Narrow-Band Imaging in the Endoscopic Evaluation of Hereditary Hemorrhagic Telangiectasia Patients

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INTRODUCTION

Hereditary hemorrhagic telangiectasia (HHT), also known as Rendu-Osler-Weber syndrome, is an autosomal dominant disease with a prevalence of 1:5000, that leads to multiregional angiodysplasia.1 Mucocutaneous telangiectasias and visceral arteriovenous malformations are common features of this disease.2 The presence of telangiectasias in nasal mucosa leads to recurrent epistaxis that affects up to 96% of patients. On the basis of the endoscopic appearance of the nasal telangiectasias, different morphologic classifications have been proposed.3,4 Narrow-band imaging (NBI) is an optical imaging technology recently applied in ear, nose, and throat endoscopy to enhance the detail of certain aspects of the surface of the mucosa such as blood vessels.5,6

MATERIALS AND METHODS

We report possible advantages and disadvantages of this technology in the morphologic study of nasal telangiectasias in HHT patients. Two series of pictures are reported showing standard nasal endoscopies (Fig. 1) with the respective NBI endoscopic examinations (Fig. 2). We selected for this study only HHT patients who did not undergo previous treatment for their epistaxis. We excluded patients with a history of nasal surgery, septal perforation, or embolization.

RESULTS

NBI technology became available in our institution in 2011 for the evaluation of patients with head and neck cancers. Between 1996 and 2012, 295 HHT patients were treated in our institution for their epistaxis, for a total of 488 surgical procedures. Only patients who did not undergo previous nasal treatment were included in this report. From 2011 to 2012, 136 HHT patients underwent surgery for their epistaxis, and in 13 patients (nine males, four females; mean age, 49.7 years) an NBI visualization of nasal telangiectasias was performed. After the approval of the local ethics committee, we reviewed videotapes of these HHT patients. NBI endoscopy permitted a better definition of the morphologic aspects of these lesions. In particular, small telangiectasias were more easily recognized, whereas large lesions were more accurately studied in their vascular-convoluted appearance. The intraoperative usage of NBI was possible only in 3/13 patients (23.1%), in which the surgical field was maintained bloodless. In fact, although an adequate intraoperative hemostasis can be obtained with the use of topical vasoconstrictive agents, during surgery even a small amount of blood can obscure the visualization when an NBI endoscopy is performed.

DISCUSSION

In our experience, NBI endoscopy is a valid method for the morphologic study of nasal telangiectasias in HHT patients. Some disadvantages of NBI technology are the cost and availability of this instrumentation. NBI is available in our institution primarily for the study of head and neck cancers. We applied this instrument in HHT patients in the operating room during surgery but not for in-office diagnostics in the outpatient clinic. The possible association of NBI with genetic information could clarify some aspects of the genotype-phenotype correlation in this disease. In this article we...
wanted to report our first impressions of NBI in HHT. A larger cohort of patients could be useful to propose a novel NBI classification of nasal telangiectasias in HHT patients. Moreover, further studies should be performed to better investigate the role of this technology in HHT.

**BIBLIOGRAPHY**


