

DRESSINGS AND POSTOPERATIVE CARE

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Treatment of common complications

The first consideration of a nasal dressing is the patient's ability to tolerate wearing it from a psychiatric viewpoint. This may be evaluated by a psychometric examination, but more practically by discussion with the patient about what to expect. Complete covering of the face during mask making is informative for the patient as well as the surgeon. The quality of the skin is next in importance. An attempt to clean up an oily or acneiform condition by diet changes and scrubbing with phisohex should be made.

Known tape allergies will usually tolerate a different type of adhesive. The skin may be insulated from the tapes by coating with collodion prior to its application.

Lacerations should be approximated and coated with neosporin ointment. Tape is then applied directly over the area. Telfa should also be used when the remnants are ragged and thin.

Neoplasia of the skin is preferably handled before or after the surgery, but may be removed at the end of surgery if the lesions are small and the procedure has not been unduly prolonged.

All incisions should be carefully approximated, and an internal dressing of one-half inch folded gauze should be loosely applied in layers. It may be moistened with normal salt solution furacin or cod liver oil. Telfa next to the septum assists in removal.

At first, the tendency to overpack will prevail, with resultant discomfort and broadening of the nose and possible pressure necrosis. Special attention is required in the valve area not to overdo, or an open valve may result. Too little packing results in hematoma.

The skin is cleansed with hydrogen peroxide and then dried. Plain tincture of benzoin is painted over the area to be taped, and when dry the external dressing is applied. The hands should be rinsed with 70% alcohol to remove powder or other foreign material which may be present. One-half inch porous, non-waterproof gauze or paper tape is then applied externally without pressure and taking care to avoid wrinkles. Two strips are applied to the tip and extending vertically to the level of the nasion, with a central crimp over the columella. All pieces are overlapped like shingles and care is taken to cover the skin completely.

A layer of horizontal tapes are then applied from the tip to the nasion. These begin and terminate at the level of the naso-optic groove.

At this point, and at any time that it is needed, pressure is gently applied to the external pyramid with the fingers through a four by four gauze to

express subcutaneous fluids which may be present. At times, a wait of two minutes with pressure is indicated. One may review what was or was not done, and think about the present status and needs of the patient.

Two narrowing tapes are then begun at the level of the internal canthi, and high enough on the nose to emphasize the tip while passing to the opposite cheek. Two additional narrowing tapes are overlapped more laterally and help to maintain fixation of the lobule and subnasale. These tapes must not reach the mandible, as chewing motions will be transmitted to the operative area.

A layer of horizontal tapes is again applied, but they are longer so as to include the ends of the narrowing tapes, the areas of periosteal elevation laterally, the nasion, the central forehead, and below the eyes. Eyelid tapes are then placed with the folded ends of two millimeters nasally for easier removal on the second postoperative day.

An oval dorsal one inch piece is placed over the rhinion as a canopy. An elongated one inch piece is placed over the canopy and extended to the forehead. Lobular rotation may be emphasized with this piece, but usually only maintains the new surgical anatomy.

Two pieces of flannel are placed over the nose with a piece of wax paper one inch square between the layers, which extends onto the forehead. This reduces the danger of tattooing from the stent compound which is then laid over the flannel.

The precut stent is heated through in water at 130° F. and then laid on the nose and forehead where it drapes itself. Ice water compresses are used to harden it and during this time further moulding may be caressed with the fingers.

Suspension tapes from the stent to the forehead diagonally are then secured with horizontal forehead tapes. Two transverse stent-cheek tapes are used below, stopping short of the mandible.

Neosporin ointment is instilled into the eyes, which are covered with eye pads. Foam rubber tied in stockinette is fixed over the eye pads with "Kerlex" (American Hospital Supply) wrapped around it.

The four by four is folded three times and placed as a sling beneath the nose to absorb the mucus and serous drainage which presents here. The sling is changed as needed by the nursing personnel. Ice chips are kept at the bedside and used to keep the lips and mouth moist. Chap sticks may be needed to prevent the lips from drying excessively in some patients. In dry climates a water jet vaporizer at the bedside is very beneficial.

