

ATLAS OF LARYNGEAL SURGERY

CHARLES W. CUMMINGS
DONALD G. SESSIONS
ERNEST A. WEYMULLER, Jr.
PHYLLIS WOOD

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R767.9-64
E7 (1)

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CHARLES W. CUMMINGS, M.D.

Professor and Chairman, Department of Otolaryngology,
University of Washington School of Medicine,
Seattle, Washington

DONALD G. SESSIONS, M.D.

Professor of Otolaryngology, Department of Otolaryngology,
Washington University School of Medicine,
St. Louis, Missouri

ERNEST A. WEYMULLER, Jr., M.D.

Associate Professor, Department of Otolaryngology,
University of Washington School of Medicine,
Seattle, Washington

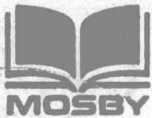
PHYLLIS WOOD

Medical Illustrator, Assistant Professor, Biology,
University of Washington School of Medicine,
Seattle, Washington

With **514 illustrations** by **Phyllis Wood**

The C. V. Mosby Company

ST. LOUIS TORONTO 1984



A TRADITION OF PUBLISHING EXCELLENCE

Editor: Carol Trumbold
Assistant editor: Anne Gunter
Editing supervisor: Judi Wolken
Manuscript editor: April Nauman
Cover design: Diane Beasley
Production: Carolyn Biby, Teresa Breckwoldt, Linda R. Stalnaker

Cover art was redrawn by Phyllis Wood from Anatomical Studies
by Leonardo da Vinci (The Queen's Collection at Windsor Castle).

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Printed in the United States of America

The C.V. Mosby Company
11830 Westline Industrial Drive, St. Louis, Missouri 63146

Library of Congress Cataloging in Publication Data

Main entry under title:

Atlas of laryngeal surgery.

Bibliography: p.

Includes index.

1. Larynx—Surgery—Atlases. I. Cummings, Charles W.

[DNLM: 1. Larynx—Surgery—Atlases. WV 17 A881]

RF516.A84 1984 617'.533 83-11415

ISBN 0-8016-1181-4

PREFACE

We have intended to provide for the reader a comprehensive atlas of surgical procedures involving the larynx. All the procedures have been and are used by at least one of the authors. We have attempted to exclude procedures that are impossible to perform or have a very low chance for success.

The format of the book is designed to provide for the laryngeal surgeon a framework from which to choose the most appropriate surgical procedure. Each procedure is presented in a standardized fashion by identifying the indications, contraindications, advantages, disadvantages, complications, specific workup, equipment, preoperative planning, surgical technique, postoperative considerations, and finally special comments (or pearls) that highlight steps to success with the surgical procedure. The bibliographies are sparse by design. However, important references are cited in all chapters.

We give specific appreciation and acknowledgment to the contributions of Dr. Mark Richardson, Department of Otolaryngology, University of Wash-

ington, for the chapter, "Pediatric Laryngotracheal Stenosis," and Dr. Bruce Pearson, Department of Otolaryngology, Mayo Clinic, for the section, "Near-Total Laryngectomy."

We would like to give special acknowledgment to Meg Bender, Jean Mayo, Trudy Schleicher, Stuart Schrader, and Jan Sessions for their contributions.

The reader will note that the medical illustrator is listed as an author. This innovative concept has evolved from the growing awareness and appreciation by other authors of Ms. Wood's depth of understanding of the surgical procedures, not to mention the brilliance that characterizes her artistic interpretations. It is apparent that the illustrations represent Ms. Wood's life's work every bit as much as the text represents that of the surgeons, and as such she should be recognized as an author.

Charles W. Cummings

Donald G. Sessions

Ernest A. Weymuller, Jr.

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Chapter 1

ANATOMY

The intention of this chapter is to provide an easy reference to laryngeal anatomy. This is done with a schematic outline of the extra- and intralaryngeal musculature, by graphically depicting the laryngeal neurovascular anatomy, by including histologic total laryngeal sections both in the coronal and horizontal planes, and with a schematic definition of the supraglottis, glottis, and subglottis.

