

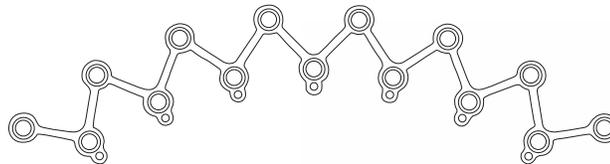
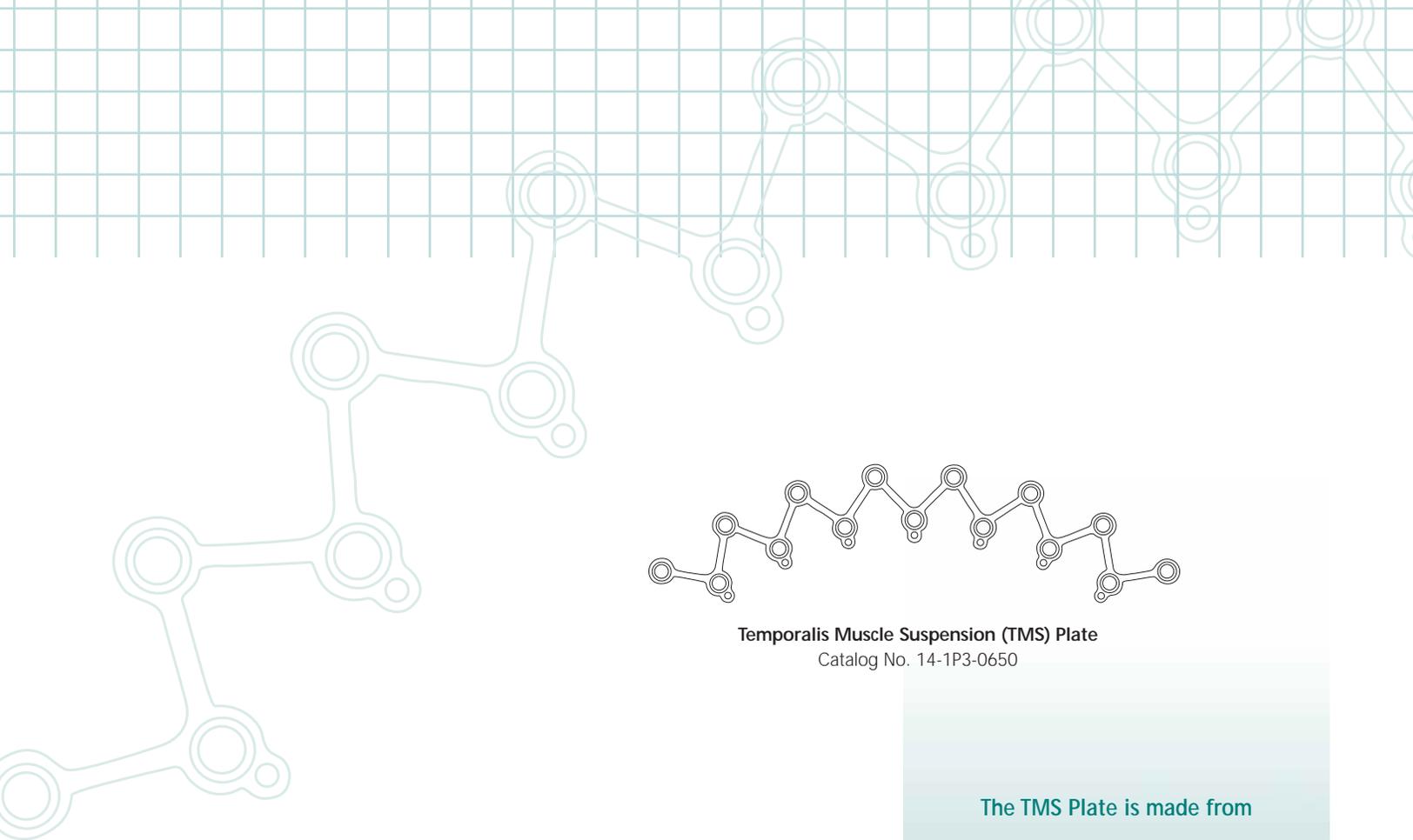
TMS Plate™

