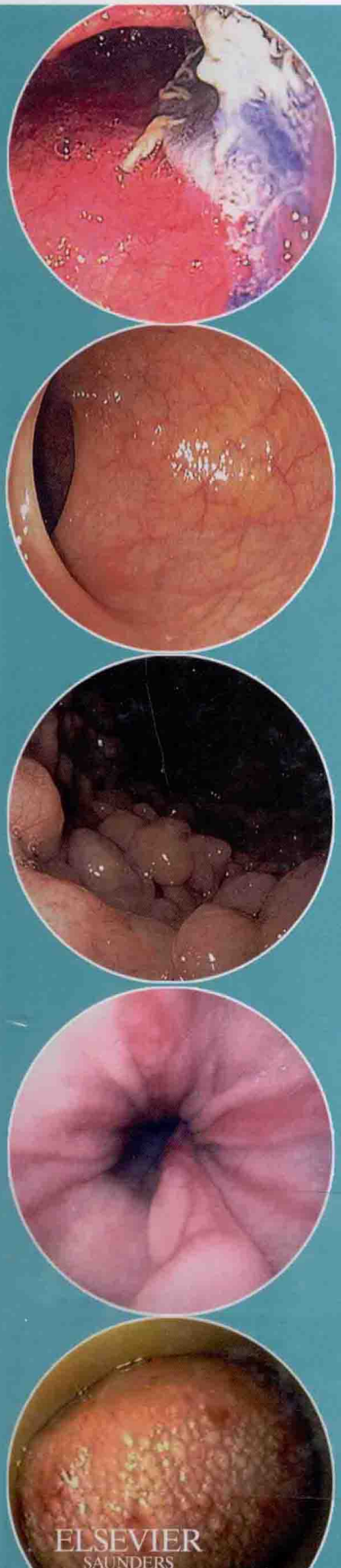

ATLAS OF CLINICAL GASTROINTESTINAL ENDOSCOPY

Third Edition

C. Mel Wilcox
Miguel Muñoz-Navas
Joseph Sung

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To all those who helped me collect these images as well as to my wonderful family for providing me the time to compile this labor of love.

C. Mel Wilcox, MD, MSPH

This book is dedicated to my wife, Lucia, my children, Miguel, Javier, and Ina, for their love, patience, and support, and my granddaughter, Ema, who has given me so much joy. I must especially thank my parents, Calixto and Maria (may they rest in peace), to whom I owe what I am, and my late father-in law, Antonio, who would be very proud of this publication.

Miguel Muñoz-Navas, MD, PhD

To my wife, Rebecca Wong.

Joseph Sung, MD, PhD

PREFACE

The first edition of our text was published in 1995. In the second edition I was fortunate enough to enlist the expertise of two internationally renowned endoscopists, Dr. Miguel Muñoz-Navas and Dr. Joseph Sung, to provide images that markedly enriched the spectrum of images. Now some 5 years later, again with the aid of these renowned endoscopists, we have further enhanced our collection, expanding the spectrum of images of both common and rare disorders. Newer technologies are illustrated in this edition, including narrow band imaging and endomicroscopy. Dr. Leona Council from my institution has also enhanced and enriched our pathology images. We believe this third edition will provide even greater benefit for those endoscopists seeking to both learn the spectrum of endoscopic disease and correlate images with radiology and pathology.

C. Mel Wilcox, MD, MSPH

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Miguel Muñoz-Navas, MD, PhD

My heartfelt gratitude to my colleagues at the Institute of Digestive Diseases who contributed to the pictures in this project: Dr. James Lau, Dr. Y. T. Lee, Dr. Justin Wu, and Dr. Larry Lai. I would also like to thank Mr. Alan Fok and Ms. Ashur Lam for their assistance in digitizing these pictures.

Joseph Sung, MD, PhD

ATLAS OF CLINICAL GASTROINTESTINAL ENDOSCOPY

CONTENTS

CHAPTER 1

Oropharynx and Hypopharynx

INTRODUCTION

The oropharynx is the gateway to the proximal gastrointestinal tract. Although visualized daily by endoscopists, a thorough examination may not be routine. With the expanding patient base of immunocompromised patients, inspection of the oropharynx, particularly in patients with esophageal symptoms, should be part of every examination. Oropharyngeal abnormalities can suggest underlying esophageal disease in these patients, and oropharyngeal lesions may be the first manifestation of an underlying systemic disorder. Asymptomatic malignant disease may also be detected. With increasing appreciation of the extraesophageal manifestations of gastroesophageal reflux disease, hypopharyngeal examination assumes an even greater role. A thorough knowledge of hypopharyngeal anatomy is thus essential for all endoscopists.

