

# Silicone Intubation Does not Improve the Success of Dacryocystorhinostomy in Primary Acquired Nasolacrimal Duct Obstruction

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The role of silicone intubation in routine dacryocystorhinostomy (DCR) surgery remains unclear. Recent studies provide a higher level of evidence against intubation in DCR. Intubation of the nasolacrimal duct with silicone tubes has largely arisen as a result of history, anecdote and the evolution of DCR surgery rather than being based upon sound evidence.

Silicone intubation has gained popularity since Gibbs in 1967 described a technique of inserting a silicone rubber tube when performing DCR.<sup>1</sup> The proposed philosophies of this practice were that primarily, it was a safe DCR procedure and secondly it could prevent postoperative obstructions by securing an open pathway during the healing process. On the other hand, in uncertain or complicated DCR surgeries, this technique could ensure a successful outcome. With the passage of time, this practice became accepted as a fact.

Several reports have proposed that in the majority of cases, intubation is not critical for a successful DCR. Some studies on the other hand, have even reported that silicone intubation is associated with a significant increase in the failure rate of primary DCR presumably due to granuloma formation in the nose and at the lacrimal ostium alongside the tube. Other reported complications associated with lacrimal silicone stents include slitting of the puncta, nasal irritation, corneal abrasions, ocular surface irritation, nasal bleeding and stent extrusion. Furthermore, silicone intubation increases surgical time and adds to the cost of the procedure.

In 1989, Allen and Berlin disclosed a statistically significant rise in the failure rate of primary DCR with versus without silicone

intubation of the nasolacrimal system in 242 consecutive DCR surgeries (14.5% versus 5.0%, respectively).<sup>2</sup> Later in 1994, Walland and Rose reviewed 388 DCR cases and found no significant difference in failure rates for primary or repeated surgeries among subjects with and without silicone intubation.<sup>3</sup>

Recently, a randomized clinical trial on the outcomes of external DCR with and without silastic intubation in 100 patients with uncomplicated primary nasolacrimal duct obstruction (NLDO) showed that the six-month subjective and anatomic success rates were not significantly different between the intubated and non-intubated groups (90% versus 87% respectively).<sup>4</sup> This study also revealed a 20% increase in cost in the silastic intubation group. Smirnov and associates in their study on the success rate of endonasal endoscopic DCR surgery found that all non-intubated subjects were relieved from symptoms and acquired anatomical patency whereas only 78% of intubated patients enjoyed such an outcome.

There are few reports describing a beneficial effect from silicone intubation on the success of DCR surgery in recent years. Pandya et al, in a retrospective study, reviewed 338 external DCR surgeries and found that silicone intubation for longer than 6 months increased the success rate of the procedure.<sup>7</sup>

A recent meta-analysis of 5 randomized clinical trials and 4 cohort studies, revealed no significant difference between the success rates of external or endoscopic DCR surgery with versus without silicone intubation.<sup>8</sup>

Based on current evidence, it seems that silicone intubation is not associated with increased functional and anatomical success rates

in DCR surgery for patients with uncomplicated primary NLDO without common canalicular stenosis. In addition, this practice increases costs and postoperative visits and may entail additional morbidity.

### Conflicts of Interest

None.

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