



DESIGN OF A MADE-TO- MEASURE OSTEOSYNTHESIS PLATE

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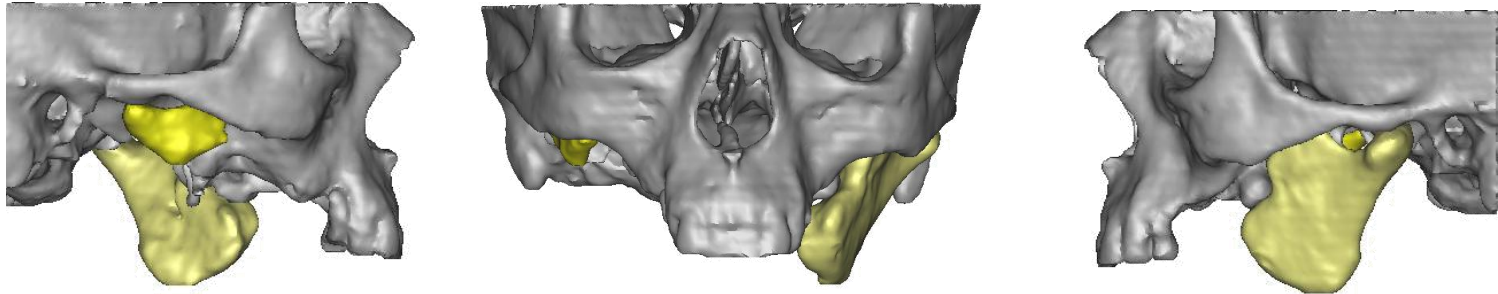
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INITIAL CONDITION

The patient has lost their entire mandible as the result of a tumour.

The mandible has been reconstructed twice using a fibula free flap, but reconstruction has failed both times.

The mandible is to be reconstructed using a made-to-measure/preformed plate

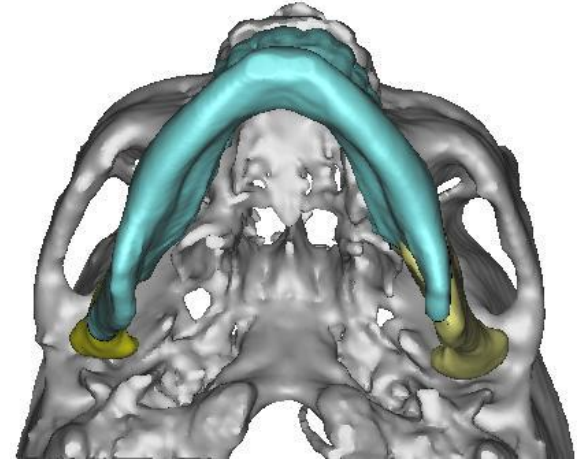
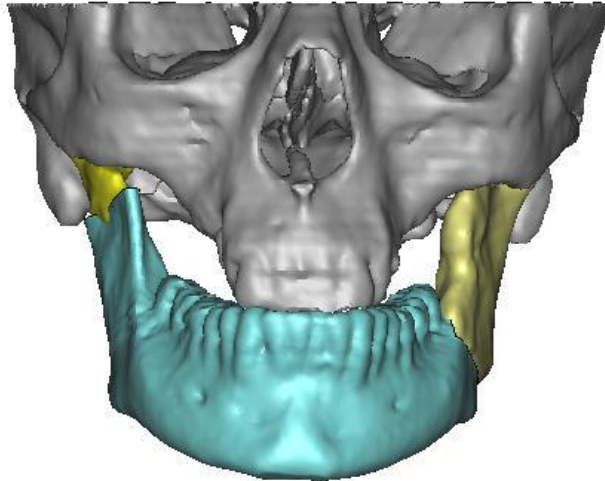




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DESIGN OF MANDIBULAR MASTER CAST

