# TOTAL TEMPOROMANDIBULAR JOINT **REPLACEMENT WITHOUT A SUBMANDIBULAR** INCISION

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# INTRODUCTION

Temporomandibular joint replacement is a an effective treatment option for advanced pathology of the temporomandibular joint that has not responded to more conservative management. A total joint replacement (TJR) is typically described using a pre-auricular/endaural and submandibular incision [1]. Facial nerve damage is a well reported complication of TJR [2]. In particular, the marginal mandibular branch is at risk during the submandibular approach and when it is retracted superiorly. We have developed an endoscopic-assisted technique for TJR that does not require a submandibular incision.

# **OBJECTIVE**

To describe the endoscopically assisted approach and technique for total temporomandibular joint replacement using the pre-auricular/endaural incision without the need for a submandibular incision.

# METHOD

### **I.3-Dimensional Planning**

3D planning of custom prosthesis on software to optimise adaptation of fossa and condyle component (Photo I)

# 2. Approach

Pre-auricular or endaural approach as per surgeon preference. Once the fossa, condyle and condylar neck are exposed, a periosteal elevator is used to dissect subperiosteally down the ascending ramus an adequate amount to allow complete adaptation of the prosthesis to the ramus (Photo 2, 3)



# 3. Condylectomy

4. Fixation of fossa component Drill guide used from custom planning

# 5. Intermaxillary fixation (IMF)

## 6. Transbuccal approach

Stab incision through cheek between marginal mandibular and buccal branches of facial nerve. Transbuccal trochar is inserted

## 7. Fixation of condyle component

A 4mm angled endoscope is inserted through the endaural incision as the condyle component is placed in position. Screw holes are drilled through the trochar (Photo 5) and then fixated with screws (Photo 6) under endoscopic vision (Photo 7) . The most inferior screw should be placed first. Adaptation is checked with the endoscope.

# 8. IMF released and occlusion checked

# 9. Fat graft

An abdominal fat graft can then be placed in the joint as per surgeon protocol/preference

# 10.Wound closure (Photo 8)

## Conclusion

This is a less invasive technique for TJR that avoids a submandibular scar and minimises the risk of damage to the marginal mandibular branch of facial nerve. This aims to optimise outcomes of TJR and reduce post-operative morbidity.

The authors have no conflict of interest to declare

#### **References:**

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