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Review Article

Genioplasty: As Single Transforming Procedure

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Abstract: Dentofacial deformities are commonly associated with the chin area when it is inappropriate in size, shape, and position. When three-dimensional facial analysis is made, the chin becomes an important part within the same since it can significantly alter the symmetry, balance, and facial shape. We present a report of A 26 year old female reported with complaints of facial asymmery. On examination she had facial asymmetry with deviation of chin to her left side. Her radiograph (OPG) revealed hypoplasia on the left side of mandible and (lateral cephalogram) with severe chin retrusion. Further evaluation with CT confirmed her diagnosis of Hemifacial microsomia. She was planned for osseous sliding genioplasty procedure under general anesthesia It provide obvious and satisfactory outcome in severe chin deformity which seem very concerning and may seem to include other complex osteotomies. Hence with proper planning and asessment, prioratising patients chiefcomplaint genioplasty can give very satisfactory outcome.

Keywords: Dentofacial deformities, chin area, radiograph (OPG), hypoplasia.

INTRODUCTION

Dentofacial deformities are commonly associated with the chin area when it is inappropriate in size, shape, and position. When three-dimensional facial analysis is made, the chin becomes an important part within the same since it can significantly alter the symmetry, balance, and facial shape. The genioplasty was first described by Hofer in 1942 and has had multiple changes through the years by multiple authors such as Converse, Trauner, Obwegeser, Reichebach, Neuner, Epker among others. It is a surgical procedure that through different techniques can descend, reduce, advance, or retract the projection of the chin. This technique is helpful in the treatment of dentofacial deformities due to its versatility and different techniques. In experienced hands the risks are almost non-existent and can improve the normal symmetry and harmony of the face [1].

A 26 year old female report with complaints of facial asymmery. She has past history of skin tag excision done on face. On examination she had facial asymmetry with deviation of chin to her left side. Her radiograph (OPG) revealed hypoplasia on the left side of mandible and (lateral cephalogram) with severe chin retrusion. Further evaluation with CT confirmed her diagnosis of Hemifacial microsomia (Figure 1).

Prior to embarking on attempts to correct dentofacial defects, it was important to have an accurate diagnosis of the existing problem. Cephalometric measurements, clinical examinations and model analysis were done with virtual surgical planning. A treatment plan was decided on the basis of patients chief complaint, this diagnosis and should included the osteotomy planned, amount and direction, the segments to be moved. It waslanned for extended sliding differential genioplasty with advancement of 8mm. Often there will be a particular treatment that provides

the best outcome, but ideally, the treatment plan of each patient should be individualized as two deformities are never alike based on their chief complaint.

Figure 1: Pre operative profile view of the patient with severe retrognathic chin

Surgical Technique

An intraoral incision made the incision was kept toward the labial surface instead of at the vestibular depth or toward the dentition. Initially care is needed with the lateral aspects of the incision so as to not transect the terminal branches of the mental nerves (whic was preserved). Retraction of the mucosa allowed the nerves to be visualized just deep to the surface, helping in their avoidance. Then the mentalis muscles were transacted, and a full thickness subperiosteal flap is elevated in order to completely expose the anterior mandible. The mental foramina and nerves were identified and exposed bilaterally. Once appropriate exposure was achieved, the midline and para-midline areasirgical bur. This was to leave a lasting reference for the procedure. Precise measurements were made to mark out the location for the osteotomy. Marking this line, in a manner similar to that mentioned above, aids in the actual procedure. Importantly, the osteotomy should stay a minimum of 4.5 mm below the mental foramen and ideally should be closer to 6 mm below so as to not injure the mental nerves [2]. Angulation of the osteotomy variations were done and adjusted based on the desired result of the procedure. Once the osteotomized segment was down fractured carefully inspect the lingual pedicle and floor of mouth soft tissues. Bleeding, was controlled before progressing. Excess bone obtaine later used as interpositional graft in the differential downward movement on the left side. Then position the inferior border segment to the desired location was done and was secure it in place. For stabilization of the inferior segment, hole was made throughbuccal cortex of mobile segment. Bicortical screw is tightened to pull the mobilized portion of the chin to the desired position.Appropriate symmetry was maintained by utilizing the reference lines that were placed at the time of the surgery, but in cases of pre-existing asymmetry or cases combined with other procedures it was more difficult.

Post operative care

An external dressing with minimal compressio (so as not to compress the advanced chin) was give. Post operatively patient was put on antibiotic, analgesic and steroid. A soft diet was adviced. Oral hygiene was maintained with pediatric tooth brush to avoid distorting the surgical site while brushing. On the second post operative day she was discarged. Patient

was on follow up with no undue complications (Figure 2).

Figure 2: Immediate post oerative profile view of the patient

Expected complications of Genioplasty

Though genioplasty is a minimally complex procedure,surgeon always anticipates for complication which could be immediate, post operative or delayed [2]. These includes tooth devitalization neurosensory loss, soft tissue chin ptosis, dental root exposure, asymmetry, irregularities and step deformities ,lower lip lag, over and under correction, patient or surgeon dissatisfaction [3, 4].

CONCLUSION

Osseous genioplasty is an extremely stable procedure associated with a relatively low risk of complications. It is also a particularly versatile procedure and can be used to correct a wide range of deformities related to the chin, including horizontal and vertical excess, horizontal and vertical deficiency, asymmetry, and abnormal contour [5, 6]. It provide obvious and satisfactory outcome in severe chin deformity which seem very concerning and may seem to include other complex osteotomies. Hence with proper planning and asessment, prioratising patients chiefcomplaint genioplasty can give very satisfactory outcome.

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