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The Post-Operative Phase of Septal Surgery

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Abstract

Septal surgery necessitates s a tamponade to achieve hemostasis at the cost of the available rigid nasal airway. The unexpected sequele in the post-operative phase of septal surgery need to be kept in mind.

Keywords: Postoperative; Septal surgery; Toxic shock

Review of Literature

Nasal packs achieve hemostasis, stabilize the unstable nasal architecture, prevent septal swelling and hematoma formation. The roller gauze cotton pack has an untoward sequel of severe nasal pain, watering eyes, dryness of mouth, mouth breathing, annoying Toynbee man oeuvre associated with swallowing, foul odour and profuse rhinorrhea [1]. Wallace [2] advocated combining in -dwelling nasal catheters with packing to facilitate normal nasal respiration. This technique was first described by Paulus Arginela in the 7th century. Babington and Donelly [3] inserted a nasopharyngeal airway which to have a smooth recovery after nasal surgery. It maintains nasal respiration, the patient recovers consciousness quietly and there is usually minimal bleed. On the contrary [4] observed no definite advantage from the patient's point of view, by utilizing tubes and nasal packing.

Eustachian tube dysfunction too manifests as a troublesome entity following nasal packing [5]. There is inflammation or stasis of peri tubal lymphatics. Mechanical interference thus is the cause of tubal dysfunction, Tos and Bonding, and if severe may lead go middle ear effusion [7,8]. Tubal dysfunction is due to combination of surgical oedema and a direct effect of nasal packing [9].

Unno et al. [10] and Cassisi et al. [11] demonstrated that besides the local effect of nasal packing there was also a systemic effect. Packing stimulates nose pulmonary reflex which results in reduced pulmonary compliance and increase in pulmonary resistance. These changes in pulmonary mechanics were also postulated by Sessions [12,13]. Jacobs et al. [14] in their study suggested that aspiration, sedation, and degradation of pulmonary function with age are the primary causes of hypoxemia associated with nasal packing. Cook [15] and Mohammed Rashed et al. [16] in their study found that there is a significant increase in the mean values of PCO_2 and HCO_3 and significant decrease in PO_2 after packing the nose.

Nocturnal O_2 desaturation

nasal packing should be removed as early as possible and O_2 therapy provided routinely especially in old and in patients with inadequate pulmonary reserve or with cardiac disease [17]. It increases the frequency and duration of apneic episodes during sleep [18]. when the nose is occluded. O2 desaturation may be so significant in the aetiology if postoperative cardiac arrhythmias and M.I [19]. Buckley et al. [20] found that post-operative nasal packing produced a statistically significant change in O_2 saturation dieting sleep. The change was, however of such a small magnitude that is unlikely to be clinically significant.

Toxic shock syndrome

There have been numerous references in literature of this very serious and sometimes fatal conditions complicating surgeries where intranasal splints and/or packs have been used [21-30]. TSS is a multisystem disorder first reported by Todd et.al in [31]. According to the Centres for Disease Control (1980 & 1981), definition of TSS requires the presence of 6 major criteria. These are

a. Fever >38.9 C with chills

b. Diffuse macular erythroderma and desquamation of palms and soles 1-2 weeks after the onset of illness

c. Hypotension systolic B.P <90mmHg in adults or below fifth percentile by age in children younger than 16 years old, Ortho's ratio drops in diastolic B.P.>15 mmHg from lying to sitting or orthostatic syncope)

d. Mucous membranes involvement (vaginal, oropharyngeal, or conjunctival hyperemia)

e. Involvement of 3 or more of the following organ systems

   i. GIT (vomiting and diarrhoea at the onset of illness)

   ii. Muscular (severe myalgia or creatinine kinase level at least twice the upper limit of normal.

   iii. Renal (serum urea N2 or creatinine levels at least twice the upper limit of normal or urinary sediment with pyuria (>5 WBC per high power field even in the absence of U.T.I).

   iv. Hepatic (total bilirubin, SGOT and/or SGPT levels at least twice the upper limit of normal).

   v. Haematologic (leukocytosis with high proportion of immature neutrophils, platelet count <10/cu mm, hyponatremia, hypocalcemia).

   vi. CNS (disorientation, paraesthesias of hands and feet, alterations in consciousness without focal neurological signs when fever and hypotension are absent.

   vii. Blood, urine, throat, CSF, vaginal vault cultures show negative results as the infection is almost always localized.

