RHINOTOMY AND SINUS SURGERY: GENERAL CONSIDERATIONS

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Many surgical techniques have been advocated for the removal of tumors of the nasal cavities and the accessory sinuses. The purpose of this presentation is to suggest a modified technique (hemi-lateral rhinotomy), which, in selected cases, affords a more adequate exposure than the customary procedures. The application of rhinoplastic principles, basically a medial and lateral osteotomy, costs little in terms of cosmesis. The approach which will be described was first presented by Dr. M. H. Cottle[1]. He suggested a medial and a lateral osteotomy for exposure of the nasal chamber.

Anesthesia may be local or general. Excellent anesthesia can be obtained locally with the use of cocaine flakes and adrenalin topically, intranasally, and a 2 per cent Xylocaine with epinephrine 1 : 100,000, injected subcutaneously. The infraorbital and the palatine foramina are injected.

Preoperative medications used when I wrote the original paper[2] were Doriden, grams 1, two hours prior to surgery; Demerol, 100 mgm., and Thorazine, 12½ mgm, one hour prior to surgery.

More recently, we have used Barbital, 10 gr., two hours preoperatively; either Demerol, 100 mgm., or morphine, gr. 1/6, with 5—10 mgm. of Compazine, one hour prior to surgery.

OPERATIVE PROCEDURE:

The line of incision is marked with methylene blue, beginning in the area of the nasofrontal suture, 3 mm. medial to the inner canthus, extending inferiorly to and around the alar facial fold so as to complete an alar vestibular incision. The incision is made to the bone, thus incising the periosteum, which is elevated laterally over the anterior wall of the maxillary sinus. The corresponding nasal bone is separated from the nasal septum cephalic to the rhinion, intranasally, with a 7 mm. chisel. The lateral osteotomy is completed under direct vision by means of a saw, straight 4 mm. chisel and a curved 5 mm. chisel, thus completely severing the nasal bone medially, laterally, and superiorly in the region of the nasofrontal suture. The mucosa may be incised with a sharp Bard Parker 11 or 15 knife after the osteotomy is completed. The side of the nose is then retracted medially and held in place by means of a silk suture inserted in the footplate of the ala. (See Figures 1 and 2).

The lacrimal apparatus is then dissected free by removing the thin layer of bone external to the lacrimal duct down to its entrance into the inferior meatus. The lacrimal duct is severed on a bias so it can be resutured to the inferior portion of the orbital contents, which will help postoperatively to keep the cavity moist and prevent crusting.

The bone over the face and the apex of the maxillary sinus is removed to completely expose the maxillary sinus and its contents. (See Figure 3).

The lacrimal duct is retracted laterally. The orbital contents are elevated from the lateral wall of the ethmoid labyrinth, severing the anterior and, later, the posterior ethmoid vessels. Bleeding is easily controlled by adrenalin tam-

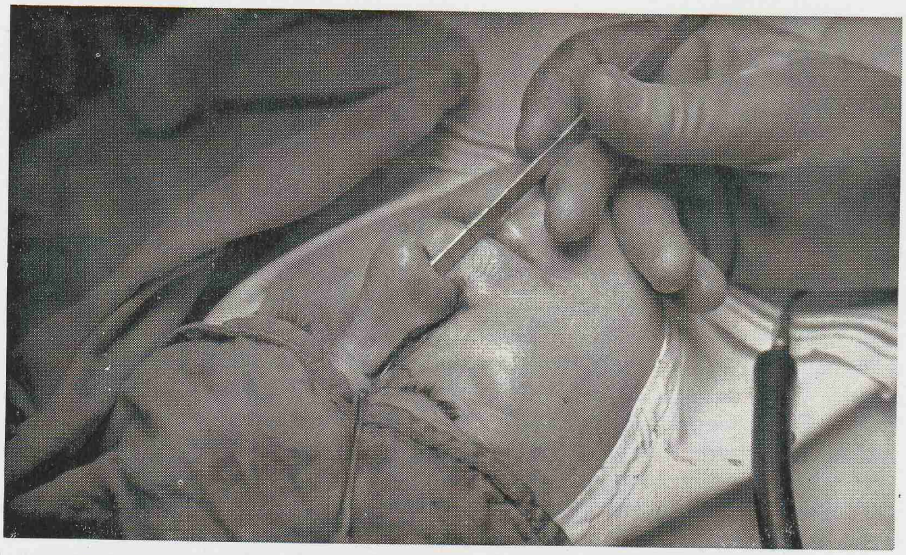

Fig. 1. Demonstrates the line of incision and also shows the 7 mm. chisel in place prior to the medial osteotomy.

