Postoperative complications

Manuel A. Wexler, Los Angeles, California

CONSIDERING the enormous number of nasal operations, particularly submucous resections and rhinoplasties, that are performed in this country, the percentage of serious complications fortunately is rather low. However, numerous annoying complications do occur in the immediate post-operative period. These cases in which complications develop after a prolonged period of time, perhaps one or several years post-operatively, are considercd delayed sequelae. It must be stated at this time, that any complications regardless of the degree must be given prompt and complete attention. To the patient there are no minor complications. The following classification is made for convenience only (and there will be overlapping from one group to another).

I. IMMEDIATE COMPLICATIONS

A. *Minor complications*

1. Skin reactions to tape with production of pustules, and occasionally raw skin surfaces of the cheek, nose and forehead.
2. Bleeding: Controlled by local repacking only, or with I.V. or I.M. coagulants such as; adrenosem, vitamin K, premarin, ect.
3. Stitch abscess: Base stitch sutures too close to surface or in floor of nasal cavity.
4. Pressure necrosis of skin: Superficial, due to stent, splint or tape.
5. Hematoma of septum: Requiring simple aspiration or incision and drainage.

B. *Serious complications*

1. Bleeding prolonged and profuse requiring post nasal packing and transfusion: Ligation of ethmoidal arteries.
2. Infection: Septal abscess, including involvement of upper lateral cartilages: blood stream infection; and meningitis.
3. Pressure necrosis: Profound requiring skin graft.
4. Perforation of nasal septum.

Presented at the Introductory Course in Septal Surgery, Everett (Washington), March 18-24, 1973.

II. DELAYED COMPLICATIONS

1. Sagging of cartilaginous vault. May be immediate.
2. Infection: Septal abscess, including involvement of upper lateral cartilages;
3. Ballooning of upper lateral cartilages.
4. Returning of upper lateral cartilages.
5. Retraction of columella.
6. Widening of base of nose with rounding of nostrils.
7. Cicatricial contracture of soft tissues producing:
   (a) pinching of tip of nose
   (b) collapsing of alae
   (c) accentuation of supra-alar and lobular grooves with restriction of airway
   (d) atresia of os internum (entrance in nose)
8. Atrophy of skin.
9. Atrophy of septal mucous membrane.
10. Septal perforation.
11. Drooping of tip.
12. Open roof syndrome.
13. Adhesions - synechiae.

This outline embraces most of the possible complications that may develop following septal and nasal pyramid surgery. Poor or unsatisfactory results either functional or cosmetic may be due to lack of judgement, erroneous diagnosis, inexperience, improper surgical approach or poor tissue healing etc., and are not considered under the catagory of complications.

I. IMMEDIATE COMPLICATIONS

A. MINOR COMPLICATIONS

1. *Bleeding*

   a. Prevention of annoying bleeding can be largely eliminated by proper preparation of the patient preoperatively. This assures tranquility of the patient and tranquility of the tissues being operated upon.

   b. Bleeding may be annoying during the operation, but is usually easily controlled by pressure, temporary packing or the administration of adrenosem, vitamin K, and/or premarin.

   c. Bleeding may occur after removal of the intranasal packing but this normally subsides very readily. However, this too may be avoided in most instances if the packing is carefully inserted, and not allowed to protrude between the intranasal incisions and is not removed too soon.

   d. Packing must come out easily and without excessive pulling. When packing sticks leave it alone! This rule when followed will save the

patient many unnecessary trips to the office for repacking and will allay much fear and apprehension.

2. *Stitch abscess*
There are infections about sutures, particularly those in the floor of the nose, and about base stitch sutures. These usually present themselves from one to three weeks post-operatively and are self limiting. When the pustule develops, the knot of the suture has worked its way to the surface, where it can easily be removed with forceps following which the abscess subsides.

3. *Pressure necrosis:*
When the stent is applied over the tape dressing care must be taken to provide adequate padding and to prevent the bare stent from touching the skin. The forehead is the most vulnerable location. Rough surfaces on the stent must be avoided by proper application of the tape dressing. Instances of "linea surgery to relieve the pressure. Should the stent appear tight, it is best to remove the entire stent and remold it to the nose with additional padding. The stent must also fit the lateral walls of the nose and not press into the skin over the cheek. Necrosis of the columella does occur and this can be avoided by proper application of the tape dressing. Instances of "linea nasalis" scars have been seen when the sling portion of the tip dressing has been applied too tightly. With the ensuing swelling a band of pressure necrosis may develop leaving a permanent scar.

