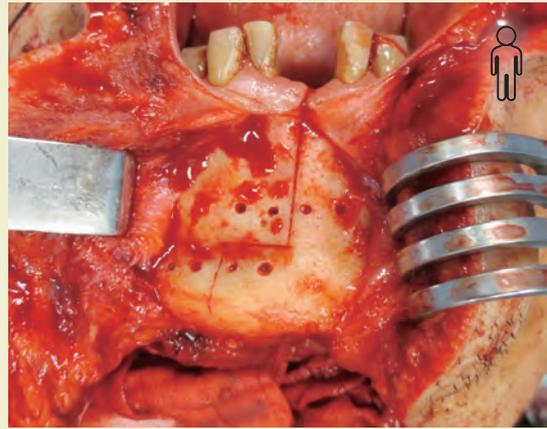
### Figure 1

Lip split with a notch at the vermilion border to facilitate closure



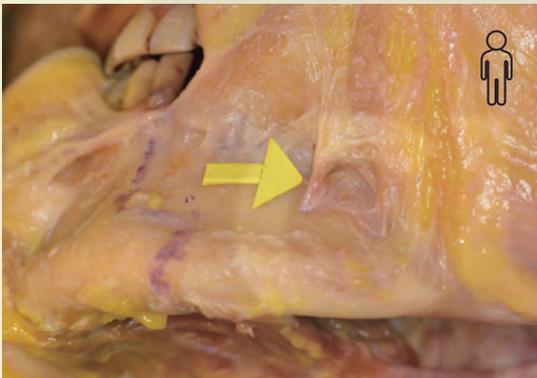
**Figure 2**

Expose the mandible for osteotomy and plating



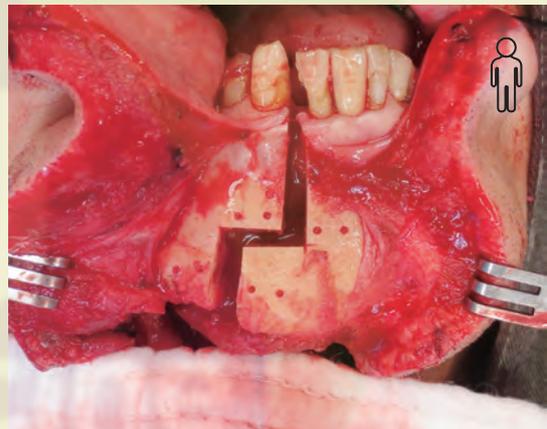
**Figure 5**

Remove the plate before osteotomy remembering not to damage the holes



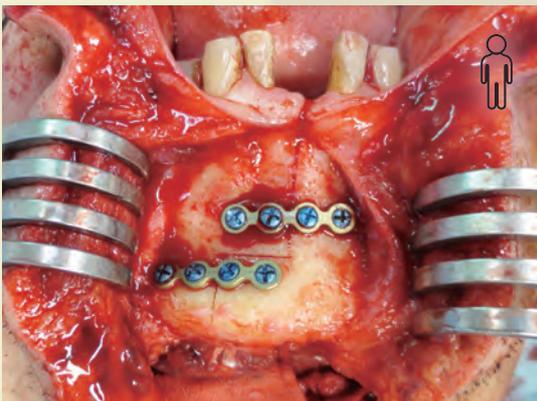
**Figure 3**

Mental nerve (yellow arrow) exiting from mental foramen



**Figure 6**

Osteotomy completed and mandible can swing open after dividing the soft tissue



**Figure 4**

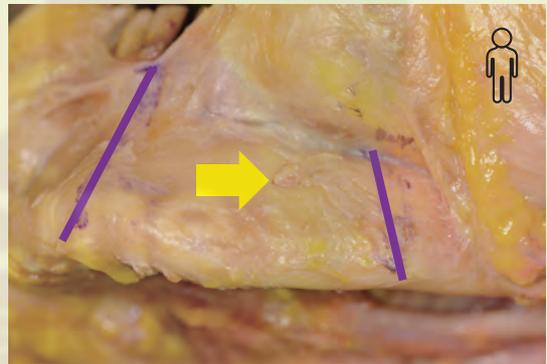
Preplate with 2 x 4 hole mini-plates

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# SEGMENTAL MANDIBULECTOMY

A cheek flap is raised to expose a segment of the mandible to beyond the mental nerve which is sacrificed. Osteotomy is performed according to the clinical requirement to remove a segment of the mandible. In live surgery, the soft tissue in front of and behind the mandible should be stripped from the bone and the osteotomy site. A malleable retractor is inserted to protect the tissues. **Figure 7**



**Figure 7**

Mandible exposed for segmental mandibulectomy with mental nerve (yellow arrow) sacrificed

## KEY POINTS

1. A notch at the vermillion border in the lip split improves cosmetic outcome.
2. The mental nerve is the lateral limit for soft tissue elevation.
3. Step osteotomy gives better stability.
4. Avoid injury to the dental roots by placing the plate below the root.
5. At least 2 x 4 hole plates are used to guarantee stability of the osteotomy.
6. Unicortical screws are sufficient for locking plate.
7. Preplating before osteotomy provides better alignment after mandibulotomy.

