

Short Communications

New sinus culture applicator (Yariktas applicator)

MURAT YARIKTAS, FEHMI DONER, MUSTAFA DEMIRCI*, HARUN DOGRU

Abstract

Identification of the pathogen is crucial for the selection of an appropriate antibiotic in the management of sinusitis. We describe an original instrument that provides contamination-free culture from the sinus in endoscopic sinus surgery.

Key words: Sinusitis; Microbiological Techniques

Introduction

Most patients with chronic sinusitis respond to empirical therapy; however, if this fails, it is important to identify the causative pathogen.¹ These therapies should be directed by the results of sinus culture and sensitivity.²

Many different methods have been described for obtaining sinus culture from patients with chronic sinusitis.^{1–6} However, these methods had significant disadvantages, and the known techniques had risk of contamination with nasal flora.

We describe an original instrument (Yariktas applicator) that provides contamination-free culture from the sinus in endoscopic sinus surgery (ESS).

The narrow-bore sinus culture applicator

We prepared a cotton-tipped swab on a fishing line with a diameter of 1 mm and inserted it into a curved transparent

narrow bore catheter of 4 mm in diameter. In this way, a contamination-free swab within an external protective cover is constructed. Sterilization of this applicator is by ethylene oxide gas (Amsco® Eagle® 3017 EO Sterilizer, Steris Corporation, Ohio, USA).

The applicator is inserted to the inside of the sinus through the ostium or the cavity established during ESS (Figures 1 and 2). It is then left in place for a few seconds until the fibres of the swab appear moistened. The fishing line and the swab on the tip are then carefully drawn back inside the catheter. Having obtained the sample from the sinus, the applicator is drawn back, and the swab sent to the microbiology laboratory.

Patients with recurring bouts of rhinosinusitis after ESS often require multiple courses of antibiotics for an extended duration. This, coupled with the fact that these patients have usually been treated with multiple different antibiotics prior to sinus surgery, makes these patients especially susceptible to antibiotic resistance with potentially high treatment costs.³ Therefore, the identification of the pathogen is crucial for the selection of an appropriate antibiotic in the management of sinusitis.

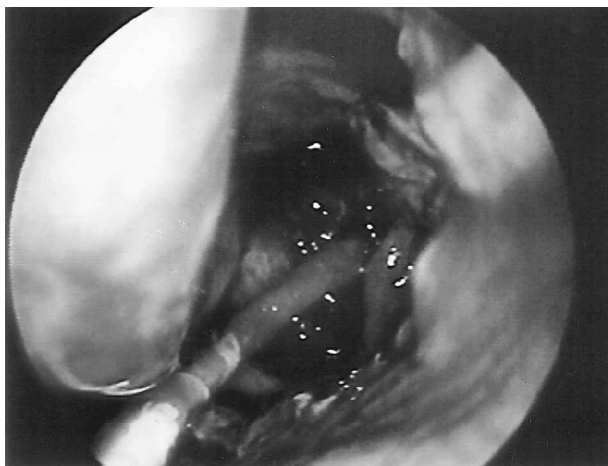


FIG. 1

During ESS, use of the narrow-bore sinus culture applicator.

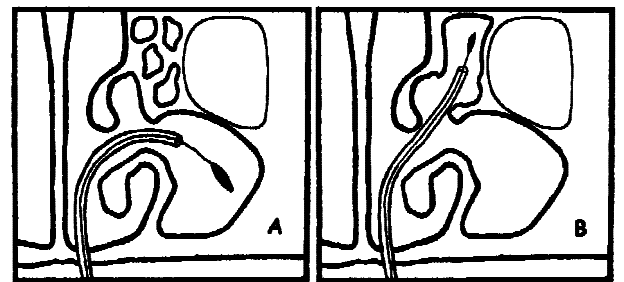


FIG. 2

Schematic view of the applicator in position inside the sinus through the maxillary ostium (A) or inside the cavity (B) established during ESS.

From the Departments of Otorhinolaryngology and Clinical Microbiology*, Süleyman Demirel University School of Medicine, Isparta, Turkey.

Accepted for publication: 28 May 2003.

It has been suggested that endoscopically-guided middle meatal cultures can accurately identify the pathogen in maxillary sinusitis.^{1,3,4} But, contamination from the nasal cavity cannot be avoided and the ethmoid sinus, sphenoid sinus and frontal recess cannot be reached directly. Transnasal cultures from swabs of the nasal cavity have been shown to give unreliable microbiological information.

The cultures were obtained from the sinuses through the ostium or from the inside of the sinus cavity established during ESS. By using this technique, there is no risk of contamination and the accuracy of sampling is potentially higher. Our method is reliable and might be beneficial. In addition, a sample may be obtained from the frontal recess, ethmoid and sphenoid sinuses with the aid of this applicator.

References

- 1 Vogan JC, Bolger WE, Keyes AS. Endoscopically guided sinonasal cultures: a direct comparison with maxillary sinus aspirate cultures. *Otolaryngol Head Neck Surg* 2000;**122**:370–3
- 2 Gold SM, Tami TA. Role of middle meatus aspiration culture in the diagnosis of chronic sinusitis. *Laryngoscope* 1997;**107**:1586–9
- 3 Bhattacharyya N, Kepnes LJ. The microbiology of recurrent rhinosinusitis after endoscopic sinus surgery. *Arch Otolaryngol Head Neck Surg* 1999;**125**:1117–20
- 4 Nadel DM, Lanza DC, Kennedy DW. Endoscopically guided sinus cultures in normal subjects. *Am J Rhinol* 1999;**13**:87–90
- 5 Casiano RR, Cohn S, Villasuso E, Brown M, Memari F, Barquist E, *et al.* Comparison of antral tap with endoscopically directed nasal culture. *Laryngoscope* 2001;**111**:1333–7
- 6 Schlosser RJ, London SD, Gwaltney JM Jr, Gross CW. Microbiology of chronic frontal sinusitis. *Laryngoscope* 2001;**111**:1330–2

Address for correspondence:
Dr Murat Yariktas,
Yayla M. 1604 S. 5/3 32100,
Isparta,
Turkey.

Fax: +90 (246) 237 17 62
E-mail: myariktas@hotmail.com

F. Doner, M.D. takes responsibility for the integrity of the content of the paper.
Competing interests: None declared
