Push-down of the external nasal pyramid by resection of wedges

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SUMMARY

A technique of wedge resection is used for reduction of an extreme projection of the bony nasal pyramid. In these cases the push-down technique is inadequate, and resection of the dorsum is considered too destructive. The method consists of the resection under direct vision of a bony triangle at the base of the bony pyramid. To this end, a subperiosteal tunnel about 7-8 mm wide is created on the lateral and medial surface of the nasal bones via vestibular incisions.

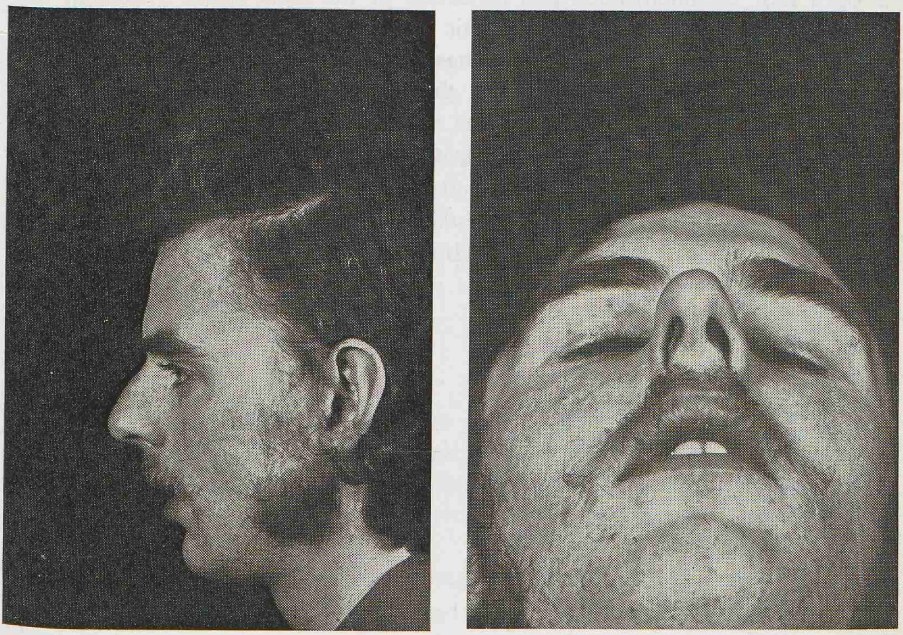

Figure 1 a + b. "Prominent pyramid syndrome": extreme projection of bony and cartilaginous vault, flat alae, slit-like external and internal ostium.

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THE correction of a nasal hump and the reduction of a prominent nasal pyramid is a classic problem in corrective nasal surgery. In some patients this type of surgery is carried out mainly for cosmetic reasons, in other cases it is an essential part of a functional operation.

Excessive growth of the septum and pyramid is a common abnormality in the caucasian race (Figure 1a + b). The prominence of the external nose leads to flat underdeveloped alae and a slit-like external and internal ostium. Breathing problems are often encountered in these patients, because the alae are very easily sucked in during inspiration. If, in addition, there is a small deviation of the septum in the valve area or at the level of the external ostium, a subtotal obstruction will result. Correction of such a condition requires lowering and broadening of the whole external pyramid.

PRESENT METHODS

Hump resection and repositioning of the nasal bones (Joseph, 1931). The oldest method for dealing with a nasal hump is the well-known technique described by Joseph in 1931. In spite of its many disadvantages, this is still the most frequently applied method. The procedure consists of the resection of the bony and cartilaginous hump through an endonasal incision, followed by closure of the open roof by mobilization and infraction of the nasal bones. Although this technique may be effective from a plastic point of view, it is rather destructive, as has often been pointed out: the endonasal mucosa it is cut, the connections between the upper lateral cartilages and the nasal bones are distorted, and the continuity of the upper laterals and the septum is disrupted.

