

VERTICAL OSTEOTOMY OF THE RAMUS FOR CORRECTION OF PROGNATHISM

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Various types of Osteotomies have been devised for correction of mandibular prognathism. To mention a few, horizontal osteotomy of ramus; retromolar osteotomy; step osteotomy of ramus; step osteotomy of body; step osteotomy with resection of a bone segment; oblique osteotomy by intra oral or extra oral approach are some of the accepted methods.

Even though Caldwell and Letterman in 1954 described a technique of vertical osteotomy of ramus, Hinds and Robinson in 1958, popularised a simpler vertical osteotomy of ramus for correction of prognathism. This method was used in this case with slight modification.

Patient, C, male, aged 28 yrs. was admitted for correction of mandibular prognathism (Fig. 1, Fig. 2). Preoperative dental impressions were taken and dental casts were made. Preoperative X-rays were also taken. Case was studied in detail along with the Orthodontist of our Dental College.

Technique :

- (1) 2 inch curved incision in the skin around and 15 cm below bony border of angle of mandible.
- (2) Ramus exposed by detaching the massetric muscle from the inferior border

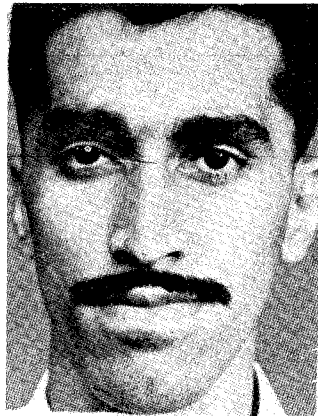


Fig. 1 Preoperative Profile View



Fig. 2 Preoperative Side View

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and elevating the massetric muscle.

(3) Retract the cheek containing the muscle, facial nerve and part of parotid gland until the mandibular notch is exposed.

(4) The line of osteotomy is marked. This falls vertically from the sigmoid notch to a point 1 cm in front of angle of mandible and is cut with electric drill, breaking it, finally with osteotome.

(5) When the bone is severed the external surface of the mandibular fragment is drilled at the place where it will be overlapped by the condylar fragment.

(6) The condylar fragment is now freed from the soft tissue attachment at its internal aspect by periosteal elevator and the surface is roughened by electric burr.

(7) The condylar fragment is placed over the mandibular fragment.

(8) The same procedure is carried out on opposite side.

(9) The dental surgeon now opens the mouth, the loose mandible is manipulated to obtain the predetermined position. With additional spot grinding intermaxillary fixation is done by placing wires around the lugs on the upper and lower arch bands which were attached to the teeth 2 days before the operation.

(10) Inspection of the operation site is done and position of the fragments observed; massetric muscle carefully sutured back, wound closed in layers after keeping a small rubber drain. Procedure is repeated

on opposite side. Bandage is applied to hold dressings in place.

(11) Dressings changed after 48 hours, stitches out on 7th day. Patient discharged after 10 days to attend Dental College O. P. weekly for check up. Postoperative X-ray were taken which showed fragments in position. Wire fixation was left for 8 weeks. X-rays were repeated after 3 months.

Postoperative clinical photographs were taken after six months. These show the excellent result in the case (Fig. 3, Fig. 4).

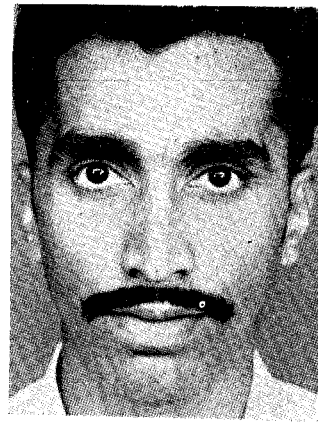


Fig. 3 Postoperative Profile View—6 months after operation



Fig. 4 Postoperative Side View—6 months after operation

There are many advantages for this technique compared to other methods.

(a) Adjustments as regard to correct occlusion is possible because you can push the front segment back without any difficulty till correct occlusion is achieved, and no much calculation is even necessary.

(b) The operation produces a much more efficient occlusion than is obtained when a segment of the tooth bearing part of the mandible is removed. In this type of osteotomy, the entire arch is moved without the loss of a valuable tooth to obtain a place to perform the operation.

(c) Numbness of the lip which may be temporary or permanent is avoided as the inferior dental nerve and artery are not divided or accidentally injured between fragments in this method.

(d) The horizontal fixation needed in osteotomies in the body of the mandible

which are known for their slow healing and their tendency to develop fibrous union is eliminated.

(e) Immobilization time is shorter than with operation in the horizontal ramus.

(f) Local wiring of fracture fragments is not essential.

(g) The raw areas increase the surface union.

(h) Padded muscles on either side of vertical ramus keep segments in fairly good position.

(i) Except the masseter, other muscle attachments are not interfered with. Since the muscles of the tongue and floor of the mouth are not involved no oedema results to make swallowing difficult.

(j) Since the osteotomy is performed by extra oral approach complete asepsis is possible. Properly placed, this incision leaves a cosmetically acceptable scar.

REFERENCES

1. Caldwell, J. W., and Letterman, G. S. : J. Oral Surg., 12 : 185, 1954.
2. Hinds, E. C. : J. Oral Surg., 16 : 209, 1958.
3. Robinson, M. : J. Oral Surg., 16 : 215, 1958.