The eye dressings are removed on the first postoperative day and each eyelid is elevated as the patient is reassured that he can see from each eye. The bottom of the stent is lifted about one-eighth inch from the nose with the end remaining in contact with the forehead. If the flannel is hard from secretions it may be replaced, but this is unusual. The sling is replaced.

On the second postoperative day the upper eyelid tapes are removed, pulling from the nose laterally. The stent is again elevated and the patient is reassured that his nose looks good and it is going to breathe good.

This is repeated on the third postoperative day, and when the temperature, pulse, respiration, and eosinophil counts are low the patient is discharged. He is advised to keep his physical activity limited, to drink eight glasses of

water daily, and to report for dressing removal one week from the day of his surgery or sooner in event of difficulty.

On the seventh postoperative day the dressings are removed with detachol or strip-ease, using cotton applicators and pushing the skin away from the tapes. Tunnels are made lateral to the naso-optic grooves and the tape is cut with blunt tipped scissors. After the scissors are introduced into the tunnel they are lifted upward before closing to avoid inadvertently cutting the skin. Gradually the tape is worked downward to the tip and away from the lobule.

The permanent packing is then very slowly and gently removed. Side to side motions may be necessary to tease it free. The head is then tilted forward and a kleenex held beneath the nose. If any blood presents a small piece of cotton is placed in the vestibule. The patient is advised not to blow his nose, but that he may breathe through it if the air passes easily. Excess mucus may be removed with suction.

The skin is cleansed with ether and a limited tip dressing applied. A thin piece of lead may be fashioned to the dorsum and worn for one or two weeks or more. In some patients it is preferable to have them wear the flannel and stent at night only for the next three weeks. The patient is further advised to leave the nose alone as much as possible and to avoid facial expressions when able.

The common complications may be classified as those which occur before, during or after surgery.

Complications before surgery would include patients with scars, no septum, no turbinates, loss of tissue, atrophy, collapsed wide noses, short columella, congenital deformities, allergies, endocrine and systemic disorders. Thus, an incorrect preoperative diagnosis would almost certainly result in a complication unless recognized in time for correction.

During surgery one would first encounter apprehension, hyperventilation, breathlessness, nausea, and vomiting. These are best overcome by having good rapport with the patient before scheduling. In the surgery a short airway and five liters of oxygen per minute orally helps to alleviate the apprehension and hypoxia. One-half or one cc of prinadol (SKF) (1 cc = 2 mgm) intravenously will invariably give the patient tranquility. Due to occasional unfavorable vascular response it is better to avoid substituting innovar unless an M.D. Anesthesiologist is in attendance.

We have been able to avoid cocaine reactions by avoiding solutions. Cocaine flakes on cotton applicators which are just damp with adrenalin will result in maximum local action and minimal systemic absorption.

Bleeding in surgery will be a problem when the patient does not receive his preoperative medications on time, (see pre- and postoperative orders appended) and when there is little preoperative rapport. It is counteracted first, by different levels of anesthesia, and secondly, by intravenous premarin, vitamin C and K, and intramuscular adrenosem. One should place plain one-half inch packing in the nose and hold external pressure while waiting for vasodilatation to cease. Elevation of the head during surgery assists in laking the blood in the extremities. Transfusions should not be needed.

Cardiac arrest may occur at any time, but is prevented by a patent airway and oxygen at five liters per minute. I do not know of this occurring in any

patients done by the technique as taught by the American Rhinologic Society. Tears or perforations of the septal mucosa frequently occur during surgery. These should be repaired immediately, suturing with 4-0 plain gut on small curved needles. This not only aids in limiting the extension of the tear, but prevents migration of septal pieces and gives better healing.

