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Microdebrider Bronchoscopy for Resection of Metal Stent Granulomas

Resección de granulomas en prótesis metálica con microdebrider broncoscópico

To the Editor,

We have had the opportunity to use a new instrument1 for the mechanical endoscopic resection of the trachea in a patient with special characteristics. We found the experience interesting and would like to describe the procedure.

The patient was a 77-year-old man with arterial hypertension and diabetes, chronic obstructive pulmonary disease, severe heart disease, and atrial fibrillation managed with a pacemaker. He underwent bilobectomy of the right middle and lower lung lobes in 2006 due to lung cancer. In 2011 a new epidermoid carcinoma was detected in the trachea, which we treated with laser endoscope and metal stent (Ultraflex®) measuring 18 × 40 mm2. He subsequently received chemo- radiotherapy. In March 2014, the patient had to undergo bronchoscopic interventionism to resect granulomas in the distal end of the prosthesis which were occluding over 75% of the lumen. We mechanically resected these granulomas using the Straightshot® M4 Microdebrider (37 cm in length and 4 mm in diameter, with a 15° angulated tip), via a rigid tracheoscope (Efer-Dumon®) 13.20 mm in diameter. The intervention lasted 35 min, and the post-operative period was incident-free. To date, August 2015, the patient continues in follow-up with no relapse (Fig. 1).

This instrument, which is very familiar in eye, nose and throat surgery and in interventions of the base of the skull, has rarely been used in lower airway procedures. It consists basically of a revolving tip connected to a control panel. Its advantages include very rapid tissue dissection; it aspirates as it cuts, keeping the surgical field clear most of the time, so the anesthetist can provide the fraction of inspiratory oxygen (FiO2) required by the patient. Several different attachments are marketed allow larger or smaller resections depending on the size of the lesion, the required precision, and Skimmer® Blade cutting mode. The device also includes a serrated, 2.9 mm or 4 mm diameter TriCut® Blade rotating tip.

Rotation speed is controlled manually or by a pedal (1500–5000 rpm). Drawbacks include its length, which at 37 cm

References


Fig. 1. Microdebrider tip resecting a granuloma in the distal end of the metal prosthesis.
limits its field of action to the tracheal and main bronchi. As this is a rigid instrument, it cannot be used with flexible bronchoscopy. It has been used in both malignant and benign lesions.\textsuperscript{2,3} The literature on this device has all been generated outside Spain, and there is no record of it having been used in the lower airway in this country.

The main reason for choosing the microdebrider was that the patient presented an abnormal spirometry with a severe mixed pattern, and needed oxygen therapy at higher levels to maintain safe oxygen saturation. Thermo ablative endoscopic procedures (lasers, electrocautery, argon plasma) are known to require low FiO\textsubscript{2} due to the risk of ignition. Moreover, the speed with which mechanical resection can be performed greatly reduces anesthesia time, which is an important factor in patients with low cardiorespiratory reserves. Our patient had a permanent pacemaker, preventing the use of bronchial electrocautery. Another alternative would have been cryotherapy, but this is not available in our hospital.

In summary, we believe that mechanical debridement with this device offers new possibilities, and can be used when conventional thermoablation is either unavailable or unsafe.

### References


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**Fig. 1.** Chest computed tomography showed: (A) Bilateral nodular lesions and ground glass densities, mainly affecting the lower lobes. (B) Area of parenchymal consolidation and associated pleural effusion in left lower lobe.

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