Absence of other causes such as streptococcal scarlet fever, drug reactions, rash associated with viral infections, Rocky Mountain spotted fever, leptospirosis, Kawasaki disease and expanded version of scalded skin syndrome.

TSS is caused by exotoxin producing staphylococcus aureus infections 40-44% of healthy persons carry staphylococcus aureus in their nose. Any foreign material may be pack or splint, along with blood, moist nasal environment and layered nasal mechanics can lead to conditions which are favorable for bacterial growth. Bacteria produce toxins. Trauma to the mucous membranes, which occurs following surgery, facilitated entry of toxins into the body leading to TSS. This syndrome is fatal in approximately 10% with most patients succumbing to irreversible respiratory failure, hypoperfusion and disseminated intravascular coagulation. It is, therefore, advised to swab the internal nose with povidone-iodine or similar antibacterial cleansing agent at the beginning of the procedure and coverage with broad- spectrum anti staphylococcal antibiotic 24 hours prior to surgery and for 48 hours postoperatively. Cotton gauze pack is not biocompatible and may lead to foreign body reaction.

Crusting

This is another frequent complication found after nasal packing [32-34] it was found in 10% cases of nasal packing in a study conducted by Fjermedal et al. [35].

Paraffinoma

Paraffinoma as a complication of nasal packing was described by Becker [36].

Synechia Formation

Nasal packs become adherent to the surrounding mucosa and when removed leaves some shreds and raw areas which later result in synechia formation.

Chances of Aspiration of Pack

The most common reasons cutes for post septoplasty nasal packing are bleeding, internal support, increased tissue apposition, decreased Edema, and closure of dead space [1]. Each of these indications for nasal packing can be easily managed in ways that are much less uncomfortable to the patient with pleasing results.

Conclusion

Vis a vis septal surgery, the surgical outcome and satisfaction of the patient depends on three step care, the pre-operative, peri-operative and the post-operative. A long time follow up takes care of other associated factors like allergy to environmental allergens.

References

1. Stucker FJ, Ansel DG, Philladephia (1978) A case against nasal packing. Laryngoscope 88: 1314-1317.

2. Wallace A (1962) Maintenance of post-operative nasal airway. Br J plast Surg 15: 318-319.

3. Babington, Donnelly (1985) Use of nasolaryngeal airway as an aid to easy recovery after nasal surgery. J Laryngol Otol 99: 399.

4. Illum (1992) Nasal packing after septoplasty. Clin Otolaryngol Allied Sci 17(2): 158-162.

5. Mc Curdy MJA (1977) Effects of nasal packing on Eustachian tube function. Arch Otolaryngol 103: 521-523.

6. Bonding P, Tos M (1981) Middle ear pressure during brief pathological conditions of the nose and throat. Acta Otolaryngol 92: 63-69.

7. Khan JA, Campbell JC (1981) Studies on the production of middle ear effusion in experimental animal. J Laryngol Otol 95: 987-993.

8. Wake M, Mc Cullough DE, Binnington JD (1990) Effect of nasogastric tubes on eustachian tube function. J Laryngol Otol 104: 17-19.

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9. Thompson AC, Crowether JA (1991) Effects of nasal packing on Eustachian tube function. J Laryngol Otol 105: 539-540.

10. Unno T, Nelson JR, Ogura JH (1968) Effects of nasal obstruction in pulmonary airway and tissue resistence. Laryngoscope 78: 1119-1139.

11. Cassisi NJ, Biller HF, Ogura JH (1971) The changes in arterial oxygen tension and pulmonary mechanics with the use of posterior Packing in Epistaxis: A Preliminary Report. Laryngoscope 81: 1261-1266.