Complications of general anesthesia are distortion of the upper lip and cartilaginous lobule and the connector gets in the surgeon's way. These are overcome by having the connector out of mouth opposite from the anesthesiologist, turning down first and then back across the patient. This neutralizes the pull and frees the operative field for the surgeon's hands.

Patients who are re-operated before one year has passed will be complicated with more bleeding, more reaction, poor surgical judgment, and more angry healing. This is best avoided by waiting one year or more. Postoperatively, the nasal packing may fall into the nasopharynx. This is prevented by not packing too far posteriorly and packing in layers. When it occurs, the excess is cut off with scissors as it presents in the throat. The patient is instructed to tolerate the remnant like a nasogastric tube.

Intraseptal hematoma may be prevented by a small stab incision inferiorly in the elevated flap. The internal dressing also aids in preventing its formation. If the dressing is too tight it may cause pressure necrosis. Commonly, there will be thickening of the septal flap where elevated in young males. I am unable to explain this at this time. Perhaps it can be minimized by suturing plastic splints to the septum in these cases.

Postoperative cerebrospinal rhinorrhea is rarely encountered. It will usually cease with watchful waiting in seven to ten days. When persistent, an intracranial flap should be used.

A floppy or membrane septum will result on removal of the cartilage and bone without reconstruction. It may also result from a septal abscess with resultant dissolution of the hard components.

The common postoperative complications of nasal surgery are, in general, due to faulty techniques or concepts. They are:

1. Depression or saddling of the cartilaginous vault or dorsum.
2. Depression of the nasal tip - droop.
3. Retraction of the columella.
4. Widening of the nose - round nostrils.
5. Septal perforation.
6. Drift of the septum or pyramid.
7. Thickened septum.
8. Atrophy of the nasal mucosa.
9. Anosmia.
10. Localized scar or synechia.
11. Allergy-like symptoms.
12. Polypoid hyperplasia of the mucous membrane.
13. Alar collapse.
14. Pinching.
15. Infection with abscess - stitch abscess.
16. Extrusion of implant.
17. Graft reaction or rejection.
18. Ulceration of skin - pressure necrosis.

19. Atrophy.
20. Open roof.
21. Valve deformity
 - a. Ballooning
 - b. Returning and scar
 - c. Loss of cul de sac
22. Abnormalities of caudal septum not corrected.
23. Deviations of the bony pyramids not corrected.
24. Cellulitis.
25. Restricted airway from infraction.
26. Redundant soft tissue.
27. Stenosis.
28. Hypertrophy of any or all turbinates.
29. Reinjury.
30. Insufficiency of the maxillary ostium.

The primary effects of abnormal anatomic relationship after surgery are:

1. Nasal atrophy
2. Breathing difficulties
 - a. Stuffiness
 - b. Obstruction
 - c. Altered secretions
 - d. Cephalgia
 - e. Ulceration - crusting
 - f. Epistaxis
 - g. Perforation

The secondary effects are:

1. Laryngitis - raw sore throat
2. Bronchitis
3. Pharyngitis - neoplasia
4. Otagia
5. Cough

SUMMARY

Some of the means of minimizing the trauma and complications of surgery are:

1. Gentleness in handling the patient, the tissue, and the dressing.
2. Proper training, as the adequately trained man will work more efficiently, more rapidly, and much less traumatically than the novice.
3. The use of proper instruments needs no comment.

Properly placed incisions avoid mucosal injury where possible, thus preserving the vascular supply and neurogenic network. Limited septal flap elevation should be practiced. Inadequate elevation results in persistent septal deviation. The use of the maxillary-premaxillary approach permits better access to the septal space, especially to the caudal end of the septum. Transeptal fixation sutures assist in maintaining a good anatomical position. Tack sutures to the septal flap assist in maintaining the position in the mid-septum area. Alar incisions minimize the dangers of stenosis.

