Sculpturing the broad face to 'golden proportions'

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RC Schultz. Sculpturing the broad face to 'golden proportions' *Can J Plast Surg* 1994;2(1):24-27. The oval shaped face is generally accepted as having the most beautiful configuration and the 'golden proportion' (1:1.618) ideal. Such a configuration can be altered to a square or rectangular shape by an increase in width of the lower face. This broadened morphology can be caused by three anatomical elements: hypertrophy of the masseter muscles, hypertrophy and flaring of the mandibular angles, and hypertrophy or herniation of the buccal fat pads of Bichat. The first two anatomical structures can occasionally become enlarged through work hypertrophy related to malocclusion or dental disease, and the latter displaced through traumatic herniation. Each of these contributing anatomical anomalies can be reduced in size by a single intraoral operative procedure with minimal risk to achieve an aesthetically pleasing oval shaped configuration to the face. There are very few hazards to this procedure and the results are routinely satisfying to both the patient and the surgeon.

Key Words: *Flaring mandibular angles, Golden proportions, Hypertrophy masseter muscles*

Visage élargi ramené à des proportions idéales

RÉSUMÉ : On considère généralement le visage de forme ovale comme la configuration la plus harmonieuse et comme l'étalon or. Cette forme peut se voir transformée en carré ou en rectangle par un élargissement du bas du visage. L'élargissement du bas du visage est habituellement causé par trois éléments anatomiques. L'hypertrophie des muscles masséter, une hypertrophie et une dilatation des angles mandibulaires et l'hypertrophie ou hernie des coussinets adipeux de Bichat. Les deux premières structures anatomiques peuvent à l'occasion enfler et s'hypertrophier à cause d'une malocclusion ou d'une maladie dentaire, et la dernière structure peut se déplacer à cause d'une hernie traumatique. Chacun de ces cas peut être corrigé par une simple intervention chirurgicale intra-orale, qui s'accompagne d'un risque minime, et donner une configuration ovale esthétiquement harmonieuse au visage. Cette intervention comporte très peu de risques et les résultats sont habituellement satisfaisants pour le patient comme pour le chirurgien.

The oval shaped face is generally accepted as being the most becoming, especially in the female (1). Attempting to quantify beauty by measurement, although appealing and comforting to the aesthetic plastic surgeon (2,3), is – in practice – usually impractical and seldom rewarding (4). This is because a beautiful face can be appreciated with extreme variations in measurements. Nevertheless, the time-honoured 'golden proportions' (1:1.618) (5) can serve as an accepted standard of beauty in facial configuration. The surgeon need not work with measured numbers to correct objectionable facial features, but the width of the lower face ideally is less than the width of the midface. The widest portion of the face ideally relates to the facial length as measurements approach these 'golden proportions' (6).

Modification of the length of the face and the width of the midface, though possible by craniofacial and orthognathic surgical techniques, can be difficult and hazardous, some-

times resulting in long term complications or disappointment. By contrast, however, remodelling a broad lower face to approach a more attractive oval configuration (Figure 1) can usually be accomplished easily and safely, without external scars, when certain objectionable anatomical morphology exist (7).

Facial configuration, made unattractively square by unilateral or bilateral hypertrophy of the masseter muscles and accompanied by flaring and hypertrophy of the bony mandibular angles (Figure 2) can be improved by a single intraoral surgical procedure (8). This can be performed under general anesthesia on an out-patient basis. The risks and potential complications of the procedure to be described are minimal.

ETIOLOGY AND MORPHOLOGY

A search for the etiology of this aesthetic deformity is usually disappointing. Occasionally there seems to be an association with bruxism, functional malocclusion or symptomatic dental disease. Physical and radiographical findings,

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Figure 1) Changing the broad lower face according to 'golden proportions'

Figure 2) Patient with broad lower face related to masseter muscle hypertrophy, flared mandibular angles and hypertrophy of buccal fat pads of Bichat

Figure 3) Outline of location of hypertrophic masseter muscles made by palpation before anesthesia

however, are quite consistent. Masseter muscle hypertrophy can both be seen and palpated, especially when the patient bites down forcibly. Hypertrophy and flaring of the mandibular angles can be seen and demonstrated radiographically as hyperostosis. In some patients, hypertrophy or herniation of the buccal fat pad of Bichat can also be found as an associated finding causing the mid-lower face to appear even broader (9).

Unless bruxism, functional malocclusion or symptomatic dental pathology is present, alteration of occlusion is not a component of treatment. Management of this deformity consists of direct subtotal reduction of the hypertrophied or herniated structures: the masseter muscles, the flared mandibular angles and the buccal fat pad of Bichat.

SURGICAL TECHNIQUE

The masseter muscles, the flaring of mandibular angles and the fat pad of Bichat (when hypertrophied or herniated) are each outlined on the skin with a marker before the onset of anesthesia (Figure 3). Under general nasotracheal anesthesia with the patient in Fowler's position, the mandible is extended widely.

A mouth gag is inserted. The proposed incision is marked just lateral to the ascending ramus extending down onto the

Figure 4) Proposed incision marked intraorally on mucous membrane just lateral to ascending ramus

Figure 5) Exposure of buccal fat pad of Bichat protruding from the anterior border of the masseter muscle

Figure 6) The deep portion of the masseter muscles is dissected free from the ascending ramus and resected from below the zygomatic arch to the mandibular angle

Figure 7) Flaring posterior-inferior border of mandibular angle is resected with an angled power saw

lower gingival sulcus opposite the first molar tooth (Figure 4).

An incision is then made suprapariosteally through the mucous membrane in the area described. This incision is carried down to the anterior border of the masseter muscle which ordinarily quickly bulges into the incision. At this point the fat pad of Bichat, when hypertrophied or herniated, also appears in the incision (Figure 5). When hypertrophied or herniated this fatty structure is subtotally resected to reduce the bulk of the cheek in this region.

The masseter muscle is then divided between its internal and external segments and dissected free from the ascending ramus. After the muscle segments have been isolated, a large segment of muscle is divided at its insertion (Figure 6) and

Figure 8) Top Close-up view of the resected segments of buccal fat pad of Bichat, masseter muscle and flaring mandibular angle. **Bottom** Comparison of resected segments bilaterally

Figure 9) Appearance of patient one month following surgery, demonstrating improved aesthetic facial contour and normal smile

carefully dissected up to the zygomatic arch using a peanut dissector. When this muscle segment is clearly mobilized it is resected beneath the border of the zygomatic arch.

A transverse incision is then made through the periosteum covering the ascending ramus and is carried down onto the body of the mandible. The periosteum is elevated from the flaring edge of the mandibular angle. The heavy posterior-inferior portion of the mandible is resected with an angled power saw (Figure 7). These bony segments as well as the muscle segments are saved and compared one side to another for symmetry (Figure 8).

The patient may be given an intravenous dose of steroids to minimize subsequent facial swelling. Blood loss from such a procedure is seldom more than 50 mL. Excellent recontouring of the face to an oval shape can be achieved with such a procedure retaining a normal, aesthetically pleasing smile (Figure 9).

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