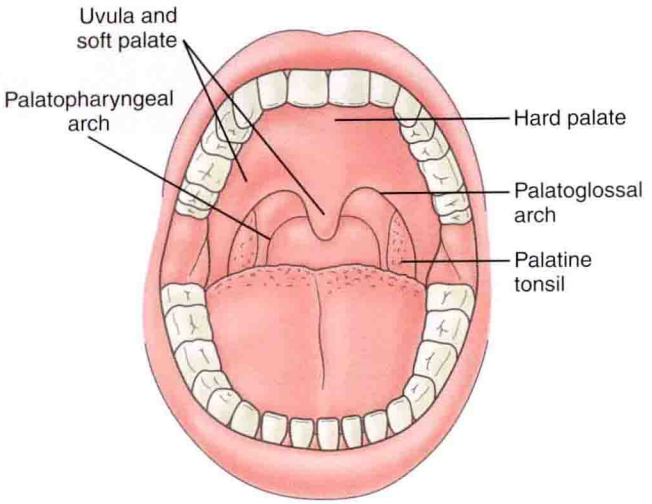

FIGURE 1.1 OROPHARYNX
Normal pharynx as viewed with an endoscope, demonstrating the junction of the hard and soft palate, uvula, and posterior pharynx.

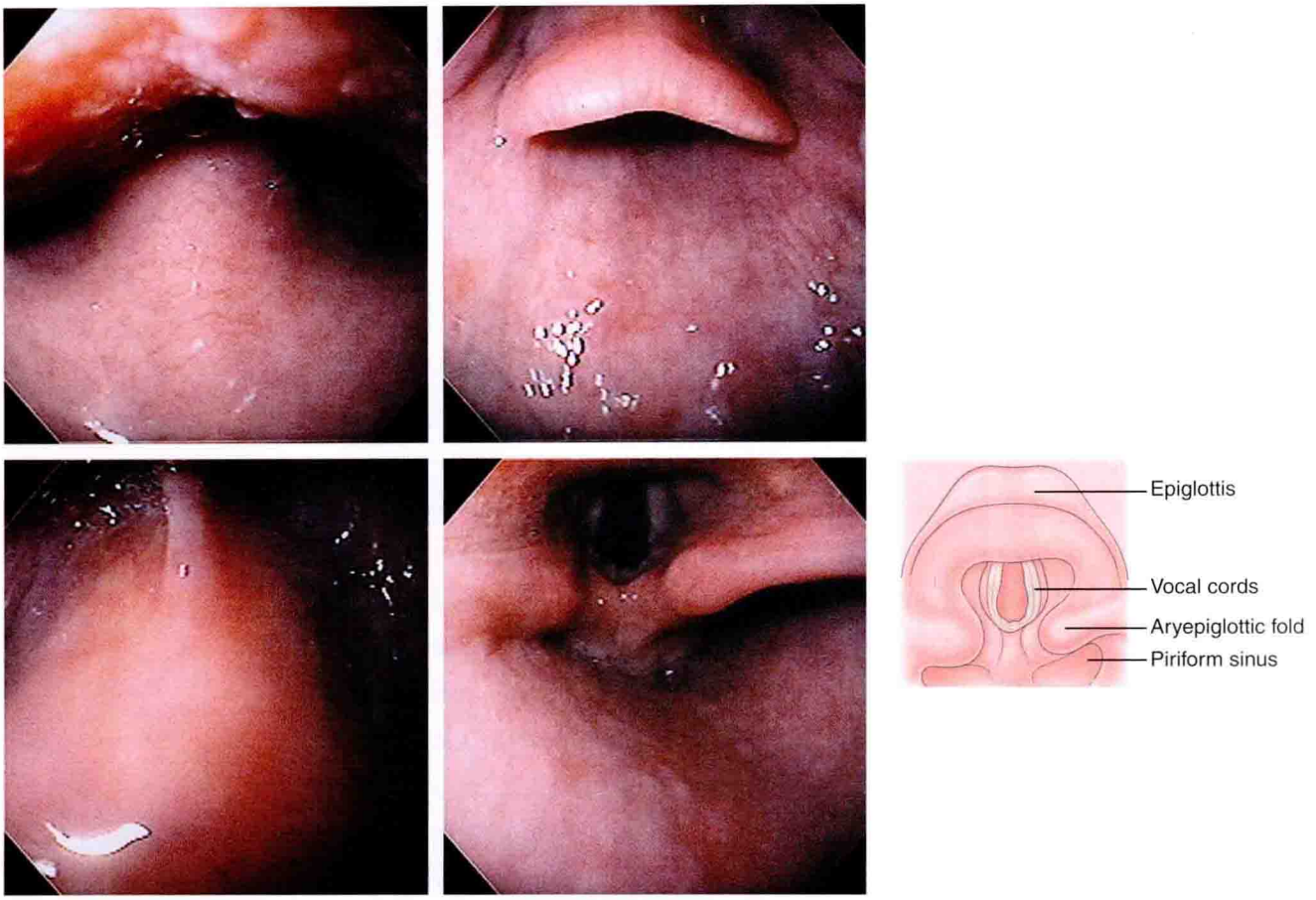

FIGURE 1.2 LANDMARKS OF THE OROPHARYNX AND HYPOPHARYNX
With the endoscope advanced under direct vision, the inferior portion of the uvula is seen at the base of the tongue. Notice that the image is inverted *(top left)*. With further advancement, the superior portion of the epiglottis is identified *(top right)*. Advancement anteriorly ends at the attachment of the epiglottis, termed the *valleculae (bottom left)*. To enter the hypopharynx, the endoscope is advanced posteriorly behind the epiglottis into the hypopharynx *(bottom right)*. The epiglottis appears to form a roof over the hypopharynx. The vocal cords are surrounded by the aryepiglottic folds anteriorly. In this position, the piriform recesses or sinuses are on the lateral side of the aryepiglottic folds. The cricopharyngeus and entrance to the esophagus are in the midline posteriorly.

