นิพนธ์ต้นฉบับ

A new technique for mandibular angle resection

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Jindarak S. A new technique for mandibular angle resection. Chula Med J 1998 Nov; 42(11): 995 - 1001

Objective : *To introduce a new technique for mandibular angle resection in facial esthetic surgery*

Design : *Prospective study*

Setting : *Division of Plastic and Reconstructive Surgery, Department of Surgery, Faculty of Medicine, Chulalongkorn University*

Subjects : *Twelve prominent mandibular angle patients*

Method : *All 12 patients were treated surgically to reduce the prominent mandibular angle by using a newly designed method. This method is a combination of the existing external approach and intraoral approach in order to obtain the advantages and to eliminate the disadvantage of each approach*

Results : *Completed successfully and satisfied cosmetic results were attained without any serious complication*

Conclusion : *The combined technique of external and intraoral approach for mandibular angle resection is new was proved to be useful.*

Key words : *Mandibular angle resection, Esthetic surgery.*

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Received for publication. August 15, 1998.

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ศิรชัย จินดารักษ์. เทคนิคใหม่ในการผ่าตัดมุมคาง. จุฬาลงกรณ์เวชสาร 2541 พ.ย; 42(11): 995 - 1001

วัตถุประสงค์ : *เพื่อเสนอและเทคนิคใหม่ในการผ่าตัดมุมคางเพื่อความสวยงามของใบหน้า*

รูปแบบการวิจัย : *การศึกษาแบบไปข้างหน้า*

สถานที่ทำการศึกษา : *หน่วยศัลยศาสตร์ตกแต่งและเสริมสร้าง ภาควิชาศัลยศาสตร์ คณะแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย*

กลุ่มประชากรที่ศึกษา : *คนไข้ที่มีกระดูกมุมคางใหญ่ จำนวน 12 คน*

วิธีการศึกษา : *คนไข้ทั้งหมด 12 คน ได้รับการผ่าตัดด้วยเทคนิคใหม่ ซึ่งอาศัยวิธีผสมผสานระหว่างการผ่าตัดจากภายนอกและภายในช่องปาก เพื่ออาศัยข้อดีของทั้ง 2 วิธีและหลีกเลี่ยงข้อเสียของทั้ง 2 วิธีด้วยเช่นกัน*

ผลการศึกษา : *ผลสำเร็จเป็นที่พึงพอใจของผู้ป่วยทั้ง 12 ราย โดยปราศจากผลแทรกซ้อนที่รุนแรง*

สรุป : *เทคนิคใหม่ที่ใช้การผสมผสานในการผ่าตัดทั้งจากภายนอกและภายในช่องปากเป็นเทคนิคที่ง่ายและมีประโยชน์*

Facial surgery for the sake of beauty can be carried out by several means, involving soft tissue and bone surgery. Mandibular angle resection which is conducted for improving the looks on a square face has gained popularity very much, due to the possibility to change the face for beauty. In 1949, W.M. Adams introduced the technique of skin incision at the angle of mandible and resected the angle of mandible, while removing medial part of the masseter muscle. Converse advanced a new kind of surgery, in 1951, by intraoral approach aimed at operating on angle of mandible and medial part of the masseter muscle. These two methods serve as the standard for mandibular angle resection which are practiced up to the present day. The author has developed a new techniqe of mandibular angle resection, by combining the intraoral and extraoral approach techniques mandibular angle resection was conducted on a group of patients having prominence angle of the mandible but the masseter muscle being normal.

Surgical Technique

Twelve patients, eleven females and one male, were examined meticulously and confirmed by panorex (Figure 1), to ensure they had prominence angle of the mandible. Lateral cepharometric study (Figure 2) was done to evaluate the extent of bone resection without injuring the inferior aveolar nerve. After measurements were made, the film was cut into a model, making it slightly smaller than the arranged position. This is because the size measured by X-ray lateral cepharometric is slightly larger than the actual size of the bone and some bone loss by this technique.

Under general anesthesia, with nasotracheal intubation, to prevent the tube from disturbing during the operation. Xylocaine with 1: 200,000 adrenalin was infiltrated around mucosa at angle of the mandible. A mucosal incision was made at the angle approximately five centimetres long. (Figure 3) Thereafter, subperiosteal dissection was performed to expose angle of the mandible laterally and then proceed to the the lower border and medial side of mandibular angle. (Figure 4) Thereafter, the prepared model was attached to the angle and position was marked.

