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**Background:** Stenosis of the airway is a devastating disease, which is challenging for doctors to treat. The endoluminal application of Mitomycin C (MMC) shows promise as a nonsurgical approach to treating recalcitrant stricture. However, complications such as acute airway obstruction may still occur due to delayed wound healing and necrosis of mucosa. In this report, we describe a novel technique that uses an irrigating catheter to endoluminally deliver MMC to the target tissue while minimizing non-target drug application.

**Case report:** A 74-year-old female with a severe proximal airway stenosis of about 2.5mm was hospitalized. After bronchoscopic treatment, restenosis of the airway occurred. A irrigating catheter (about 125cm long and 2mm in diameter) for alveolar lavage was used and one end of the catheter was heated and sealed. A small pinhole was made at the remote part of catheter to allow the MMC solution to drip. A sterile vial containing 10 mg of MMC was diluted with 25 ml of normal saline solution using an aseptic technique to achieve a final concentration of 0.4 mg MMC/ml. The length of the airway stenosis segment was measured to calculate the volume of MMC solution needed at a dose of 1ml/cm. For the procedure, the MMC solution was injected into the irrigating catheter until the whole catheter was full. Then, the catheter was inserted into the airway through the working channel of the bronchoscope, and this assembly was moved around on the airway wall while the MMC solution was being injected into the irrigating catheter using a 1ml syringes to ensure that the volume used was accurate. Once the volume of the added MMC solution inflated the catheter beyond its threshold volume, intraluminal fluid would leak across its porous surface, and was manually smeared around the airway stenosis segment.

Following the initial combination procedure (bronchoscopic treatment and MMC), the patient returned to the hospital two more times. She was given same treatment using same method. Following the third treatment with the topical application of diluted Mitomycin C solution, the stenotic segment of airway became stable. The patient has no symptom of airway and no side effects until now (it has been more than 3 years).

**Conclusion:** We think that the irrigating catheter used in this report offers a safe, accurate, and economic approach for the endoluminal delivery of mitomycin C as a complementary treatment for airway stenosis.

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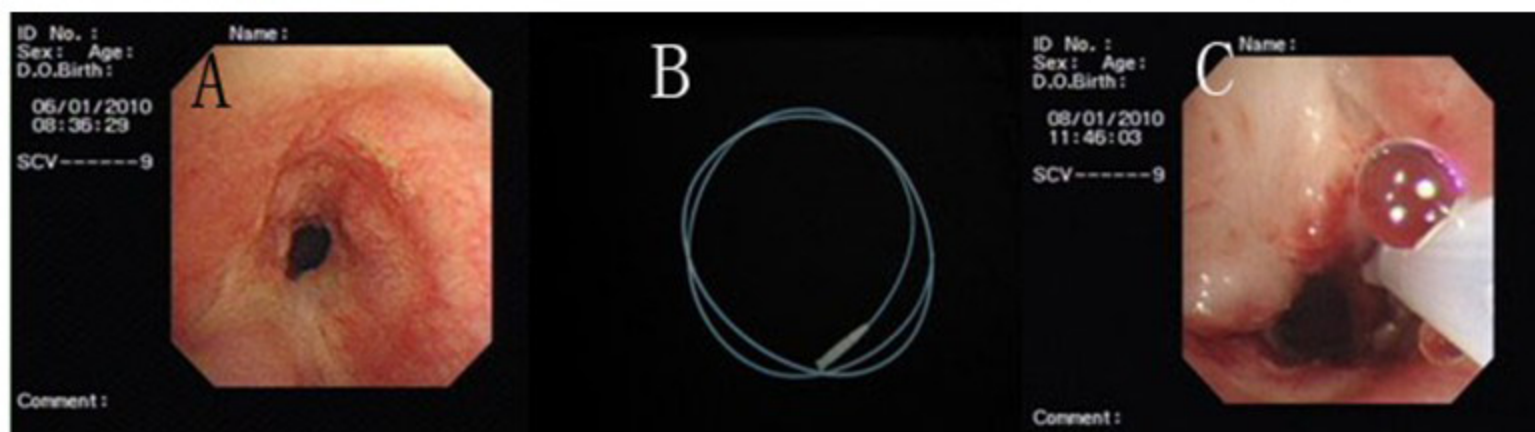


Fig.3 (A-C) A: Stenosis again (13 days after treatment). B: Irrigating catheter. C: Mitomycin C drip leak across catheter's porous surface.