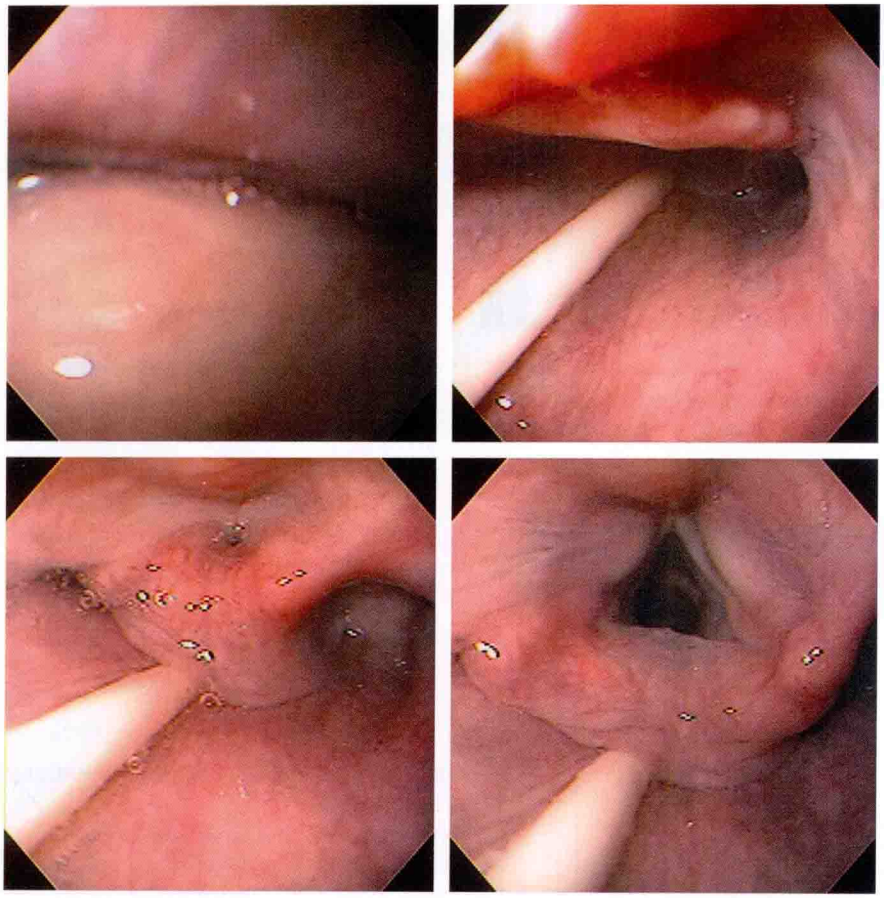

FIGURE 1.3 DIRECTION TO CRICOPHARYNGEUS
The endoscope is passed over the tongue and uvula *(upper left)*. Once past the uvula, the epiglottis and hypopharynx are seen in the distance. A nasogastric feeding tube is now present *(upper right)*. The arytenoids are now visible with the feeding tube seen posterior in the midline *(bottom left)*. The arytenoids are open and the vocal cords visible. Again, the feeding tube is posterior in the midline showing the location of the cricopharyngeus *(bottom right)*.

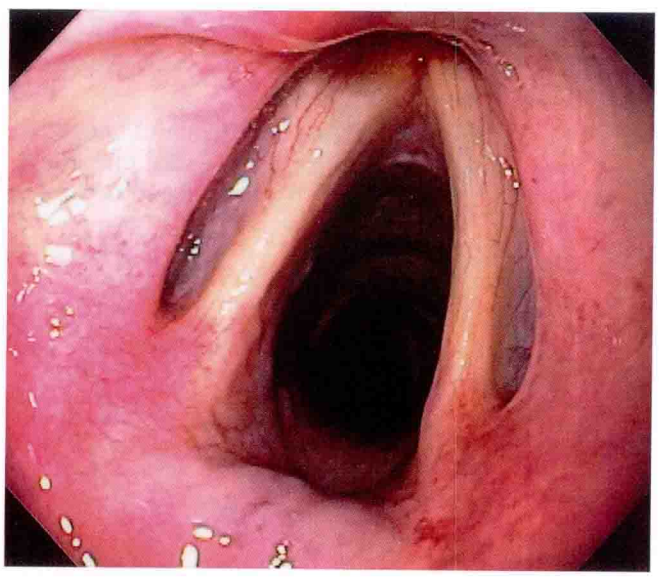

FIGURE 1.4 VOCAL CORDS
Normal vocal cords and surrounding structures as seen from the arytenoids.