Montre la ligne d'incision et le ciseau de 7 mm en place avant l'ostéotomie médiane.

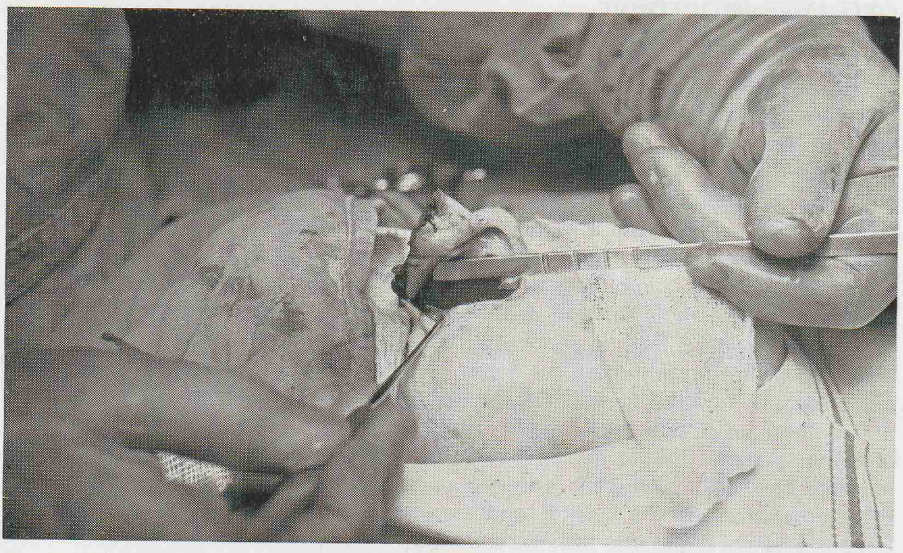

Fig. 2. Showing area of insertion of the chisel for the medial osteotomy, retraction of the nose medially, the lacrimal apparatus, and a thin layer of bone over the lacrimal duct.

Montre l'endroit d'insertion du ciseau pour l'ostéotomie médiane, rétraction du nez vers la ligne médiane, l'appareil lacrymal et une fine couche d'os recouvrant le canal lacrymal.

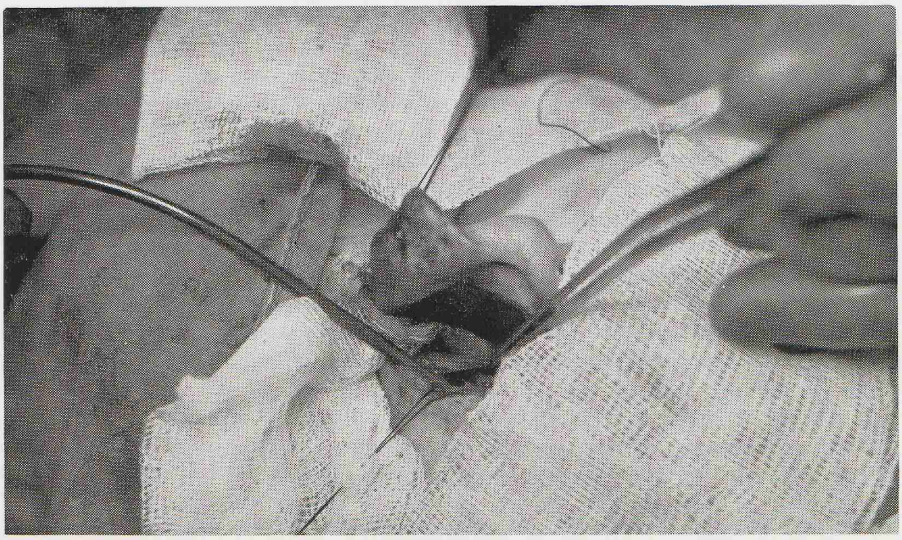

Fig. 3. Showing lateral wall of the external nasal pyramid retracted medially, the nasolacrimal duct retracted laterally with a silk suture, the suction in the maxillary sinus, and the bayonet forceps pointing toward the tumor.