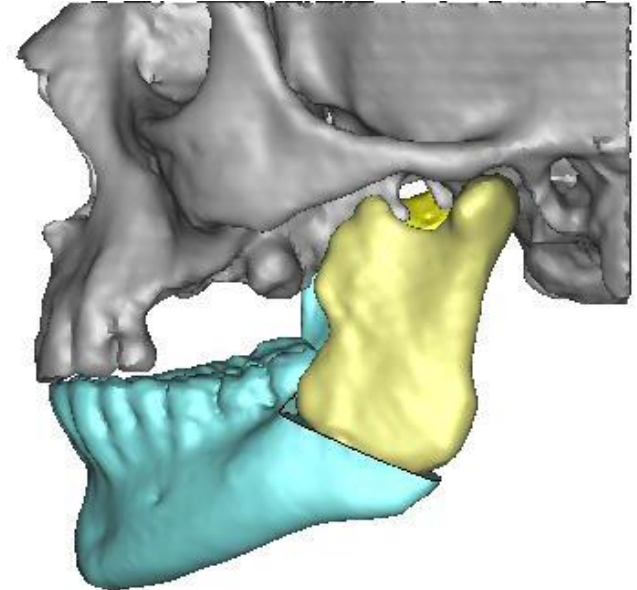
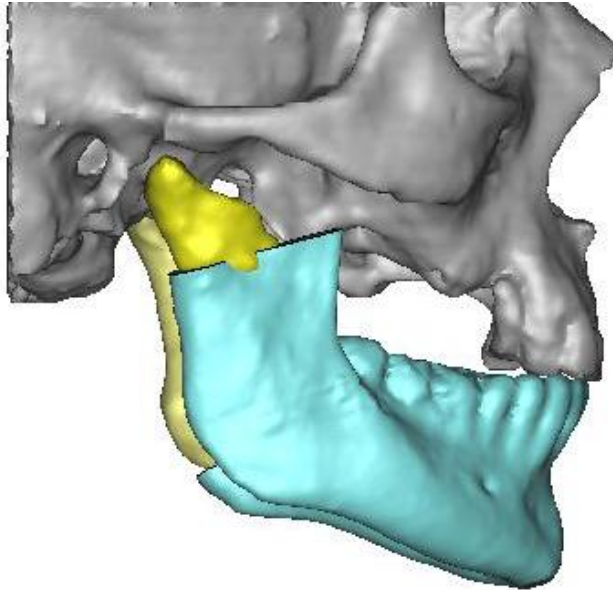
To design the plate, a virtual mandible is created to be used as a master cast for the preforming/design





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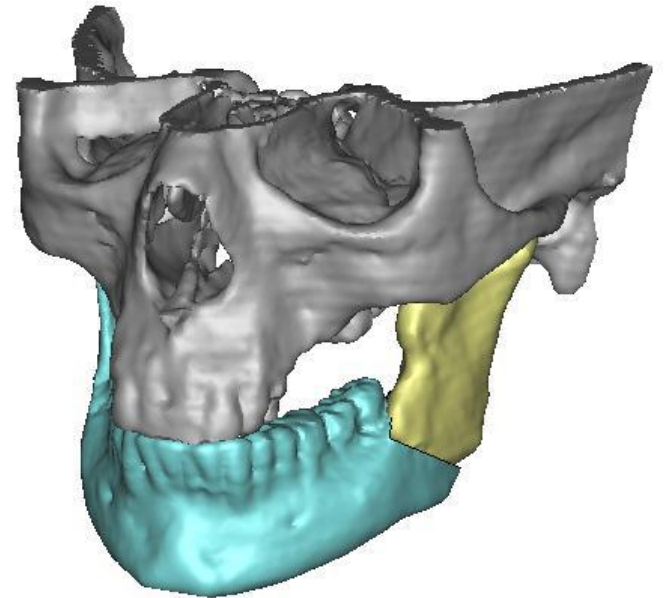
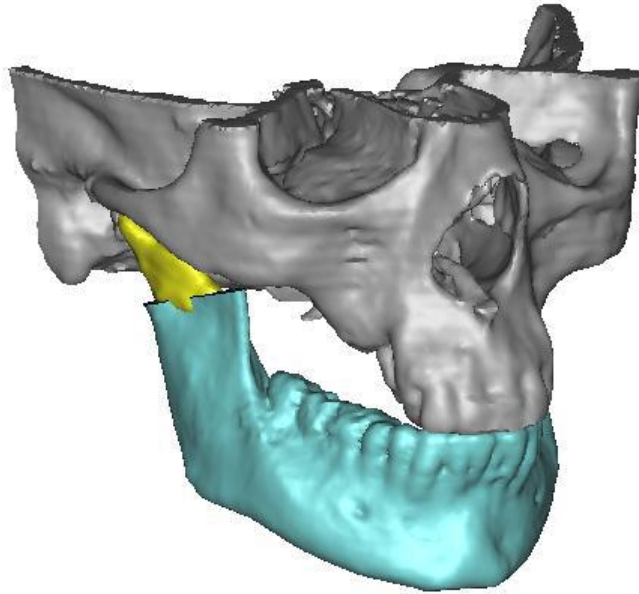
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DESIGN OF MANDIBULAR MASTER CAST