The use of anti-inflammatory drugs will assist in minimizing many of the tissue's reactions. Dosage and response are individually calibrated. Of great value are ACTH 40 U. Stat, kenalog 2 cc IM the next day, and the prednisolone 5 mgm t.i.d. for 7 days or more. Anabolic agents IM or orally have some value in adults; durabolin 25 to 50 mgm (1 cc) IM weekly in adults is used where a potent tissue building or protein sparing action is desired. For children from 2 to 13 years the average dose is 25 mgm every 2 to 4 weeks. In adults longer acting deca-durabolin may be given 1 cc (50 mgm) IM once every 4 weeks. Winstrol, a brand of stanozolol, is indicated t.i.d. orally in post-traumatic debilitation following fractures. Heparin is anti-inflammatory in doses of 15 mgm daily for months, and produces a clearing factor which tends to reduce the excessive lipids in the blood serum. The anti-chylomicronemic action of heparin is observed after small doses which cause no concomitant anticoagulant effect, but does bring about a shift in the distribution of low-density lipo-proteins of blood. Anti-histaminics (phenergan) 25 mgm b.i.d. x 2 weeks helps to keep a patient from sneezing with its harmful consequences.

Antibiotics can appreciably reduce the hazards and incidence of infection as a complication. I prefer to give penicillin 5 or 10 days, and when sensitive, use tetracyclanes instead. When pus is present incision and drainage are mandatory.

Preserving the keystone area - that area where the nasal bones join the cartilaginous vault - by starting the medial osteotomy several millimeters cephalic to the caudal edge of the nasal bone keeps the whole area intact. The down fracture technique, called the "pushdown" preserves the dorsum while eliminating the hump. Shortening the lobular cartilage while preserving the dome and replacement of tissue, cartilage, and bone within the septal space and along the dorsum will help to prevent or reduce the number of postoperative complications.

Pre- and postoperative orders for nasal septum surgery.

Preoperatively (evening before operation)

1. Phenergan (promethazine hydrochloride) 25 mg. at 9 p.m. (oral)
2. Seconal (sodium secobarbital) 90 mg. at 9 p.m.
3. Nothing by mouth after midnight
4. SMA blood chemistries on all septums and nasal reconstructions.

Morning of operation (local cases only)

1. Veronal (barbital sodium) 600 mg. one hour pre-op. (oral)
2. Phenergan (promethazine hydrochloride) 25 mg. one hour pre-op. (oral)
3. Compazine (prochlorperazine) 10 mg. one-half hour pre-op. (oral)
4. Demerol (meperidine hydrochloride) 50-100 mg. (H) on way to OR
5. Leave all dentures in the mouth when going to OR.
6. Prinadol (phenazocine) 1-2 mg. (I.V.) in OR.

Post operatively

1. Adrenosem amp. 1 IM BID for 4 doses
2. Penicillin 600,000 units IM daily for 4 days (check for allergy)
3. Morphine sulfate gr. 1/6 stat on return from surgery and Q 3 hrs. prn.
4. Phenergan 25 mgm. BID orally
5. Codeine gr ss Q 3 hrs. prn.
6. Ascriptin gr X Q 3 hrs. prn.

7. Diet as tolerated
8. Cepacol mouthwash QID
9. Ice chips prn.
10. Ascorbic acid 250 mgm. tab. TID-order 50 tablets to take home
11. Sparine 25 mgm. IM q 3 h prn for sneezing
12. Tuinal gr iss h.s.
13. Ice caps to each side of neck post-op (or ice collar) for 24 hrs.
14. Chymoral 100 tab. 1 QID (1 hr. A.C. & H.S.)
15. Parenzyme 0.5 cc and wydase 150 U. IM BID x 4 doses
16. BRP
17. Eosinophil count stat post-op. and daily for 3 days on nasal reconstruction cases only
18. Compazine 10 mgm. IM q 3 h prn for nausea
19. ACTH (adrenocorticotrophin) 40 U. IM on return from OR
20. Kenalog (triamcinolone acetonide) 1 cc (IM) one day P.O.
21. Ice bag over forehead (24 hours only)

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