

# Repeat DCR with silicon intubation tube

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## Abstract

**Purpose:** To assess the efficacy of silicon tube intubation in repeat dacryocystorhinostomy procedure. **Method:** A prospective study in which 30 patients presenting with symptoms of watering or mucoid discharge 3 months after a primary DCR surgery were included in the study. Repeat DCR procedure was done in all patients with intraoperative use of silicon tube. **Result:** After a mean follow up period of 12 months, 27 (90%) of the patients were symptoms free i.e. watering and discharge. **Conclusion:** Repeat external DCR is challenging procedure. Repeat external DCR with silicon tube intubation is safe and effective surgery giving comparable outcome as we get in primary DCR. **Key Word:** dacryocystorhinostomy, silicon tube intubation.

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silicon intubation technique in patients who have undergone DCR as primary procedure.

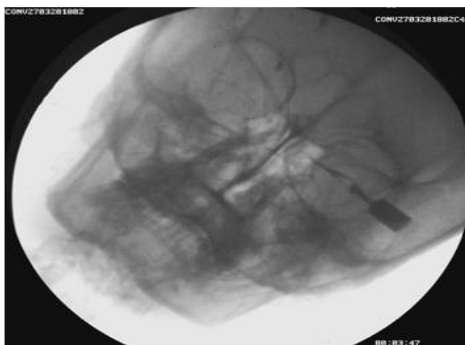
## MATERIALS AND METHODS

Thirty patients were selected for repeat DCR surgery because of constant complaint of watering and mucoid discharge following previous DCR surgery from march 2016 to april 2017 in tertiary eye care center. The previous DCR surgery was done 3 months to 2 years before. Complicated cases of DCR that were complicated intraoperative course were excluded from the study. A lacrimal sac syringing was done in all patients to know the level of obstruction, at the common canaliculus or at the rhinostomy site. Before surgery a dacryocystogram was done using 300 mg l/ml iohexol dye in all patients, which revealed the site of blockage and helped us during the revision surgical procedure. Preoperative RBS, CT, BT, HIV, HBSAG, ECG and physician fitness done in every patient. Detail informed consent was taken explaining the prognosis and nature of procedure. The operation was classified as successful by absence of epiphora or discharge, patent NLD irrigation test and the patient to be symptom free 6 months after removal of silicon tube. Failure was defined as symptom of epiphora or discharge and obstruction for NLD irrigation. Patients were followed for a period of 12 to 18 months post operatively. Weekly for first month, biweekly for next one month and monthly there after. During surgical procedure MPL was identified and cut if found intact to get good exposure of the operative area and fundus of the

## INTRODUCTION

Patients with residual tearing after DCR can be quite challenging with regard to diagnosing the cause of surgical failure and determining appropriate management. For external DCR, the failure rate has been reported to be 5% to 10% or less.<sup>1,2</sup> The most common causes for DCR failure is occlusion of rhinostomy site by soft tissue, common cannicular obstruction, cicatritial ostium closure or granuloma formation at the ostium.<sup>3,4</sup> A dacryocystogram (DCG) is often helpful in the evaluation of DCR failures. This contrast roentgenogram localizes the obstruction and possibly reveals other pathology such as dacroliths or ectasia of lacrimal sac.<sup>5</sup> Silicon intubation is indicated in the treatment of congenital and acquired NLD obstruction. This procedure is particularly useful in revision DCR and enhance the success rate.<sup>6,7,8</sup> We carried out a prospective study to evaluate the efficacy of

sac. Blunt dissection was done to avoid excessive bleeding and damage to adjacent structures. Probe was passed to assess the opening of the common canaliculus and any fibrosis present around it. Scar tissue was cut which was appearing whitish fibrous. Tried to preserve tissue around sac area so as to fashion it into anterior lacrimal flap. Bony ostium identified, if found small it was enlarged to 1X1 cm size. Scar tissue around the bony ostium excised. Position of ostium was also noted and corrected accordingly. Lens spatula passed through the nose for assessing any remnant of nasal mucosal flaps if present then fashioned it into flap. Silicon intubation tube passed from both upper and lower punctum and brought out of the nose and sutured. Most of the time it is not possible to make flaps and suture them. Silicon tube was removed after 6 months. All patients were followed up for a period of 12 to 18 months. Follow up included any symptoms of watering and discharge, wound, position of tube.