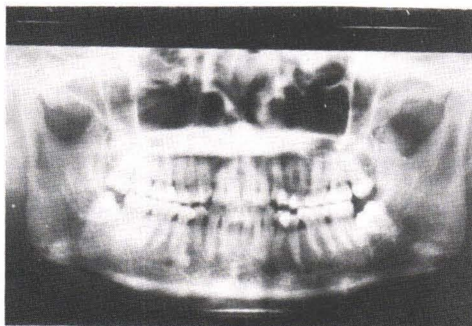

Figure 1.

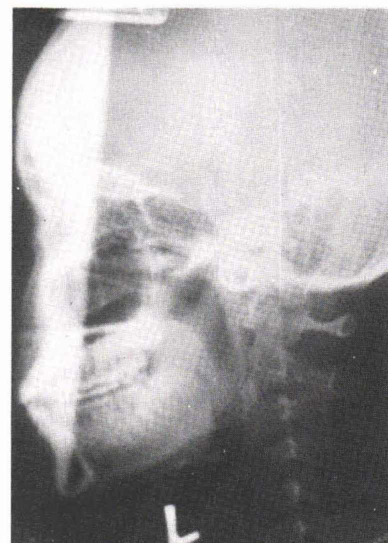

Figure 2.

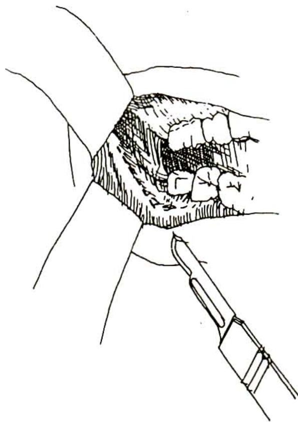

Figure 3. Mucosal incision.

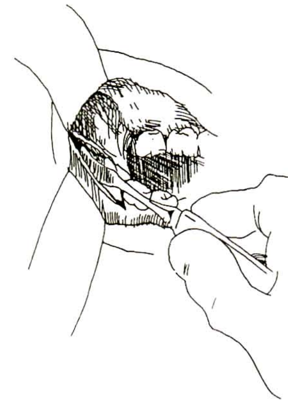

Figure 4. Subperiosteal dissection.

After that stabbing incision was made on the skin at the mandibular angle area, blunt dissection by an arterial clamp was made though platysma and masseter muscle, proceeding to the pocket inside that was dissected. (Figure 5) Then a sleeve was inserted through the hole. (Figure 6) Consequently a drill was used for burring along the mark on the bone, penetrating pass through the two cortexes of the bone. (Figure 7) This was followed by small osteotome, passing through the stabbing incision hole and cutting was made between the hole continuously along the marked line at the outer cortex. (Figure 8) After that the innecortex was cut in the same way as the first cortex. Then the cut bone was remove via the mouth. There after, the burr was inserted into the mouth and comming along the sleeve to join the handpiece outside. Thereafter the bone was burred as needed to achieve good contour, the sleeve was taken out, then the tube drain was inserted via the stabbing incision, the oral mucosa was sutured by chromic cat gut No. 4 - 0 interrupted vertically mattress.

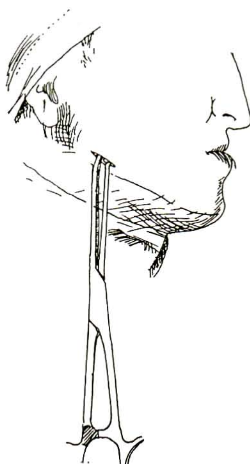

Figure 5. Stabbing incision.

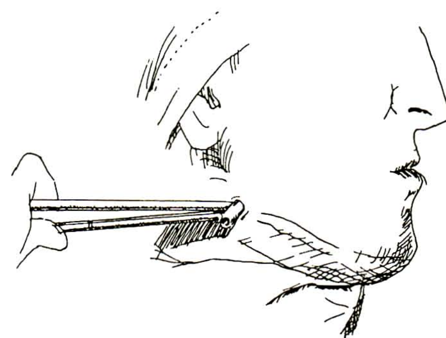

Figure 6. Insertion of a sleeve.

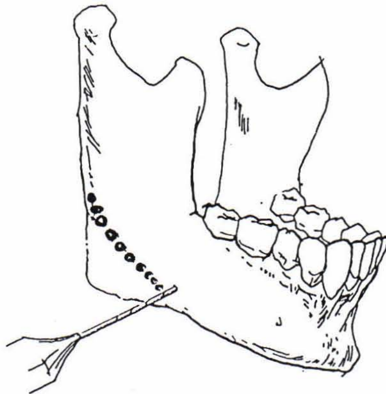

Figure 7. Bone drilling.