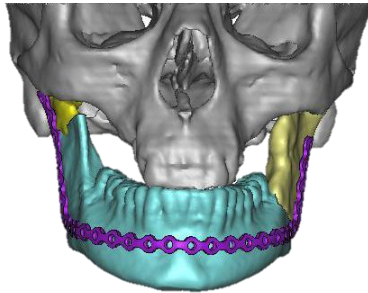
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VIRTUAL DESIGN OF THE PLATE

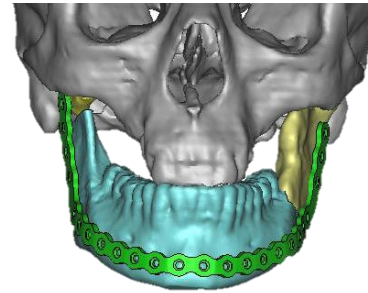
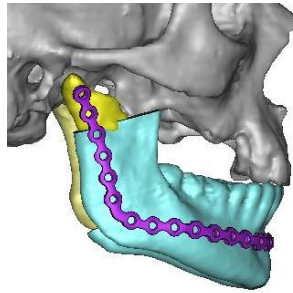
Once the virtual reconstruction has been performed, it is possible to:

- a.) Mould the plate over a manufactured biomodel
- b.) Design a made-to-measure plate

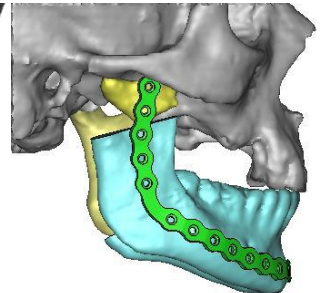
The surgeons are offered different solutions: 2 VERSIONS