**Figure 1:** Dacryocystography showing the common canalicular obstruction

## OBSERVATIONS AND RESULTS

The patients were in the age group of 30 years to 62 years. The mean age was 31.3 years. There were 12 male patients and 18 female patients in our study group. Out of 30 patients, 10 had involvement on right side and 20 had involvement on left side. On dacryocystography in 17 patients dye could not be injected through punctum indicating that obstruction is at the level of common canaliculus. Whereas in 13 patients dye could be seen beyond common canaliculus indicating that obstruction is at the level of bony ostium. In one case intact sac was found on dacryocystography which was confirmed during repeat surgery. In our study group 27(90%) eyes who were underwent repeat DCR surgery with silicon tube intubation were symptom free and patent on NLD irrigation hence classified as success. 3(10%) eyes have symptoms of watering and hence classified as failure. 2 patients have complete block on NLD irrigation where as one patient was patent on NLD irrigation with resistance. Intraoperative complications were infrequent, mild to

moderate hemorrhage from punctum during silicon tube intubation seen in one patient. In one patient there was splitting of the upper punctum during silicon tube. Mild to moderate nasal hemorrhage in nine patients that were controlled with nasal packing.

## DISCUSSION

Failed DCR is a known complication of DCR with complaints of persistent epiphora and it is always a challenge for repeat procedure. Main risk of failure being alteration of normal anatomy and inadequate tissue available for anastomosis. The most common causes for DCR failure is occlusion of rhinostomy site by soft tissue, common canalicular obstruction, cicatricial ostium closure or granuloma formation at the ostium. Hence it is very difficult to ensure nasolacrimal stenosis and prevent closure of internal ostium.<sup>3,4</sup> Dacryosystorhinostomy with silicon tube intubation is done in failed cases to ensure anatomical success of the procedure and prevent the closure of the ostium.<sup>9</sup> We believe that a silicon tube only acts in a way, as a guide for the canalicular epithelium to progress further when there is its discontinuity, without adhering to other tissues. Moreover it ensures patency during healing process. Mc Pherson and Eggleston<sup>10</sup> noted that 3 out of 7 patients in their study who underwent a second operation were found to have a dense scar tissue at the osteotomy site. In our study however 21 out of 30 patients found to have a dense fibrous scar at the osteotomy site. As chronic dacryocystitis is common in females, we also got the more number of females for repeat DCR.<sup>11</sup> Left side was involved more commonly as compared to right. Other studies shows the similar results.<sup>11</sup> In our study the total success rate was 90%. Failure rate was 10%. This is very much comparable to other studies which also gives similar results. A lone *et al.*, (2004) were included forty patients of failed DCR and concluded DCR with silicon tube intubation has been accepted as a highly successful procedure with a success rate of 95% in patients with failed DCR. Dr Ann in his study concluded that external DCR with silicon intubation is safe and effective surgery in patients whom we expect less favorable outcome. Shagufta Rather, Tejit Singh were included 200 patients in their study and concluded that use of silicon tube intubation in primary DCR leads to high success rate. Complications associated with silicon tube intubation were very less. Bleeding from the punctum due to mild splitting was seen in one patient, and the results are comparable to other studies.<sup>12</sup>

## CONCLUSIONS

Repeat external DCR is challenging procedure. Repeat external DCR with silicon tube intubation is safe and effective surgery giving comparable outcome as we get in

primacy DCR. The complications associated with silicon tube intubation are negligible.

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