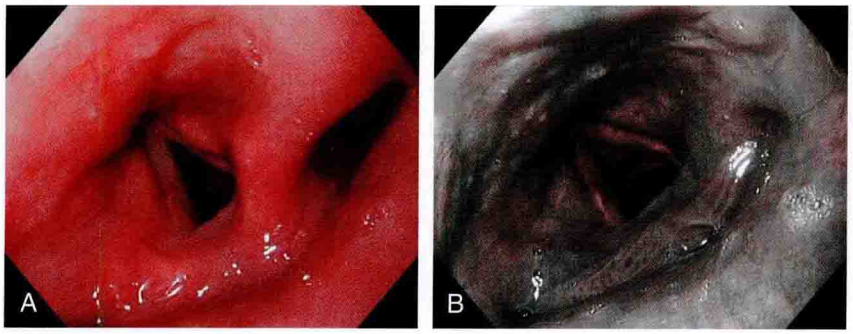

FIGURE 1.5 HYPOPHARYNX
A, Normal-appearing hypopharynx as seen on high-definition endoscopy. **B,** Narrow band imaging of the hypopharynx.

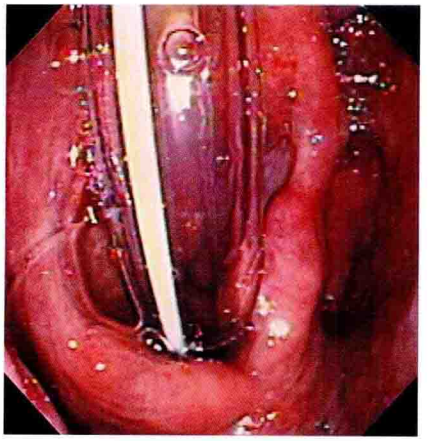

FIGURE 1.6 HYPOPHARYNX WITH ENDOTRACHEAL TUBE
Note the anatomy of the hypopharynx with endotracheal intubation.

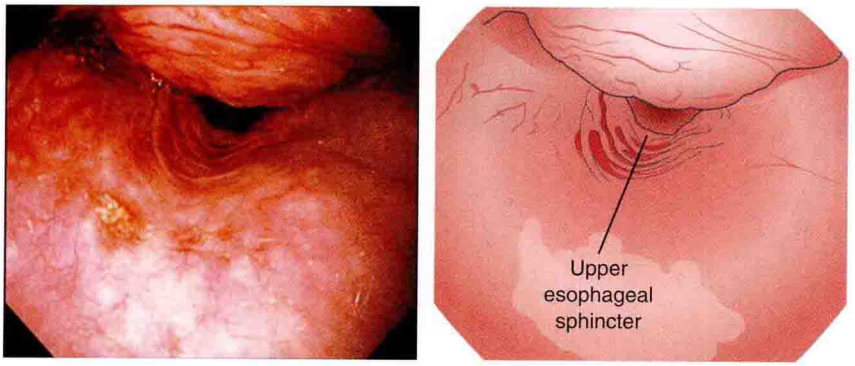

FIGURE 1.7 PATENT UPPER ESOPHAGEAL SPHINCTER
After endoscope removal, the upper esophageal sphincter remained patulous. Note its location relative to the cricopharyngeus, confirming the posterior location of the upper esophageal sphincter. Also note the erythema of the hypopharynx and arytenoids.

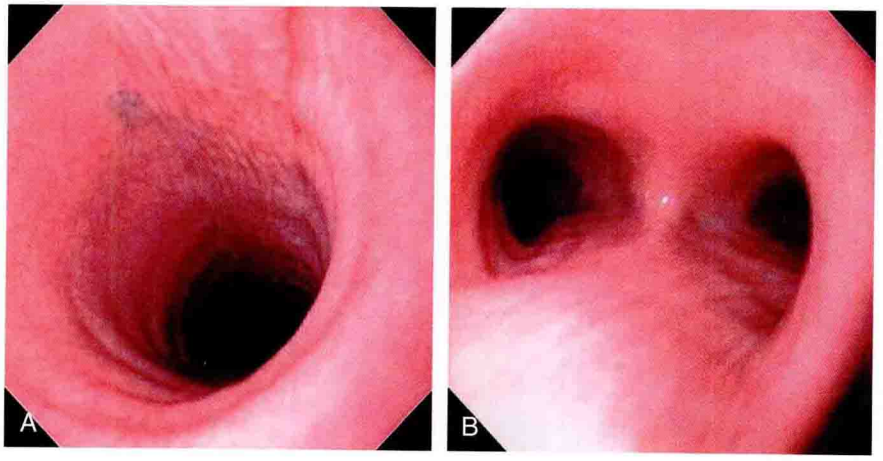

FIGURE 1.8 TRACHEA AND CARINA
View of the **(A)** trachea and **(B)** carina at endoscopy. Note the ringlike architecture of the trachea.