Part of this damage can be restored by using recently developed principles of

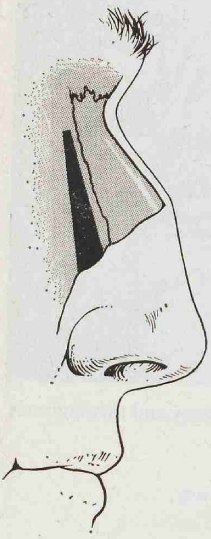

Figure 2. Bilateral resection of wedges from the base of the bony vault for reduction of a prominent humped pyramid.

reconstruction, among which the implantation of crushed cartilage between the dorsum and the skin (Cottle) is in our experience of the utmost importance (Huizing, 1970 and 1974).

Push-down technique (Cottle, 1954).
To avoid the damage inflicted on the nasal dorsum with the Joseph technique, Cottle developed a different method to lower the nasal pyramid, which he called the "push-down technique". With this method the pyramid is pushed down after resection of a septal strip and infraction (or outfraction) of the nasal bones. The procedure is simple and elegant. The amount of reduction that can be obtained in this way is limited, however, as several authors have pointed out. In our experience, the amount of push-down can be increased by creating a submucoperiosteal tunnel at the inside of the nasal bone as well. This considerably facilitates the downward movement of the nasal bones.
Other disadvantages may occasionally be seen as well. Push-down with infraction in a prominent nose may lead to a narrowing of the valve (and external ostium), whereas push-down with outfracture may produce too much broadening of the external nose. Furthermore push-down with infraction may leave a palpable bony "step" on the lateral surface of the bony pyramid.

RESECTION OF WEDGES

Because of the limitations encountered in applying the push-down technique, we sought another method to reduce the external pyramid in patients with excessive projection of the nasal bones.
Since 1972, we have developed for these cases a procedure in which a wedge is resected at the base of the bony vault on both sides (Figure 2).
Searching through the literature we found that the idea of wedge resection is not new. Huffman and Lierle (1954) used this principe in repositioning an extremely deviated bony pyramid.

Technique

The wedge resection is preceded by the usual sequence of procedures, i.e.: septal mobilization and correction through a hemitransfixion; undermining of the dorsum through intercartilaginous incisions and through the hemitransfixion; surgery of the dorsum (as far as unavoidable) and medial osteotomies.

At this stage, the wedge resection is carried out as follows:

1. the wedge to be resected is outlined on the skin with surgical ink;
2. vestibular incisions are made in the usual way (Figure 3);
3. the soft tissues are spread with a Knapp scissors to gain free access to the caudal border of the nasal bones;
4. the periosteum is incised just laterally to the pyriform crest;

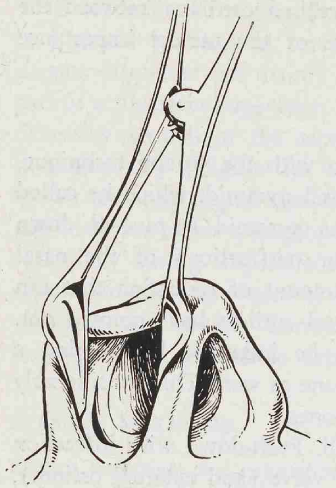

Figure 3. Vestibular incision.

5. a subperiosteal tunnel is made, first on the lateral side and then on the medial side of the nasal bones (Figure 4);
6. a lateral osteotomy is now performed at the upper (ventral) border of the wedge to be resected;
7. a small-bladed speculum of medium length is then introduced and a second osteotomy is made under direct vision at the lower margin of the wedge, after which the wedge is removed (Figures 5 and 6);
8. transverse osteotomies are now performed and the pyramid is lowered.

The surgery is then completed in the usual way.

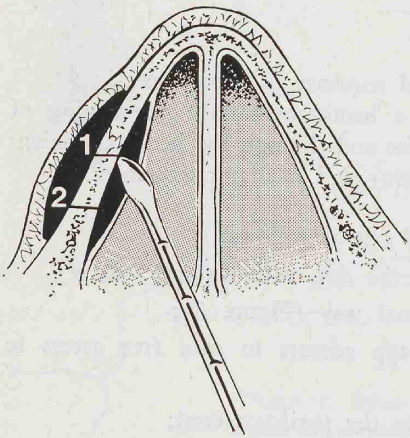

Figure 4. Creation of subperiosteal tunnels on both sides of the nasalia. Two osteotomies are performed: first at the upper (ventral) border (1) then at the lower border (2) of the wedge to be resected.