NeuroPro®

Temporalis Muscle
Suspension Plate



KINAMED®
INCORPORATED



Temporalis Muscle Suspension (TMS) Plate

Catalog No. 14-1P3-0650

Introduction

Craniotomies in the temporal and pterional region often require detachment of the temporalis muscle from the bone. If the muscle is not re-approximated and secured in its correct anatomical position, post-operative contracture of the muscle can occur resulting in masticatory dysfunction and cosmetic deformity.^{13,4}

The Temporalis Muscle Suspension (TMS) Plate has been designed to allow rapid, efficient, and secure fixation of the superior border of the temporalis muscle to the superior temporal line. Instead of taking the time to drill tangential holes in this thin area of the skull, and to avoid placing screws directly through the muscle fibers, this technique provides multiple points for suture attachment along the suspension plate.¹² This multiplicity of suture attachment points helps to distribute loads and provides suspension across a wide area of the muscle. At the same time, the plate may be used to bridge the craniotomy gap, thus providing the required rigid fixation along that side of the bone flap.

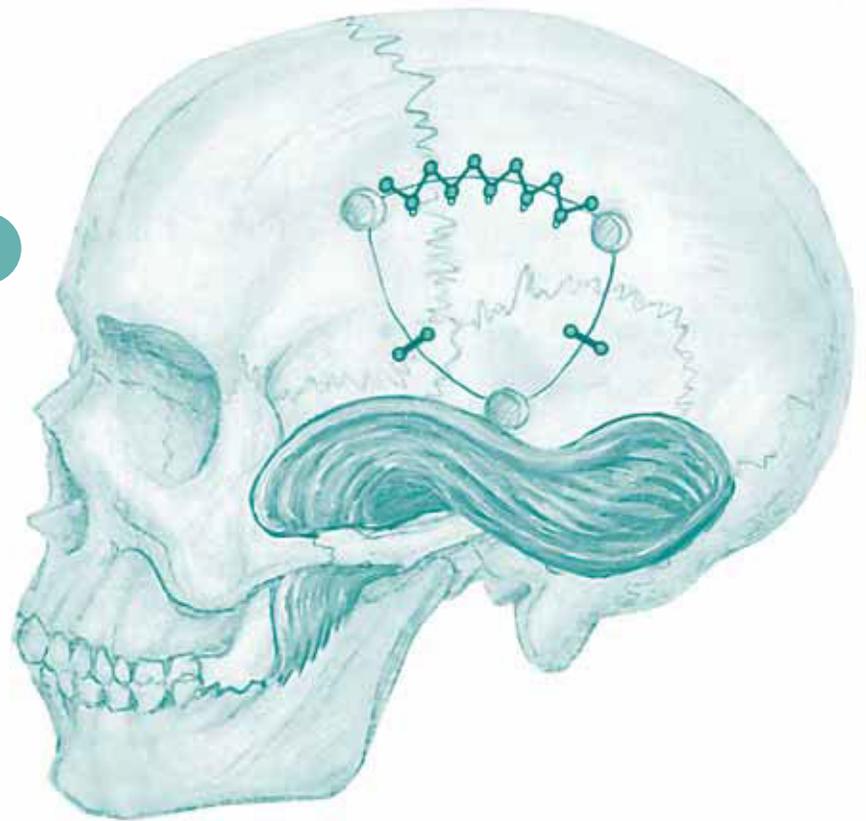
The TMS Plate is made from malleable pure titanium, allowing for custom contouring in all planes to match individual patient anatomy and to fit the curvature of typical craniotomies.