VERSION 1



VERSION 2



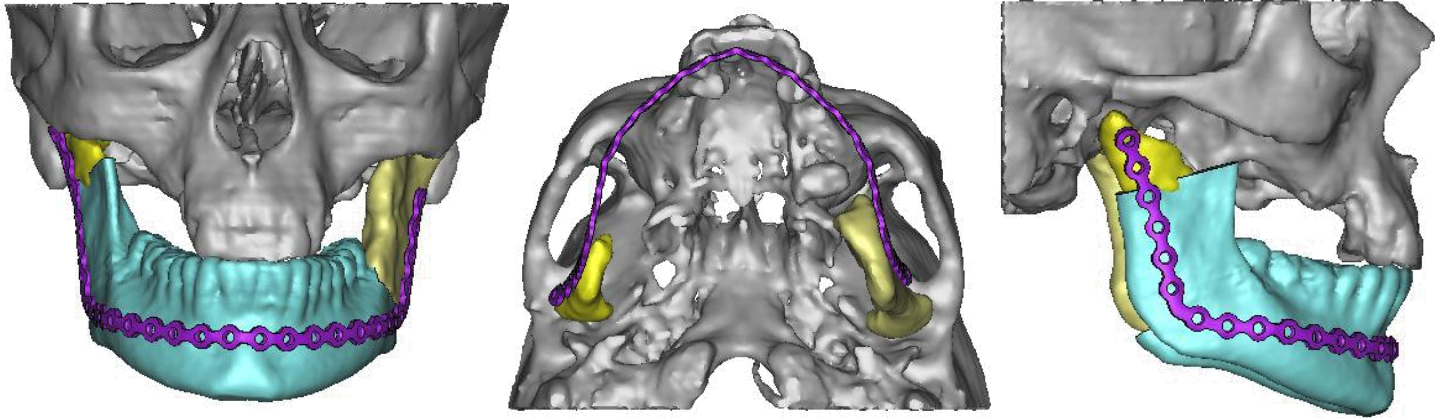


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PLATE VERSION 1

The design is not accepted:

- The plate must be closer to the basal plate
- The chin and ramus angles are not the ones the surgeons desire



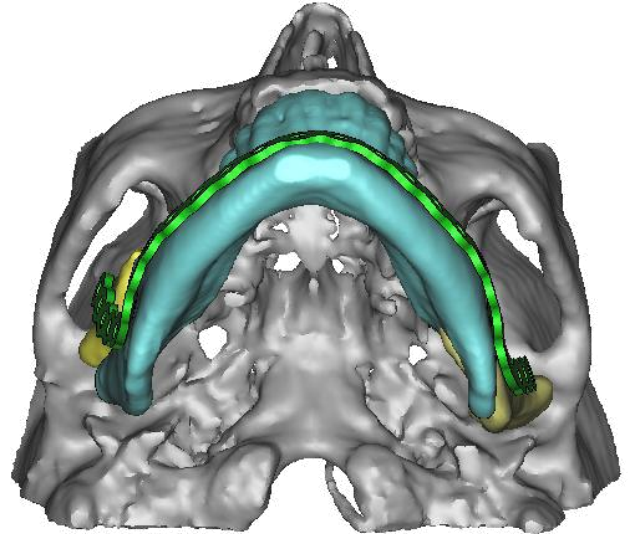
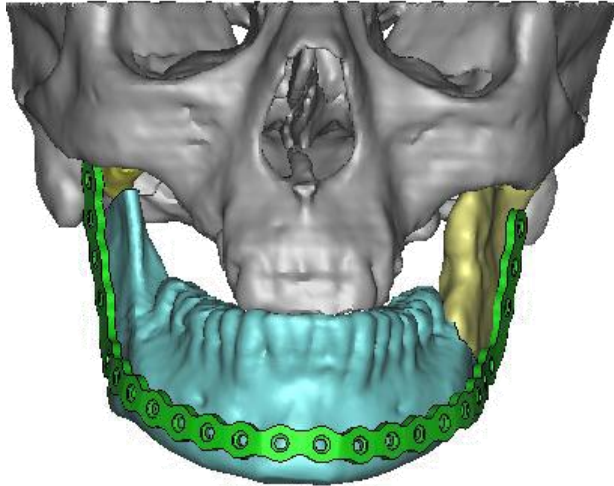


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PLATE VERSION 2

The changes requested by the surgeons are made.