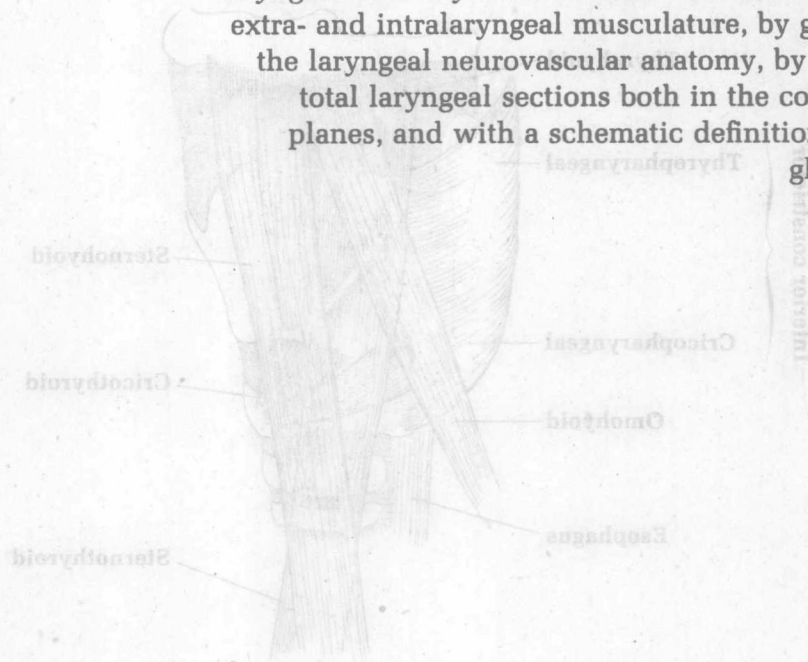


FIG. 1-1

A. Lateral view

1. Extralaryngeal musculature (Fig. 1-1)
 - a. Sternohyoid muscle
 - b. Sternothyroid muscle
 - c. Omohyoid muscle
 - d. Thyropharyngeal muscle
 - e. Cricopharyngeal muscle from the inferior constrictor

ANATOMY

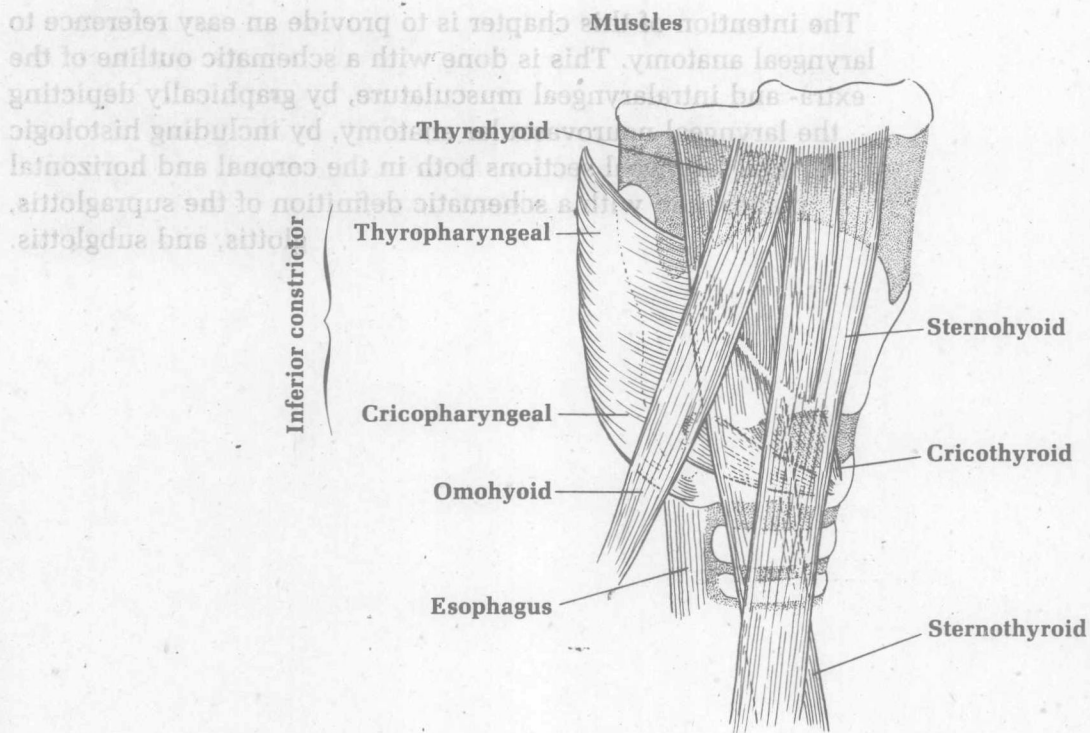


FIG. 1-1

2. Neurovascular anatomy (Fig. 1-2)
 - a. Superior laryngeal nerve
 - b. External and internal branch (motor and sensory)
 - c. Recurrent laryngeal nerve
 - d. Superior thyroid artery and vein with superior laryngeal branches