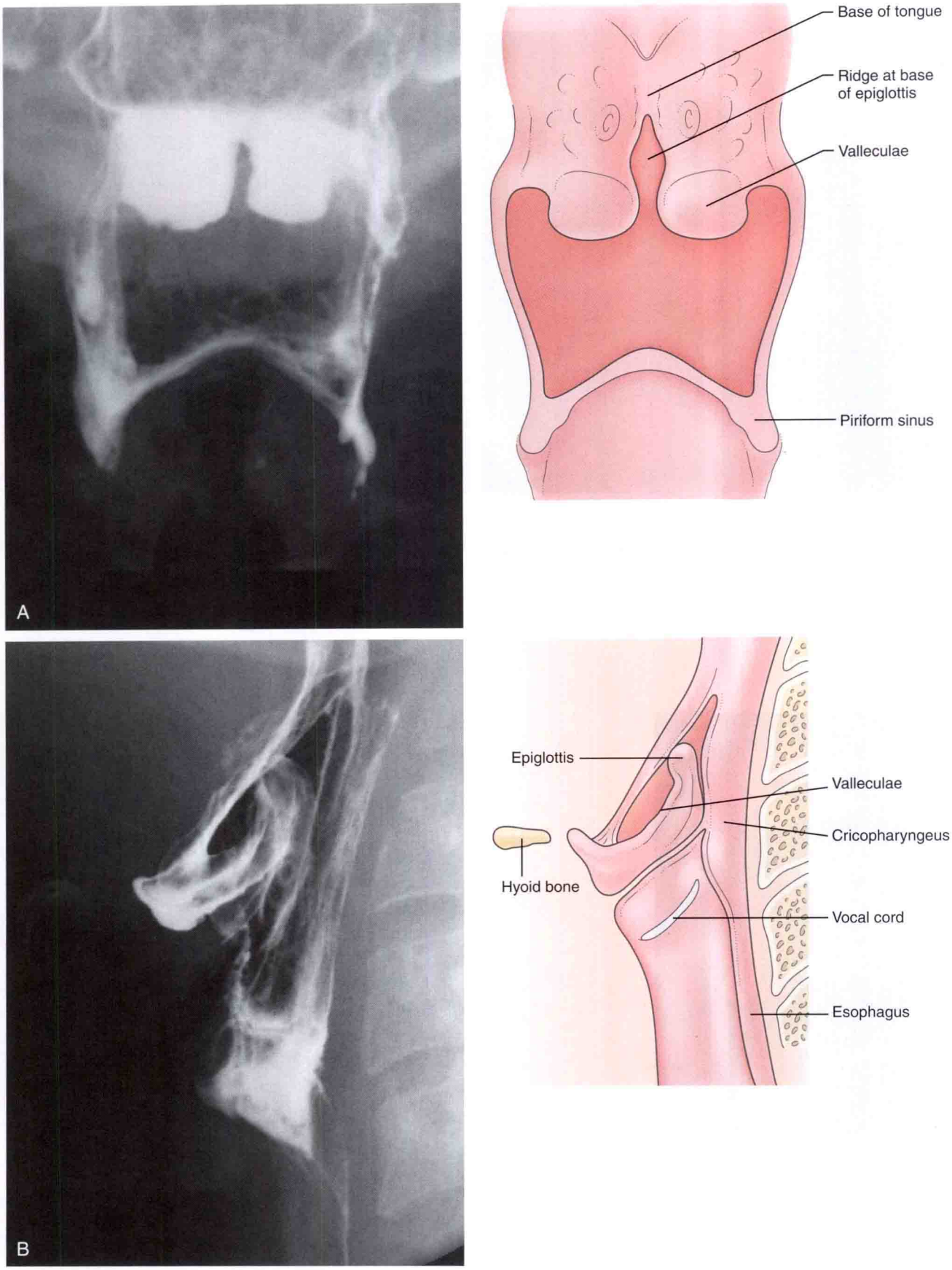

FIGURE 1.9 BARIUM STUDY OF HYPOPHARYNX AND ESOPHAGUS

A, Anteroposterior view demonstrates the base of the tongue, valleculae, piriform sinuses, and ridge at the base of the epiglottis. **B,** Lateral view demonstrates the valleculae; hypopharynx; piriform sinus; cricopharyngeus, with some contrast seen in the esophagus; and hyoid bone.