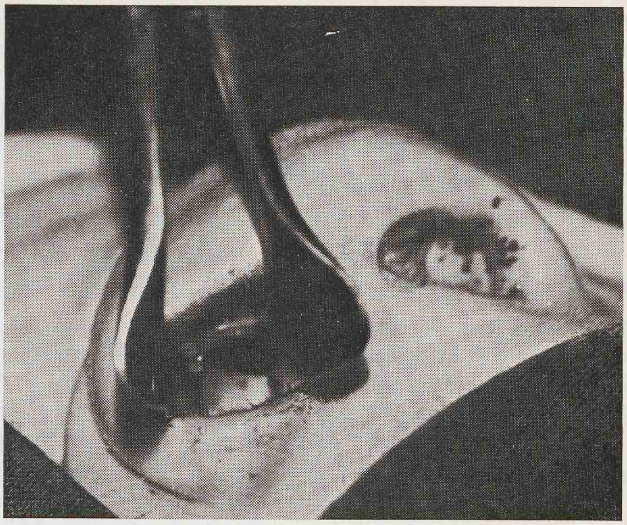

Figure 5. The procedure is carried out under direct vision.

Indications

Indications for the use of the technique of wedge resection described here are found in patients with an excessive prominence of the external pyramid, in other words: in high narrow noses. The method is to be used when the required amount

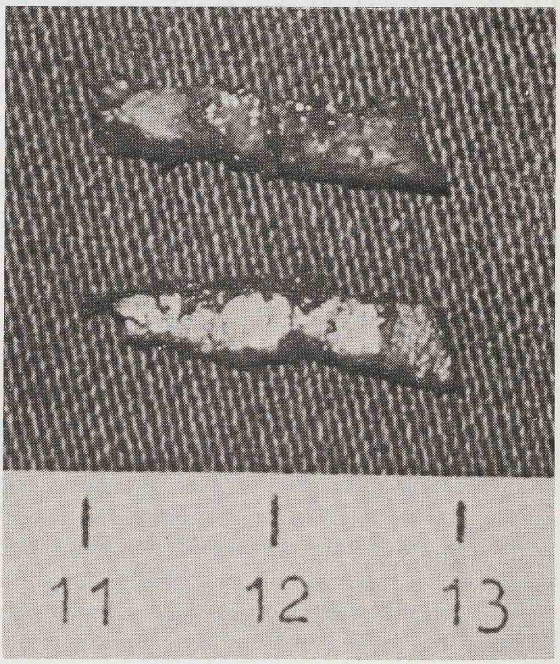

Figure 6. Resected wedges.

of reduction of the pyramid cannot be obtained by means of the push-down infraction technique. It is also the method of choice when a push-down with infraction could result into too much narrowing of the pyramid. The technique is not a method for hump removal. In a patient with a high narrow hump nose, the hump should be dealt with in the classical way, after which the prominence of the pyramid can be reduced by resection of wedges.

RÉSUMÉ

Une technique de résection en coin est utilisée pour réduire les fortes saillies du squelette osseux de la pyramide nasale. Dans ces cas, la technique "push-down" est inadéquate et la résection du dos de l'arête osseuse est trop destructive. La méthode consiste en une résection, sous vision directe, d'une surface triangulaire à la base de la pyramide osseuse. Dans ce but, un tunnel sous-périosté, d'environ 7 à 8 mm de large, est créé sur la fase latérale et médiane des os propres, par l'intermédiaire d'incisions vestibulaires.

ZUSAMMENFASSUNG

Extreme Projektionen schmalen Nasenpyramiden lassen sich durch Keilresektionen verkleinern. In diesen Fällen ist die "Push-down" Technik nicht adequat und die klassische Resektion am Nasenrücken zu eingreifend. Die Methode basiert auf der Resektion von Knochenkeilen an den Basis der Nasenpyramide unter Sicht. Dazu werden das aussere und innere Blatt des Periosts in einer Breite von ca. 7—8 mm bis zur Nasenwürzel getunnelt.

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