Montre la paroi latérale de la pyramide nasale externe écartée vers la ligne médiane, le canal lacrymal écarté vers l'extérieur au moyen d'un fil de soie, l'aspiration dans le sinus maxillaire et la pince en bayonette indiquant la tumeur.

pons. The base of the lateral wall of the nose (the medial inferior wall of the maxillary sinus) is then separated with a 7 mm. chisel down to the palatine foramen. The chisel is then inserted superiorly immediately below the cribiform plate to sever superiorly the medial wall of the orbit or the ethmoid plate from its attachments down to the face of the sphenoid. A curved chisel is then used to further sever the lateral wall of the nose from its posterior attachments, carefully avoiding the transsphenoidal vessels, thus removing the lateral wall of the nose and any tumors attached thereto.

This approach also provides an excellent exposure of the cribiform plate, the sphenoid sinus, and the nasopharynx. If deemed advisable to remove the mucosa of the maxillary sinus, it could be elevated and left attached to the middle meatal region, and the entire contents of the maxillary sinus, most of the ethmoid cells, and the lateral wall of the nose could be removed in toto.

The remainder of the ethmoid cells can be exenterated. The sphenoid sinus, the nasofrontal duct, the nasopharynx, and the cribiform plate can be inspected. If one wishes to explore the frontal sinus and the remaining supraorbital ethmoids, the incision can be extended superiorly and laterally over the floor of the frontal sinus, removing the bone from the floor of the sinus.

The lacrimal duct is then sutured to the floor of the orbit. The cavity is then packed with vaseline gauze, with or without a split thickness skin graft. The lateral wall of the nasal pyramid is then laid back in its original position. The

tissues are then approximated in layers, being careful to suture the periosteum and subcutaneous tissue, as this will tend to prevent any invagination of the lateral wall of the external nasal pyramid. The skin is sutured with silk or 5-0 dermalon. Before approximating the floor of the vestibule medially, it is advisable to trim the medial aspects of the ala so as to reduce the size of the nostril on that side, which will also tend to prevent further crusting. A postoperative pressure dressing is applied.

The stitches may be removed on the third or fourth day, the intranasal packing on the fourth or fifth day and, if no severe bleeding is encountered, the patient is discharged at that time.

This approach is indicated in carefully selected cases, where the customary procedures would not give adequate exposure for satisfactory removal of the tumor. It could be performed as a bilateral procedure if indicated, with resulting preservation of the nasal septum and the integrity of the nose.

CONSIDÉRATIONS GÉNÉRALES SUR LA RHINOTOMIE ET LA CHIRURGIE DES SINUS

La rhinotomie hémi-latérale peut être pratiquée sous anesthésie locale ou sous anesthésie générale.

L'ostéotomie médiane et latérale, associée à une libération complète d'un côté du nez forment la base de la technique chirurgicale et permettent l'exposition d'une fosse nasale. Le périoste peut être ruginé latéralement et l'os recouvrant l'appareil lacrymal ainsi que la face et l'apex du sinus maxillaire peuvent être enlevés afin d'exposer complètement l'appareil lacrymal et le sinus maxillaire avec son contenu. La paroi latérale du nez et les tumeurs qui s'y trouvent éventuellement, peuvent être extirpées très facilement, en mobilisant en premier lieu la partie inférieure de la paroi latérale du nez, en libérant en suite la partie supérieure pour terminer par une torsion prudente de la paroi latérale du nez afin de la libérer de ses attaches postérieures dans la région des vaisseaux transsphenoidaux.

Cette voie d'approche unilatérale procure une excellente exposition de la fosse nasale, du sinus sphenoidal, du nasopharynx, de la lame criblée et du sinus maxillaire.

Il n'y a aucune contre-indication pour l'intervention bilatérale avec conservation complète de l'intégrité de la cloison nasale.

La rhinotomie hémi-latérale est indiquée dans des cas soigneusement sélectionnés.

BIBLIOGRAPHY

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