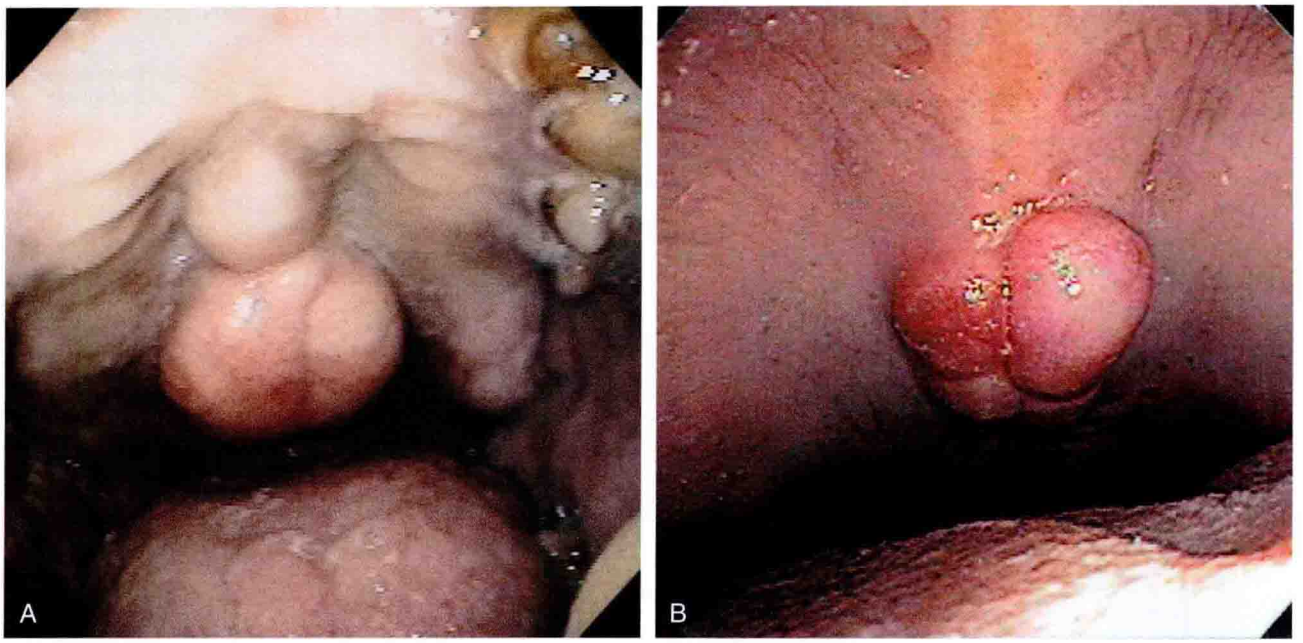

FIGURE 1.10 TORUS PALATINUS
A, This large, masslike abnormality on the hard palate is an exaggeration of a normal structure, resulting from a bony exostosis of the midline palatal suture. **B,** Nodular structure on the distal hard palate.

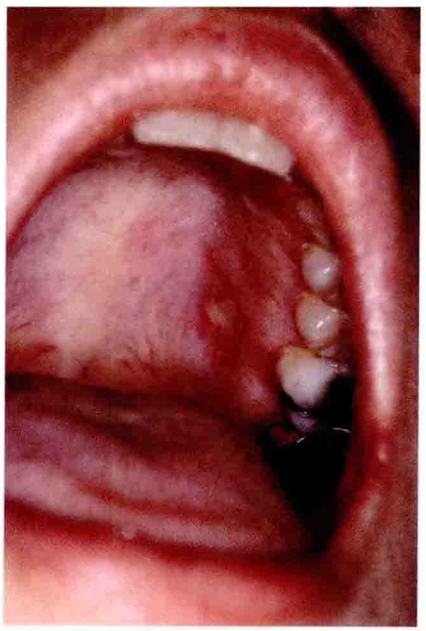

FIGURE 1.11 APHTHOUS ULCER
Shallow, well-circumscribed ulceration on the hard palate. This patient had active inflammatory bowel disease (see Figure 5.36).

Differential Diagnosis

Aphthous Ulcer (Figure 1.11)

Infectious causes
- Herpes simplex virus
- Syphilis
- Zoster
- Histoplasmosis

Noninfectious causes
Systemic lupus erythematosus
T-cell disorders
- Human immunodeficiency virus infection