Surgical Technique

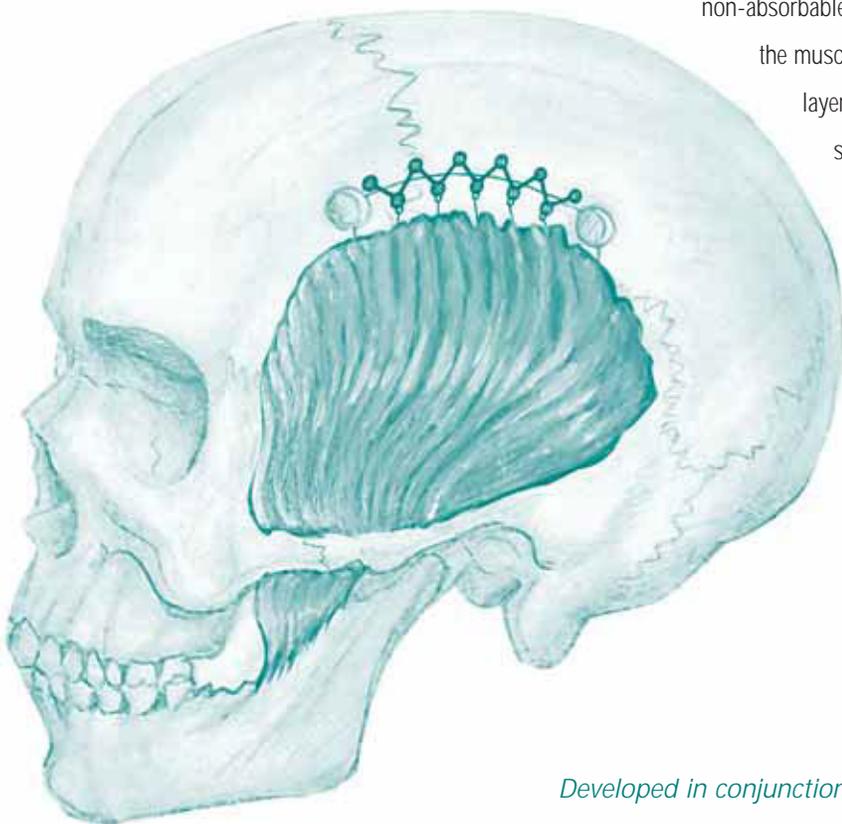
Re-affix the bone flap in the usual manner with at least three-point fixation. One of those points may be made by spanning a temporal or pterional craniotomy with a TMS Plate if the required plate position coincides with the craniotomy cut.

The TMS Plate is placed along the superior temporal line, or slightly inferior to it, depending on the amount of muscle available. For example, a cranioplasty performed a long period after craniectomy may be associated with temporalis muscle shortening and thus require a more inferior plate position.

The plate may be cut shorter as necessary and bent to the shape that best fits the need for an individual patient.



An SH-1 or smaller needle with either absorbable or non-absorbable interrupted sutures is used to attach the muscle. The temporalis muscle and its fascial layers should be sutured 5-10 mm from the superior border of the muscle and affixed at multiple points using the eyelets on the plate. If the plate is placed slightly inferior to the superior temporal line, the muscle may be pulled up and onto the plate by the suture, thereby obscuring the plate. The TMS Plate may typically be left as a permanent implant.



Reference list

1. Barone C.M., Jimenez D.F., Boschert M.T. (2001) Temporalis muscle resuspension using titanium miniplates and screws: technical note. *Neurosurgery*. 48:450-3.
2. Honig J.F. (1996) V-tunnel drill system in craniofacial surgery: a new technique for anchoring the detached temporalis muscle. *J Craniofacial Surgery*. 7(2):168-9.
3. Ono I., Tateshita T., Sasaki T., Matsumoto M., Kodama N. (2001)3 Technique for fixing a temporalis muscle using a titanium plate to the implanted hydroxyapatite ceramics for bone defects. *J Craniofacial Surgery*. 12(3):292-8.
4. Spetzler R.F., Lee K.S. (1990) Reconstruction of the temporalis muscle for the pterional craniotomy. Technical note. *J Neurosurgery*. 73(4):636-7.



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