

Dacryocystorhinostomy, Collagen Sponge and Intubation

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Postoperative bleeding after dacryocystorhinostomy (DCR) is controlled very well using collagen sponge packing intra operatively. Moreover it keeps the anastomosis patent and prevents any adhesions with the nasal septum during the first week after surgery. We compare the results of cotton gauze packing and collagen sponge used in DCR to control postoperative bleeding.

Key words: DCR, silicon intubation, collagen sponge

Post operative bleeding in lacrimal surgery is one of the greatest problems faced by ophthalmologists. Packing of the anastomosis with cotton gauze^{1,2} at the end of DCR is the usual method of controlling postoperative bleeding. Collagen sponge^{3,4} (Gelfix, Euroresearch s.r.l. Milano, Italy) is useful material to control postoperative bleeding as compared to cotton gauze. We compare the results of these two packing materials.

Materials & Methods

Sixty patients who underwent DCR at the Institute of Ophthalmology from 1999 to 2001 were reviewed. Patients were divided into two groups of 30 patients each. Group A patients underwent external DCR, silicone tube intubation⁵ and packing with collagen sponge while Group B patients underwent external DCR silicone intubation and gauze packing. DCR was done in the usual fashion with excision of the posterior lacrimal flap and suturing of only the anterior lacrimal flaps with 6/0 vicryl.

Group A patients had packing of the anastomosis with collagen sponge before closure of the anterior lacrimal flaps. Collagen sponge (Fig. 1) was cut in a 15 x 30 mm rectangular piece and dipped in normal saline to remove any air bubbles before being placed in the anastomosis. The sponge was forced against the raw edges of the mucosa to maintain the patency of the ostium. The silicone tubes were tied to each other just inside the external nares at the end of the procedure.

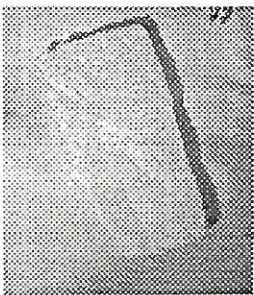


Fig 1 Collagen sponge

In Group B patients anterior flaps were sutured directly and the anastomosis was later packed with cotton gauze soaked in 2% lignocaine with 1:100,000 adrenaline via the external nares. The ends of the tubes were tied to each

other just internal to the external nares with 4/0 black silk and the remaining length of the tube was fixed to the cheek with adhesive tape. The nasal packing was removed after 12 hours and the tubes were trimmed to lie just inside the nose.

Bleeding was compared immediately after surgery and on the first postoperative day in both groups. All patients received 1st generation cephalosporins for 5 days to prevent post operative infection. Moreover the silicone tubes were removed via the nose in all cases 3 months after the operation.

Results

All patients in group A had minimal to no bleeding immediately and on the first postoperative day. All patients in group B had minimal to no bleeding immediately after the operation. But on removal of the nasal packing 2 patients had moderate bleeding requiring repacking for another 12 hours, 15 patients had mild bleeding which settled spontaneously and 13 patients had minimal to no bleeding on removal of the packing (Table 1). No patient had significant loss of blood to cause hypovolemia.. Two patients had failure of DCR with one patient in each group. The Group A patient had closure of the fistula due to excessive scarring. She also had hypertrophic scarring of the skin. The Group B patient had adhesion between the nasal septum and the anastomosis

Table 1. Comparison of postop bleeding.

Material	Immediate Minimal	12 hours postop bleed		
		Min	Mild	Mod
Sponge	30	30		
Gauze	30	13	15	2

All patients in group A had mild to minimal discomfort in the nose postoperatively compared to moderate discomfort in group B patients. There was no postoperative infection in all the cases.

Discussion

Postoperative nasal bleeding in DCR tends to occur most commonly from the highly vascular nasal mucosa. Packing of the anastomosis at the end of DCR is done to prevent postoperative bleeding and to prevent the formation of adhesions between the lacrimal sac and nasal

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mucosa. Different techniques have been described to pack the anastomosis. We compare the results of the two most commonly used methods.

Collagen sponge is a sterile, pliable, nonantigenic surgical sponge prepared from a specially treated purified gelatin solution. It is capable of absorbing and holding within its meshes many times its weight in whole blood and augments clotting. After being applied to the raw surfaces of the nasal mucosa, it completely liquefies within two to five days. The advantage of Collagen sponge is that it does not need to be removed stays in place for 2-5 days and reduces the immediate and late risk of bleeding. Moreover it prevents adhesion formation between the anastomosis and nasal septum and does not compromise the success rate of the procedure.

Gauze packing provides good hemostasis immediately postoperatively but removal of the packing next day is accompanied by variable amount of bleeding and discomfort. This can be very dangerous in old patients with systemic hypertension and arteriosclerosis. Moreover repacking of the nose is a very uncomfortable procedure.

Since the gauze packing is removed after the first day it does not prevent the formation of adhesions between the anastomosis and the nasal septum.

We recommend the use of collagen sponge during DCR, as it is a reliable material to reduce the risk of postoperative bleeding. Moreover it is much more comfortable for the patient compared to gauze packing.

References

1. Callahan MA, Callahan A: Ophthalmic Plastic and Orbital Surgery. Birmingham, Aesculapitus, 1979, p. 116.
2. Jones IT, Wobig JL: Surgery of the Eyelids and Lacrimal System. Birmingham, Aesculapitus, 1976, p. 206.
3. Leone CR. Gelfoam Thrombin Dacryocystorhinostomy stent. Am Journal of Ophthalmol. 1982;94:413-414.
4. Nesi FA, Lisman RD, Levine MR. Ophthalmic Plastic and reconstructive surgery 2nd edition. Mosby Year book Inc. St. Louis 1998. P.669.
5. Rosen N, Sharir M, Moverman DC, Rosner M. Dacryocystorhinostomy with silicone tubes: evaluation of 253 cases. Ophth Surg 1989;20(2): 115-9