Letter to the Editor

Early versus standard timing for silicone stent removal following external dacryocystorhinostomy under local anaesthesia

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Dear Editor,

It is with great interest that we read the article "Comparison of early versus standard timing for silicone stent removal following external dacryocystorhinostomy under local anaesthesia" (Limbu B et al, 2019) in the 21st issue of the Nepalese Journal of Ophthalmology. The authors compared the postoperative outcomes following removal of silicone stent at 2 weeks and 6 weeks in external dacryocystorhinostomy (DCR) and found no significant difference in surgical outcomes or complication rates at 3 months.

Background

Since the description of external DCR by Addeo Toti in 1904 (Toti A, 1904), DCR surgery has advanced by leaps and bounds. However, external DCR still remains the gold standard technique for acquired nasolacrimal duct obstruction (NLDO). Stent placement in DCR was first described by Older in 1982 (Older JJ, 1982). Silicone stent aids in maintaining the patency of the newly created drainage system by acting as a stent to prevent narrowing of the nasolacrimal drainage system and facilitating the passage of the tears along the walls of the stent by capillary mechanism. Lacrimal intubation has traditionally been advocated in cases where there are increased chances of fibrosis and subsequent failure of the surgery. Indications for lacrimal intubation during external DCR may be preoperative or intraoperative. Preoperative factors include young age, repeat DCR surgery, traumatic NLDO, distal canalicular and common canalicular obstruction. Intraoperative factors include excessive bleeding during surgery, inability to create mucosal anastosmosis, inadequate or improper mucosal anastosmosis, thin or atrophic lacrimal flaps likely to dehiscence, etc. Punctal cheese wiring due to tight intubation, spaghetti sign with corneal erosion by silicone tube due to loose intubation and foreign body reaction to the silicone material are the main complications of lacrimal silicone tube intubation.

Comments

The authors attempt to provide evidences on the timing of stent removal in primary external DCR. Firstly, we note that the cases included in this study have been routinely intubated for primary DCR. There is a debate on whether lacrimal intubation is really needed in cases of primary DCR. A meta-analysis conducted by Feng et al in 2011 which included 5 randomised controlled trials and 4 cohort studies found no benefit for lacrimal intubation in primary DCR (Feng et al 2011). Saiju et al in a prospective

Financial Interest: nil
Conflict of Interest: nil
Received: 02.06.2019 Accepted: 16.06.2019

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interventional study not only found similar outcomes with or without silicone intubation, but also concluded that silicone intubation is not necessary for primary DCR and in fact may create an economic burden for the patients (Saiju R et al 2009). However, a recent trial sequential analysis of randomized control trials by Xie CQ et al revealed significantly better success rate with silicone intubation in external DCR group (Xie CQ et al 2017).

The study by Limbu et al (Limbu et al, 2019) had two groups with a mean age difference of 7.9 years. Though the difference was not statistically significant, younger age as seen in the early (2 weeks) stent removal group may be a potential confounding factor, as younger patients have higher rates of fibrosis and hence lower success outcome. Herdol H et al in 2005 in a long-term study comparing success of DCR with multiple variables found age of the patient to be a statistically significant factor for surgical prognosis (Erdol H et al 2005).

The authors have mentioned the postoperative complications and stated that the complications resolved prior to the stent removal in both groups, thus nullifying any chances of affecting the study outcomes. However, the authors made no mention of any intraoperative complications. As stated earlier, excessive hemorrhage during surgery and absent, inadequate or weak lacrimal mucosal flaps with chances of dehiscence due to chronic dacryocystitis may benefit from longer duration of stent placement.

Regarding the timing of removal of the silicone stent after DCR, silicone stent was removed in 2 weeks in the early stent removal group in the study. Periorbital ecchymoses is a common complication after external DCR which usually resolves by 2 weeks but may take up to 3 weeks to resolve. Timing of stent removal may be crucial in cases with persistent periorbital hematoma. Vicinanzo et al found no significant difference in the final surgical outcomes in 42 cases of premature silicone stent loss compared to the planned removal at 2 months (Vicinanzo et al 2008). A study investigating the outcome of silicone tube removal at different time frames after external DCR (early- before 2 months, routine- 2 to 4 months and late- after 4months) suggested that the timing of stent removal does not influence the surgical outcomes (Charalampidou S et al, 2009).

For a larger study, we also suggest subdividing the outcomes of success into complete success (patent system on irrigation (objective) and absence of symptoms (subjective)) or partial success (patent system on irrigation with minimal postoperative symptoms) as used by various authors in the literature. We believe this will further strengthen the analysis of the outcome of the study.

In conclusion, this is a good study which aims to provide a basis for a larger study that may help to fill in the gaps in literature regarding the timing of stent removal after an external DCR surgery. This in turn will help the patients significantly by reducing the burden associated with the stay at the hospital or vicinity and the follow-ups. We are eagerly waiting for the results of the final study and hope the study will be able to provide DCR surgeons with another option of stent removal at 2 weeks. An extension of this pilot study into an appropriately powered large sampled randomized control trial could become a landmark study in oculoplasty and we wish Limbu et. al. a huge success with the study.

References

Charalampidou, S. and Fulcher, T (2009). Does the timing of silicone tube removal following external dacryocystorhinostomy affect patients' symptoms?. Orbit; 28(2-3):115-119.

Erdöl, H., Akyol, N., İmamoglu, H.İ. and Sözen, E., (2005). Long-term follow-up of

external dacryocystorhinostomy and the factors affecting its success. Orbit; 24(2): 99-102.

Feng, Y.F., Cai, J.Q., Zhang, J.Y. and Han, X.H., (2011). A meta-analysis of primary dacryocystorhinostomy with and without silicone intubation. Canadian journal of ophthalmology; 46(6):521-527.

Limbu B et al. Comparison of early versus standard timing for silicone stent removal following external dacryocystorhinostomy under local anaesthesia. Nepal J Ophthalmol 2019; Vol 11 (21): 24-28.

Older J J (1982). Routine use of silicone stent in a dacryocystorhinostomy. Ophthalmic Surg;13:911.

Saiju, R., Morse, L.J., Weinberg, D., Shrestha, M.K. and Ruit, S., (2009). Prospective randomised comparison of external dacryocystorhinostomy with and without silicone intubation. British journal of ophthalmology; 93(9):1220-1222.

Toti, A., (1904). Nuovo metodo conservatore di cura radicale delle suporazioni croniche del sacco lacrimale (dacriocistorinostomia). Clin Mod Firenze;10: 385–389.

Vicinanzo, M.G., McGwin, G., Boyle, M. and Long, J.A., (2008). The consequence of premature silicone stent loss after external dacryocystorhinostomy. Ophthalmology; 115(7):1241-1244.

Xie, C., Zhang, L., Liu, Y., Ma, H. and Li, S., (2017). Comparing the success rate of dacryocystorhinostomy with and without silicone intubation: a trial sequential analysis of randomized control trials. Scientific reports; 7(1):1936.