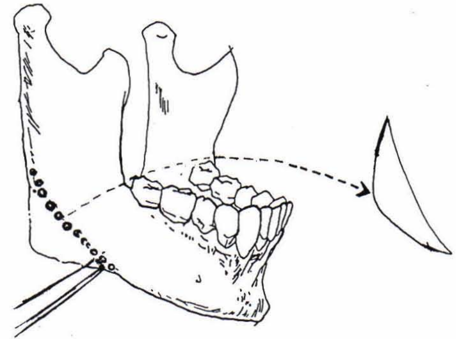

Figure 8. Bone cutting.

Result

The operations on the twelve patients were completed successfully and satisfied cosmetic results (Figure 9, 10, 11, 12) without any serious complication. However, there was one patient who suffered from burn around the hole of the skin, because of excessive heat. Nevertheless, the wound healed by itself.

Figure 9.

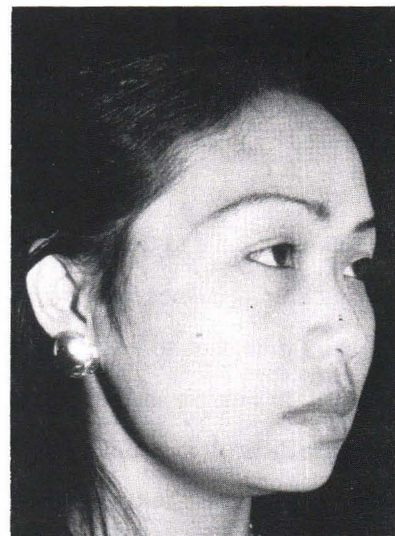

Figure 10.

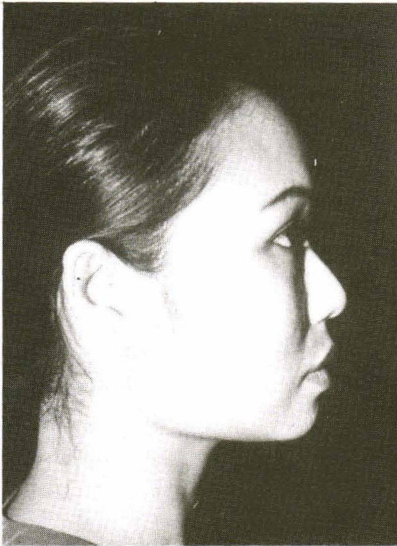

Figure 11.

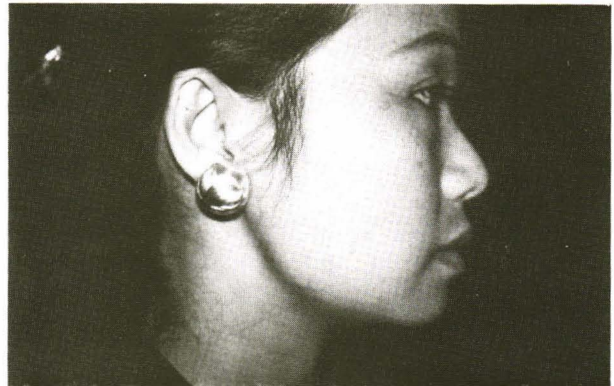

Figure 12.

Discussion

Prominence of the mandibular angle is a common concern of Oriental people, more so than of their Western counter parts.(1-5) Mandibular angle resection is the surgery capable of transforming a square face for enhanced beauty. This operation is fairly easy with less complicatons. Nevertheless the type of operation advanced by W.M. Adams in 1949, involving an external approach has some advantages that it permits the cutting of bone to the desired shape, easy, clear – cut and able to achieve the desired contour. However, it has a drawback to leave a visible scar. In case of necessity to remove medial part of masseter muscle, it is more difficult to achieve than the intraoral approach and it may cause injury to the mandibular branch of facial nerves. As for an intraoral approach, the advantages lie in the invisible scar and it is easy to remove the medial part of masseter and it does not injure the mandibular branch of the facial nerves. Again, there are the disadvantages arising from the need to use special tools and equipment, poor exposure and it is very much more difficult than the external approach resulting in more postoperative swelling of face.

Regarding the combination approach advanced by the author, it is a new technique capable for cutting the bone to any desired shape and it permits of handling the bone with ordinary tools with minimal traction to achieve good exposure. This technique is convenient and permits to remove medial part of the masseter muscle intraorally, if desired and it does not injure the mandibular branch of the facial nerves. Moreover, the scar remain invisible. The "Combined technique" is new and useful. It can be applied as a good choice by means of mandibular angle resection.

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