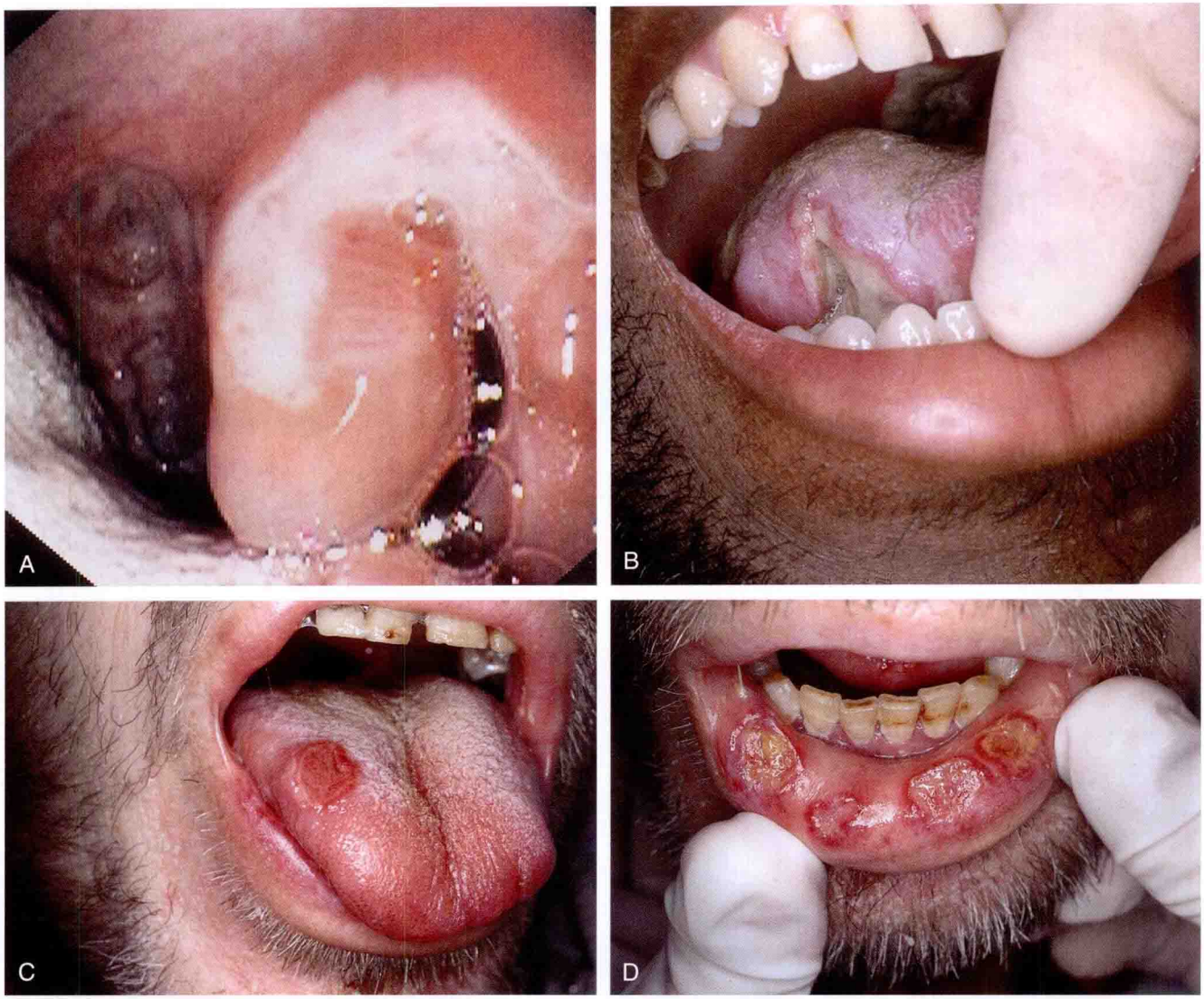

FIGURE 1.12 HUMAN IMMUNODEFICIENCY VIRUS (HIV)-ASSOCIATED APHTHOUS ULCER
A, This large ulcer extends from the uvula to the soft palate. These lesions are frequent in patients with acquired immunodeficiency syndrome (AIDS) and may occur on the tongue or buccal mucosa or in the hypopharynx. They may become large, simulating an infectious or neoplastic process. **B,** Deep ulcer on the lateral aspect of the tongue. Note in the distance a well-circumscribed, similar-appearing ulcer is present on the hard palate. **C,** Well-circumscribed, clean-based ulcer on the tongue. **D,** Multiple ulcerations on the lower lip. This patient with severe odynophagia also had a large idiopathic esophageal ulceration.

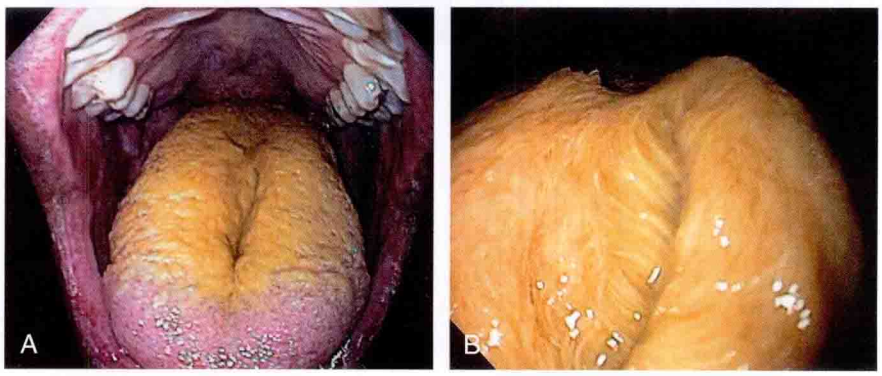

FIGURE 1.13 HAIRY TONGUE
A, Yellowish coating of the tongue. **B,** Close-up shows a furry appearance resembling hair. This disorder, of unknown etiology, is characterized by hypertrophy of the filiform papillae.

