

An update to monocanalicular stent surgery

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Dear Sir,

In their article, "A comparison between monocanalicular and pushed monocanalicular silicone intubation in the treatment of congenital nasolacrimal duct obstruction", Andalib *et al*^[1] present the results of a prospective study on congenital nasolacrimal duct obstruction treated either with a Monoka stent (using a Crawford hook for nasal retrieval) or a Masterka pushed technique for insertion of the Masterka stent. The success rates were respectively 90% and 50%. In this publication the authors did not document the severity of ductal stenosis and treated patients with either the Monoka or Masterka. It should be stressed, however, that Masterka stent is not designed to be effective in cases of moderate to severe ductal stenosis. Thus, the poorer results for the 20 cases of Masterka may be attributed either to a Masterka that remained nestled inside the lacrimal sac, because it could not be pushed beyond the area of ductal stenosis, or due to an insufficient time of stent retention as demonstrated by an early Masterka stent loss rate of 30%.

We would like to present our perspective regarding the relationship between failure with a Masterka stent retained for the usual planned postop period of time and the rate seen with early loss of the Masterka stent.

Since our first case in 2008, the analysis of complications had

led to our recommending the following precautions: 1) we prefer to place the Masterka in the upper canaliculus as it is more difficult for the child to scratch the superior punctum than the inferior punctum. We try to avoid stenting the lower canaliculus, since the lower eyelid punctum is usually more lateral and the collarette of the stent can thus come into contact with the cornea more easily; 2) for cases of ductal stricturotomy (congenital or iatrogenic), it would appear preferable to switch canaliculus or choose another method of intubation. With dilation of the punctum, it is important to protect the integrity of the meotic ring at the punctal opening to reduce the potential for extrusion of either type of stent; 3) our initial surgical technique^[2-5] has been changed: currently, our recommendation is that, the length of the Masterka should always be greater than the distance between the superior punctum and the floor of the nasal fossa in order to eliminate the risk of the probe being too short. When the guide reaches the floor, the plug portion should be a few millimeters above the punctum. As the guide is removed, the plug must then be held flush to the punctum causing the distal portion of the stent to bend on the floor much like seen with a pulled Monoka stent. After intubating with the Masterka, the collarette must be apposed to the punctum while removing the introducer rod. If not, the stent will likely not remain bent along the nasal floor and if the surgeon attempts to push the stent in further it will simply fold within the nasolacrimal system. In this scenario there is an upward force that will make stent loss more likely due to the tendency for the stent to straighten and thus unseat the collarette. This is not the case if the stent is long enough and has bent to sit along the nasal floor (as in the case with the Monoka stent). A video of this technique can be found on YouTube^[6].

Table 1 lists our unpublished data of 71 cases using this modified technique for the Masterka in comparison to other published data comparing the pushed and pulled monocanalicular stent. The loss of stent rate is only 4% (down from 11.8%).

Andalib *et al*^[1] are correct that there is a paucity of publications with the Masterka. Alañón *et al*^[7] reported a 97.5% in 40 patients treated for congenital nasolacrimal duct obstruction (CNLDO) with the Masterka. In addition, there have been posters and presentations at international meetings comparing the Masterka and Monoka. Katowitz *et al*^[8]

Table 1 A comparison of our unpublished data with previous studies of the monocanalicular stent

Authors	Stent	Year	Intubations	Complications			Lacrimal duct findings	Success
				Stent lost in canalculus	Stent unseated from punctum	Stent loss		
Fayet <i>et al</i> ^[5]	Monoka	2010	1028	0.005	0.007	12.5%	N/A	90.6%
Fayet <i>et al</i> ^[2]	Masterka	2012	110	0	0.036	12%	Hasner membrane only	85%
Current study	Masterka	2015	71	0.014	0.028	4%	Hasner membran only	90%

compared the success rates of the Monoka 86.8% (125/144) to the Masterka 88.3% (53/60). Nazemzadeh reported a success rate of 81.6% (62/76 eyes) for the Masterka when used in all cases of CNLDO except severe ductal stenosis^[5,9]. That the overall success rate for Andailb *et al*^[1] was significantly lower compared to these other reports brings to light the challenge for proper patient selection and choice of surgical technique when using the Masterka.

We think our modified technique for inserting the Masterka offers improved surgical outcomes and should be employed when using this pushed monocanalicular device.

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