



“Interposition arthroplasty for TMJ Ankylosis with temporalis muscle flap: our experience and method”

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ABSTRACT

Temporomandibular joint ankylosis leads to restricted mouth opening and mandibular growth disturbances if not treated early. It can lead to problems with chewing, speech and oral hygiene.¹⁻³ Interposition arthroplasty has become the standard method of surgical intervention^{5,6} with various autogenous and alloplastic materials.^{4,5,7} We share our experience in 6 cases where we used temporalis muscle flap as interpositional material. Here we describe our modification and advantages of routing the muscle beneath the zygomatic arch to fill the gap created.

Keywords : Interposition arthroplasty, TMJ Ankylosis, Temporalis muscle flap

MATERIALS & METHOD

In this retrospective case study done at Department of Plastic and reconstructive surgery, Madurai Medical college between August 2013 to August 2016 a total of 6 cases were done and followed up for a period of one year. Age group varies between 8 to 23 years with 4 male and 2 female patients. Inter-incisor distance were documented both pre and post-operatively. All patients were evaluated with Orthopantomogram, CT Scan and 3D reconstruction. All the patients were diagnosed with unilateral bony ankylosis.

All the patients were operated under GA, intubated via fibre optic nasotracheal intubation. We follow an inverted hockey stick incision along the natural crease of the tragus with a temporal extension.

This incision allowed us for :

1. Adequate exposure
2. Allow Temporalis harvest via same incision
3. Avoid Facial nerve injury

Dissection and flap elevation done upto the zygomatic arch including the temporo parietal fascia. Incision made over the zygomatic arch and bony ankylotic mass was exposed and TMJ area marked. Removal of about 1 cm of ankylotic mass done all around using osteotome, burr and side punch. Coronoidectomy done via same route. Adequate mouth opening was achieved on table. In 2 cases contralateral coronoidectomy were needed to achieve adequate opening.

Middle portion of temporalis muscle was harvested and used as interposition material. In the first 3 cases temporalis was routed above the zygomatic arch into the gap and tucked in. Following 3 cases the temporalis was brought to the gap under the zygomatic arch from the medial aspect. Medial route of temporalis interposition has found to have following advantages :

1. Bulk of temporalis muscle available to fill the gap rather than distal portion
2. Firm muscle interposition was obtained without chances of slipping out
3. Difficult anchorage techniques not required.
4. Confirms the bony gap created all around.

Wound was closed with drains and post-operative mouth opening maintained with mouth probe. Early physiotherapy was started and patient was encouraged to take soft diet. Patient was followed up at regular intervals and mouth opening was documented. There were no complications in all cases.

Table 1.1

Age/Sex	Type	Route of interposition	Pre-op interincisor distance (cm)	Early Post-op interincisor distance (cm)
8y/Male	Unilateral/Bony	Over zygomatic arch	6mm	35mm
9y/Male	Unilateral/Bony	Over zygomatic arch	8mm	40mm
7y/Male	Unilateral/Bony	Over zygomatic arch	7mm	35mm
16y/Female	Unilateral/Bony	Under zygomatic arch	8mm	46mm
8y/Male	Unilateral/Bony	Under zygomatic arch	5mm	36mm
23y/Female	Unilateral/Bony	Under zygomatic arch	1cm	50mm

IMAGES

Case 1:

Figure 1 Pre-operative



Figure 2 Intra-operative



Figure 3 Immediate post-op



Figure 4 Late post-op

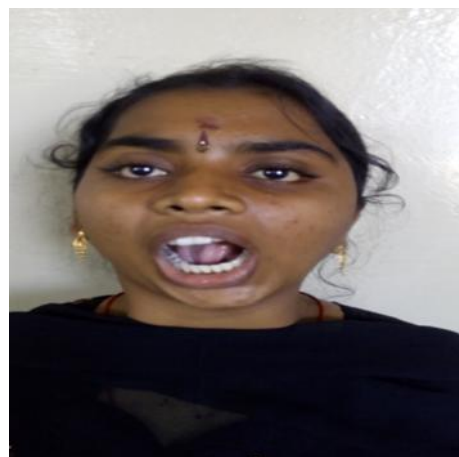


Figure 5 Inconspicuous scar

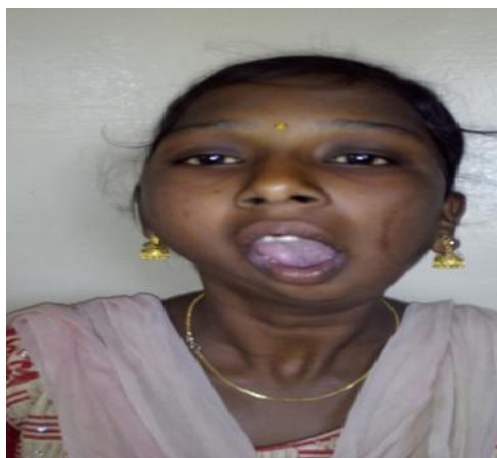


Case 2 :

Figure 1 Pre-operative



Figure 2 Late postop



CONCLUSION

We conclude that the medial approach of interpositioning the temporalis muscle is technically easier and conforms to the gap well. It also provides more bulk than lateral route.

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