12. Sessions RB (1973) Nasal haemorrhage. Otolaryngol Clin North Am 6: 727-743.

13. Orgura, Saint Louis (1977) Fundamental understanding of nasal obstruction. Laryngoscope 87: 1225-1232.

14. Jacobs John R, Detroit, Laurence A, Levine, JH Ogura, et al. (1981) Posterior nasal packs and the nasopulmonary reflex. Laryngoscope 91: 279-283.

15. Cook TA, Komorn RN (1973) Statistical analysis of the alteration of blood gases produced by nasal packing. Laryngoscope 83: 1802-1807.

16. Handy MRA, Kodeira KZ, Nasef AH (1983) The effect of nasal packing on arterial blood gases and acid base balance and its clinical importance. J Laryngol Otol 97: 599-604.

17. Slocum CW, Maisel RH, Sanchez B (1973) Arterial blood gase determination in patients with anterior nasal packing. Laryngoscope 86(6): 869-873.

18. Vincenti T, James WW, Nicholas C, Jay BA, Gainesville (1981) The effect of nasal packing on sleep disordered breathing and nocturnal oxygen desaturation. Laryngoscope 91: 1163-1672.

19. Patemen JA, Hanning CD (1989) Post-operative myocardial infarction and episodic hypoxemia. Br J Anaesth 63: 648-649.

20. Buckley JG, Hickey SA, Fitzgerald O Connor (1991) Does the post-operative packing casue nocturnal O2 desaturation? J Laryngol Otol 105: 109-111.

21. Glasgow LA (1980) Staphylococcal infection in the toxic shock syndrome. N Engl J Med 303: 1473-1475.

22. Davis JP, Chesney PJ, Philip JW, laVenture M (1980) Toxic shock syndrome. Epidemiologic features, recurrence, risk factors and prevention. N Engl J Med 303: 1429-1435.

23. RW Tofte, DN Williams (1981) Toxic shock syndrome: Clinical and laboratory features in 15 patients. Ann Intern Med 94(4): 149-156.

24. Thomas S, Baird I, Frazier R (1982) Toxic shock syndrome following submucous resection and rhinoplasty. JAMA 247: 2402.

25. Bergdoll Merlin S, Barbara, RF Reiser, RN Robbins, AC Lee, et al. (1982) An enterotoxin like protein in staphylococcus aureus strains from patients with toxic shock syndrtome. Ann Intern Med 96(6): 1017-1021.

26. FA Kapral (1982) Epidermal toxin production by staphylococcus aureus strains from patients with toxic shock syndrome. Annals of Internal Medicine 96: 972-974.

27. J Toback, JW Fayerman (1983) Toxic shock syndrome following Septorhinoplasty. Implications for the Head and Neck Surgeon. Arch Otolaryngol 109: 627-629.

28. HF Hull, JM Mann, CJ Sands, SH Gregg, PW Kaufman (1983) Toxic shock syndrome related to nasal packing. Arch Otolaryngol 109: 624-626.

29. Barbour SD (1984) Toxic shock syndrome associated with nasal packing: analogy to tampoon associated illness. Pediatrics 73: 163-165.

30. Wagner R, Toback JM (1986) Toxic shock syndrome following septoplasty using plastic septal splints. Laryngoscope 96: 609-610.

31. Todd J, Fishaut M, Kapral F, Welch T (1978) Toxic shock syndrome associated with phase group I staphylococcus. Lancet 1116-1118.

32. M Sloth, L Kolendorf (1976) Late complications after septum surgery. Ugeskrift for laeger.

33. Peacock MR (1981) Submucous resection of the nasal septum: Part I: General survey. J Laryngol Otol 95: 341-356.

34. Dommerby H, Rasmussen OR, Rosberg J (1985) Long term results of septoplasty operations. ORL J Otorhinolaryngol Relat Spec 47: 151-157.

35. Fjermedal O, Saunte C, Pedersen S (1988) Septoplasty and/or submucous resection? 5 years nasal septum operations. J Laryngol Otol 102: 796-798.

36. Becker H (1983) Paraffinoma as a complication of nasal packing. Plast Reconstr Surg 72: 735-736.

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