

Powered Instrumentation in Functional Endoscopic Sinus Surgery I: Surgical Technique

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Abstract

The use of the microdebrider provides an excellent, safe and thorough technique in functional endoscopic sinus surgery. It provides atraumatic dissection with minimal bleeding which enables decreased surgical time and faster postoperative healing. It is easily learned and requires minimal supplemental instrumentation. We feel that it is a superior technique in the practice of functional endoscopic sinus surgery.

Introduction

Functional endoscopic sinus surgery (FESS), described by Kennedy,¹ has become the method of choice in surgery for sinus disease. Kennedy described the technique in a 1985 paper, detailing this precise method in this approach to the paranasal sinuses.²

In the past several years, the use of powered instrumentation for functional endoscopic sinus surgery has become more common. The technique has been implemented in an attempt to provide increased safety in sinus surgery with decreased trauma to normal tissue.³ The device has been modified from instruments in common use in orthopedic surgery which were adapted from the original rotary dissector developed by Jack Urban for acoustic neuroma surgery.

We have operated on nearly 300 patients with functional endoscopic sinus procedures using the microdebrider as the major instrument throughout the cases. We find that practically all portions of the procedure can easily and safely be completed with this device. The current paper describes our precise surgical technique.

Technique

We utilize the microdebrider device marketed by Stryker Corp., Santa Clara, CA, as the Hummer™ (Figure 1). A description of the operating room set-up is given in a recent chapter by Setliff.³ The standard bit used for the majority of the dissection is the 3.5 mm aggressive cutter, also sold by Stryker Corp. A newer bit that we also frequently employ is the 4.0 mm Jaguar tip, which has a serrated edge on the fixed shaft as well as the rotating shaft. It has the advantages of not clogging with bone chips as readily since it has a slightly larger bore, as well as sharp teeth which can create an irregular edge of soft tissue for adequate purchase of the device. It is critical to have jagged edges to allow the rotating shaft to capture the tissue as it rotates. Also critical is adequate suction (generally 180 mmHg) to permit the tissue to be drawn into the rotating cutting surface. It is quite valuable to remove the device from the nose frequently and to irrigate it with water while depressing the pedal in order to prevent clogging of the device. For surgical visualization, 0-degree telescopes are used throughout the procedure, unless otherwise noted.

The patient is prepared for the procedure, which may be done under either local or general anesthesia. In those cases done with a local anesthetic, patients do not perceive any negative sensations from the use of the microdebrider device. Critical to the success of the surgery is adequate hemostasis. A few well-spent moments at the outset to establish good hemostasis will save considerable time later in the case and will allow the dissection to proceed much more smoothly. Small amounts of bleeding are not troublesome during the procedure, as the suction attached to the microdebrider will easily clear this minor bleeding away.

Hemostasis

To initiate hemostasis, patients spray each nasal airway with oxymetazoline 1% spray 15 to 20 minutes prior to

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Powered Endoscopic Sinus Surgery

Clemens Wendtner

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