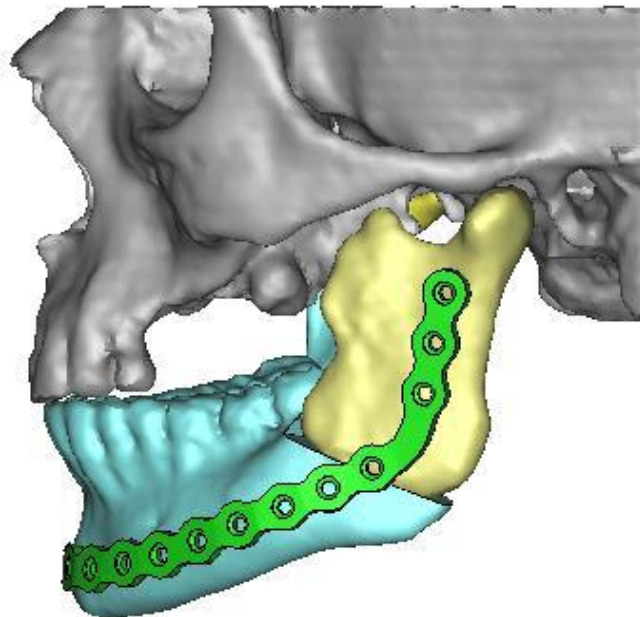
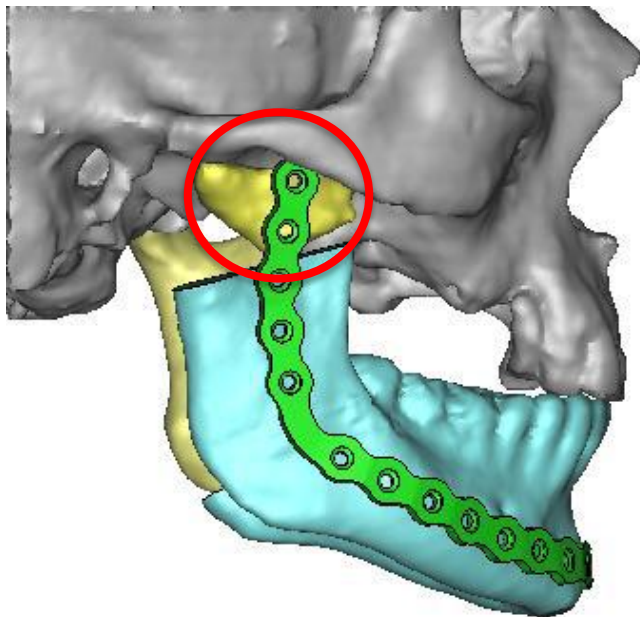
This made-to-measure plate is a possibility, because in the right ramis, there is only enough space for two screws (3 screws for proper attachment)





