

# Novel Incisionless, Reproducible and Time-efficient CDCR Technique

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**Introduction:** We present a technique for Conjunctivodacryocystorhinostomy (CDCR) that is novel in its simplicity, reproducibility and time requirement.

**Methods:** CDCRs were performed with the use of a size 9F Percutaneous Lead Introducer (Medtronic, Minneapolis, MN) (figure 1A) and Naugle Knurled Dilator (Stephens Instruments, Lexington, KY) (figure 1B). This sharp-pointed dilator is passed through the inferior junction of the caruncle and conjunctiva in an inferoposterior vector through the lacrimal fossa and bone into the middle meatus of the lateral nasal wall (figure 2). The dilator is then withdrawn and the introducer needle is passed into this tract. The percutaneous guidewire is passed via the needle bore into the nose and externalized. The needle is withdrawn, and the tip of the catheter is threaded over the guidewire. The intranasal position is confirmed by a speculum or an endoscope (figure 3A). A selective partial middle turbinectomy is performed when intranasal obstruction of the tube pathway is observed. The catheter tip is withdrawn and used to measure the desired Jones' tube length. The catheter tip is reintroduced, followed by the Jones tube and the remainder of the catheter (figure 3B).

Seventeen patients underwent this CDCR technique with an average operative time of 16 minutes (range 9-35 minutes). Fourteen patients (82.3%) reporting decrease in tearing and associated symptoms with one patient (5.8%) requiring revision of Jones tube placement. At the time of submission, no patients experienced tube migration postoperatively. Average postoperative follow up time was 6.9 months (range 0.4-22 months) with one patient being lost to follow up.

figure 3B). Using gentle traction, these items are advanced as a unit positioning the Jones tube. The catheter ends and the guidewire are explanted while reinforcing the position of the Jones tube. The Jones tube is sutured into place with a prepositioned 5-0 nylon. All procedures were performed under local infiltration of 2% Lidocaine with Epinephrine and monitored anesthesia care along with 0.05% Oxymetazone nasal spray and preoperative placement of intranasal patties.

**Results:** Fifteen patients (two undergoing bilateral treatment) underwent this technique with an average operative time of 16 minutes per CDCR (range 9-35 minutes). Fourteen patients (93%) reporting decrease in tearing and associated

symptoms with one patient (6%) requiring revision of Jones tube placement. At the time of submission, no patients experienced tube migration postoperatively. Average postoperative follow up time was 6.9 months (range 0.5-22 months) with one patient being lost to follow up.

**Conclusions:** This novel CDCR protocol is easily reproducible and provides an efficient and effective method of Jones tube placement while using a single tract. Continued follow up will allow for long-term confirmation of a low rate of tube malposition and migration. Most importantly, this procedure requires minimal anesthesia, tissue manipulation and morbidity.

*Figure 1*

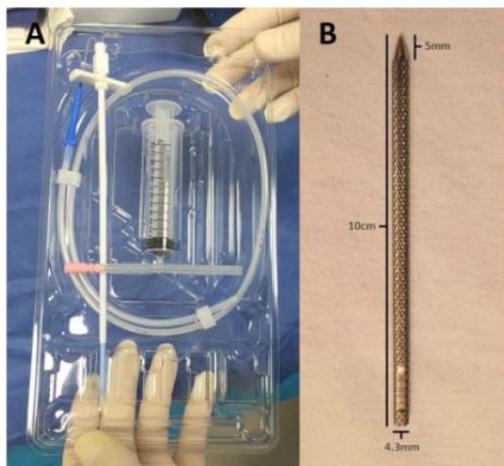


Figure 1: A) 9F Percutaneous Lead Introducer (Medtronic, Minneapolis, MN)  
B) Naugle Knurled Dilator (Stephen's Instruments, Lexington, KY)

*Figure 2*



Figure 2: Dilator positioned to penetrate lacrimal fossa at desired 45 degree angle

*Figure 3*

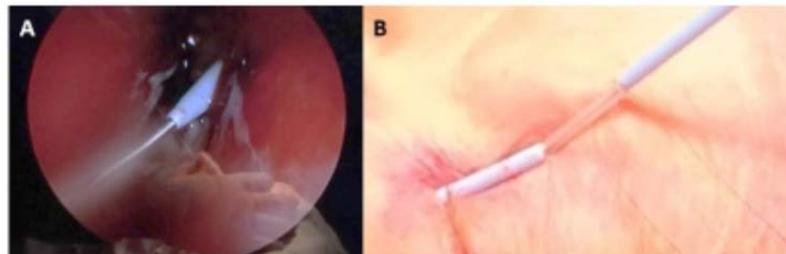


Figure 3: A) Endoscopic view of the catheter introducer tip exiting into middle meatus overlying the guidewire  
B) Jones tube straddled by proximal and distal portions of catheter introducer prior to tube placement.

#### References:

1. Naugle, TC. Conjunctivodacryocystorhinostomy and Other Lacrimal Bypass Procedures In Oculoplastic, Orbital, and Reconstructive Surgery, ed.A. Hornblass., Williams and Wilkens, 1988;2(143):1441-1468.
2. Naugle, TC. Naugle Modification of the Jones Tube In Ocular Surgery News, January.2004;22(2).