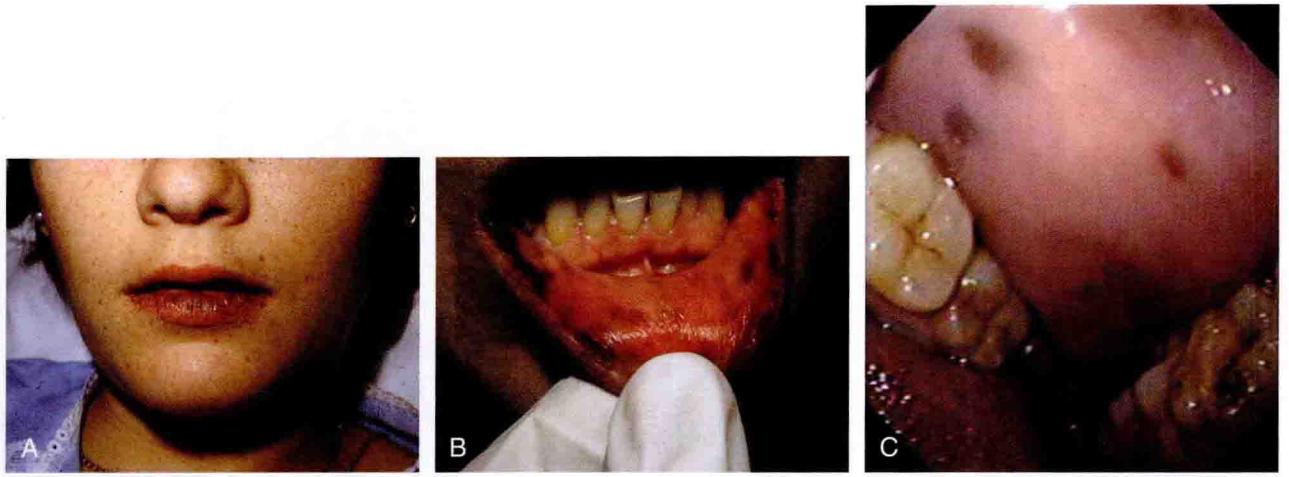

FIGURE 1.14 PEUTZ-JEGHERS SYNDROME
Multiple black hyperpigmented lesions of the **(A)** lips, **(B)** buccal mucosa, and **(C)** hard palate.

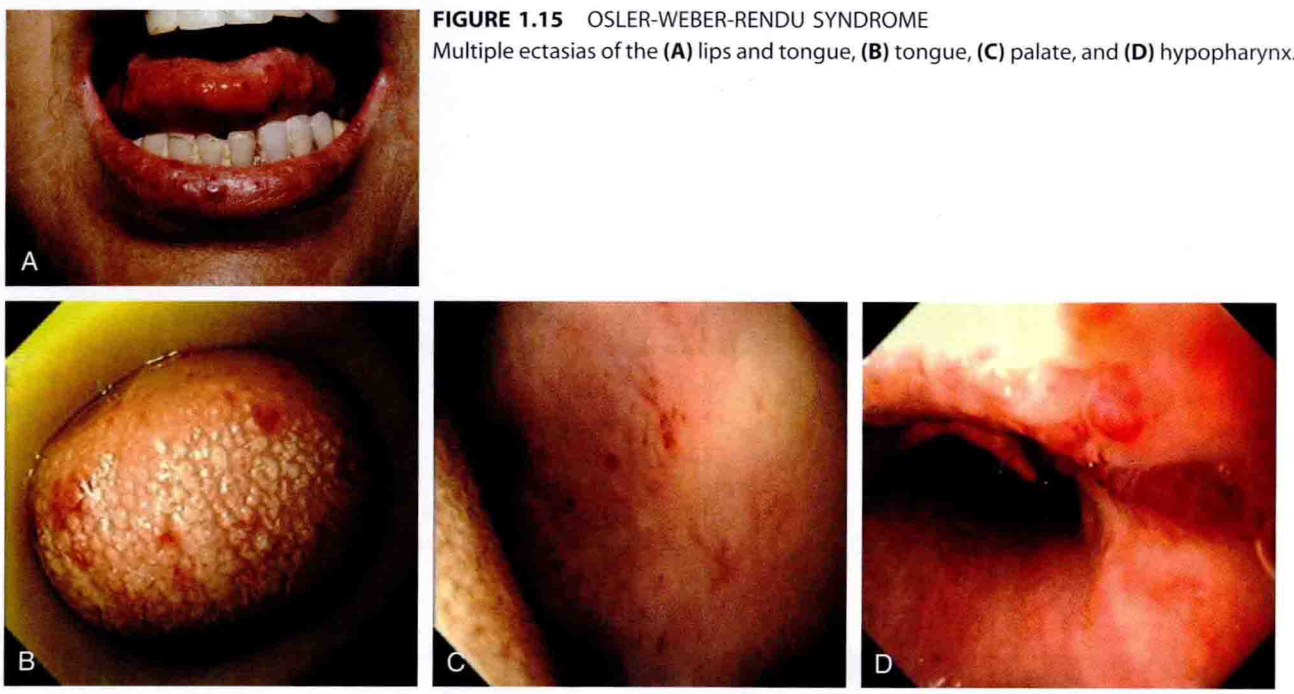

FIGURE 1.15 OSLER-WEBER-RENDU SYNDROME
Multiple ectasias of the **(A)** lips and tongue, **(B)** tongue, **(C)** palate, and **(D)** hypopharynx.