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PLATE VERSION 2





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PLATE VERSION 2

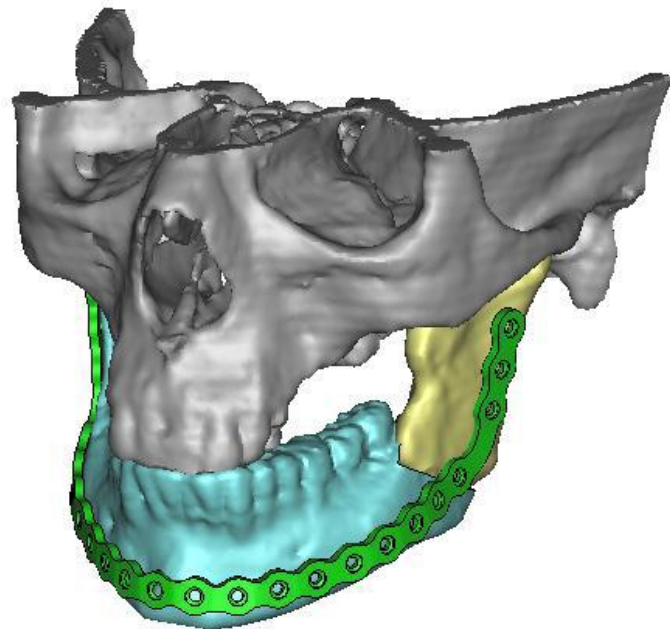
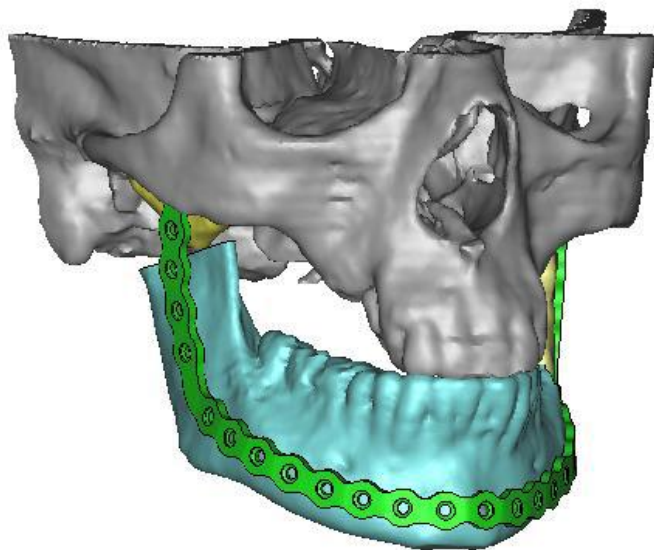
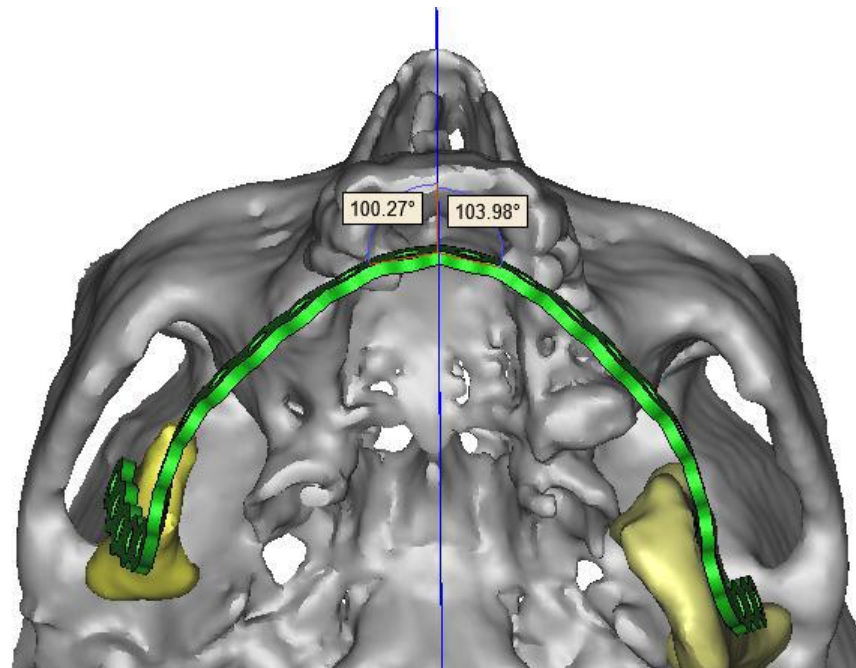
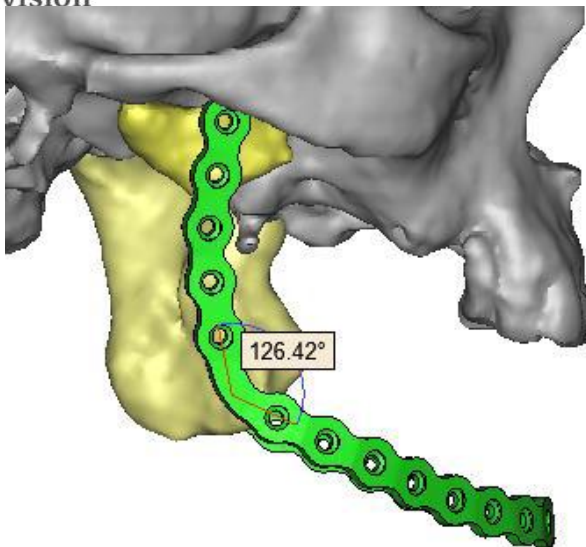




PLATE VERSION 2

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PLATE PREFORMING

For reasons of cost, it is decided that the plate will be preformed

The validated design is used as a template





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PLATE PREFORMING

The plate is designed without moving the right condyle (it is believed to be fused to the maxillar), although during the planning it is seen that it can be moved and this is done.