4. *Hematoma of the septum*
Septal hematoma is discovered only when the intranasal packing has been removed. Liquification of the hematoma can be drained either by aspiration or incision and drainage. The patient should be kept on an antibiotic until this has been completely absorbed. Sterile techniques must be observed when treating this condition to prevent infections and subsequent abscess.

B. SERIOUS COMPLICATIONS

1. *Prolonged and profuse hemorrhage*
When profuse hemorrhage is present the patient should be immediately hospitalized and there should be no hesitancy in adequate anterior and post nasal packings being placed. Blood typing and matching is done and blood transfusions administered when indicated. The sphenopalatine or ethmoidal vessels are usually responsible for severe hemorrhage, and if the packing does not control the bleeding adequately, ligation of the vessel by external approach may be required. Transantral ligation of the internal maxillary artery may be necessary if these other measures do not control the bleeding. After packing the nose, external tape dressing is applied, and external pressure maintained to avoid the moving and shifting of the loose lateral walls of the nose. This may occur despite adequate care and a secondary narrowing procedure may be required after healing takes place.

2. *Infection*
   Though serious infections rarely occur, they can and occasionally do develop for various reasons with resultant severe and moderate deformities accompanied often with loss of tissue. Sterile technique and careful handling of tissues still are the most important factors in the prevention of infections. Antibiotics are a great help, but should not be relied upon completely. It is easy to be lulled into a sense of false security, for any break in sterile technique can result in a disastrous infection that may not respond easily to treatment. Should an infection develop however, adequate drainage and heavy doses of antibiotics with the use of steroids and proteolytic enzymes will help control the infection and serious deformity. Metabolic diseases such as diabetes must receive careful attention and must be well controlled medically before surgery is contemplated and in the postoperative period.

3. *Pressure necrosis*
   Skin necrosis can be produced by external pressure from a stent dressing and more often by metal splints. Nasal implants such as large bone grafts may disturb the circulation of the skin over the graft producing ischemia with resultant necrosis of the skin and expulsion of the graft. When the area of necrosis is of sufficient size, skin grafts are required to cover the defect. Pain may be the warning sign that excessive pressure is present. The entire bandage should be removed immediately and the skin examined.

4. *Perforation of nasal septum*
   Dictum: "A few moments of careful dissection may prevent a life time of discomfort". Septal perforations are both embarrassing to the physician and very annoying to the patient. They produce frequent crusting and bleeding and the normal physiology of nasal respiration is altered because the medial wall of the internalos is deficient. The surgical correction of septal perforations will be discussed in detail later.

II. DELAYED COMPLICATIONS

The changes most commonly seen are those described in heading II in the outline above. These are primarily due to unpredictable scar tissue contracture or due to disturbance of the blood supply to the skin or mucous membrane of the septum.

TREATMENT

The prevention of complications begins with adequate history and careful and complete nasal examination. A complete physical examination by an internist may be necessary to assure one that the patient is in good health generally and is a good operative risk. This should be done regardless of age and shortly before surgery is scheduled. Patients are again examined the day before surgery to rule out any recent upper respiratory infection and particularly one that may be present at the time. If there is any question, whatsoever, surgery should be postponed.

The patient is adequately premedicated and otherwise prepared. The surgical procedure is performed as carefully and as thoroughly as is possible within the capabilities of the surgeon. Under these conditions the possibility of a serious complication is markedly reduced.

However under the most ideal conditions complications de occur, and one must be prepared to handle them promptly and completely.

Always keep in mind the P.Q.R.S. and T that Cottle has emphasized:

P. for pain, Q. for querulousness, R. for restlessness, S. for swelling, T. for temperature.

When any of these symptoms appear in the postoperative period it is advised that all dressing be removed and the tissues of the nose examined. This may prevent a minor complication from developing into one of major proportions.

Manuel A. Wexler, M.D.,
6200 Wilshire Boulevard, Suite 1700,
Los Angeles (Cal.) 90048,
U.S.A.