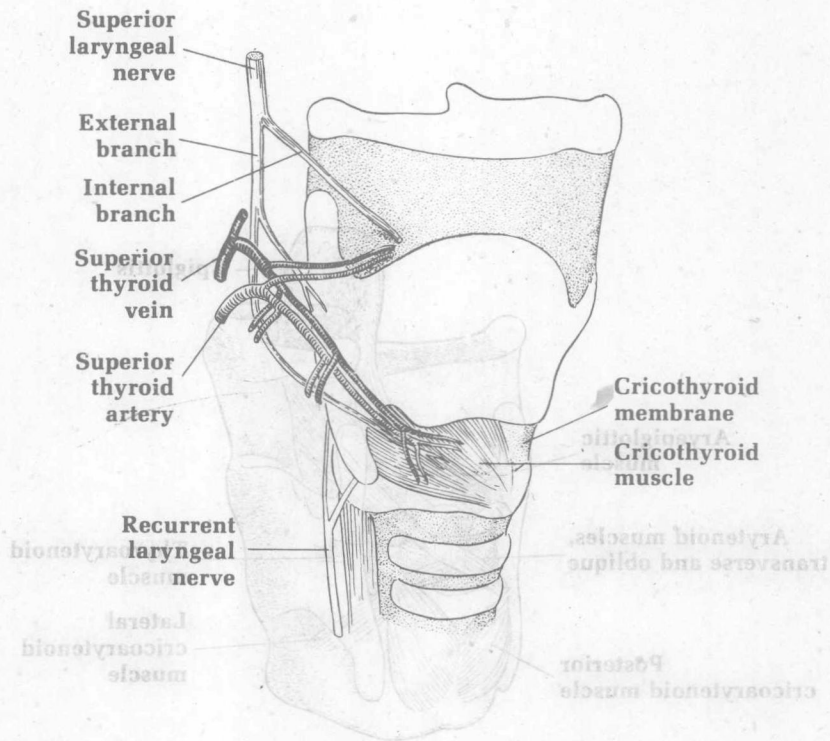


FIG. 1-2

B. Posterolateral view (Fig. 1-3)

1. Endolaryngeal musculature
 - a. Thyroarytenoid muscle
 - b. Lateral cricoarytenoid muscle
 - c. Posterior cricoarytenoid muscle
 - d. Arytenoid muscles, transverse and oblique
 - e. Aryepiglottic muscle

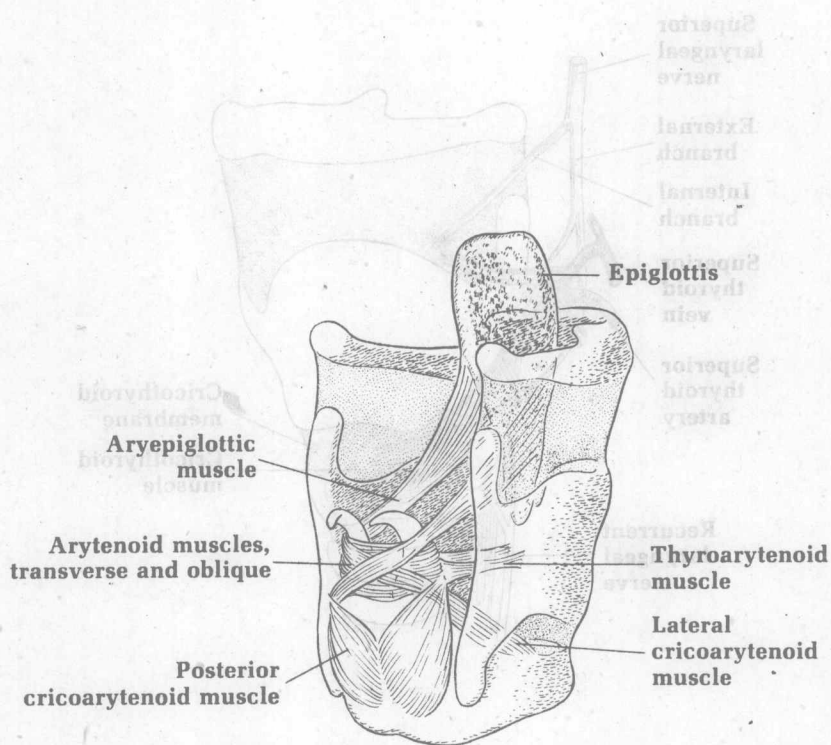


FIG. 1-3

C. Horizontal view (Fig. 1-4)

1. Endolaryngeal musculature
 - a. Thyroarytenoid muscle, internus (vocalis) and externus
 - b. Aryepiglottic muscle
 - c. Posterior cricoarytenoid muscle
 - d. Lateral cricoarytenoid muscle
 - e. Cricothyroid muscle

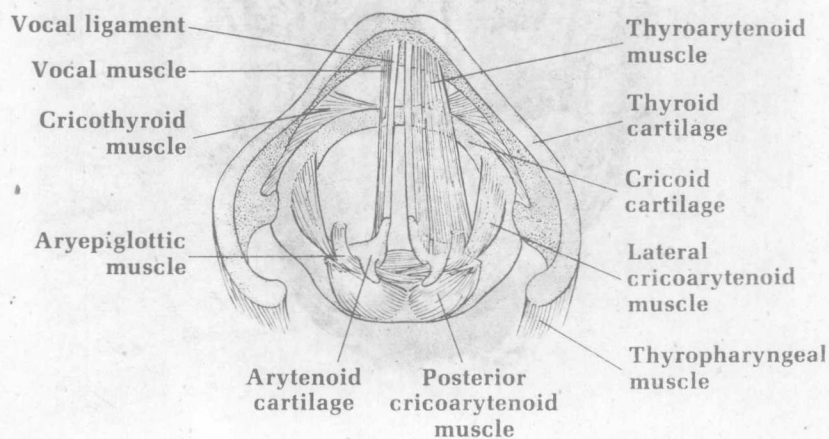


FIG. 1-4

D. Coronal sections

1. Very anterior coronal section of the adult male larynx (Fig. 1-5)

a. Cricothyroid muscle (CT), rectus and oblique

b. Thyroarytenoid muscle (TA), internus and externus

c. Thyrohyoid muscle (TH)

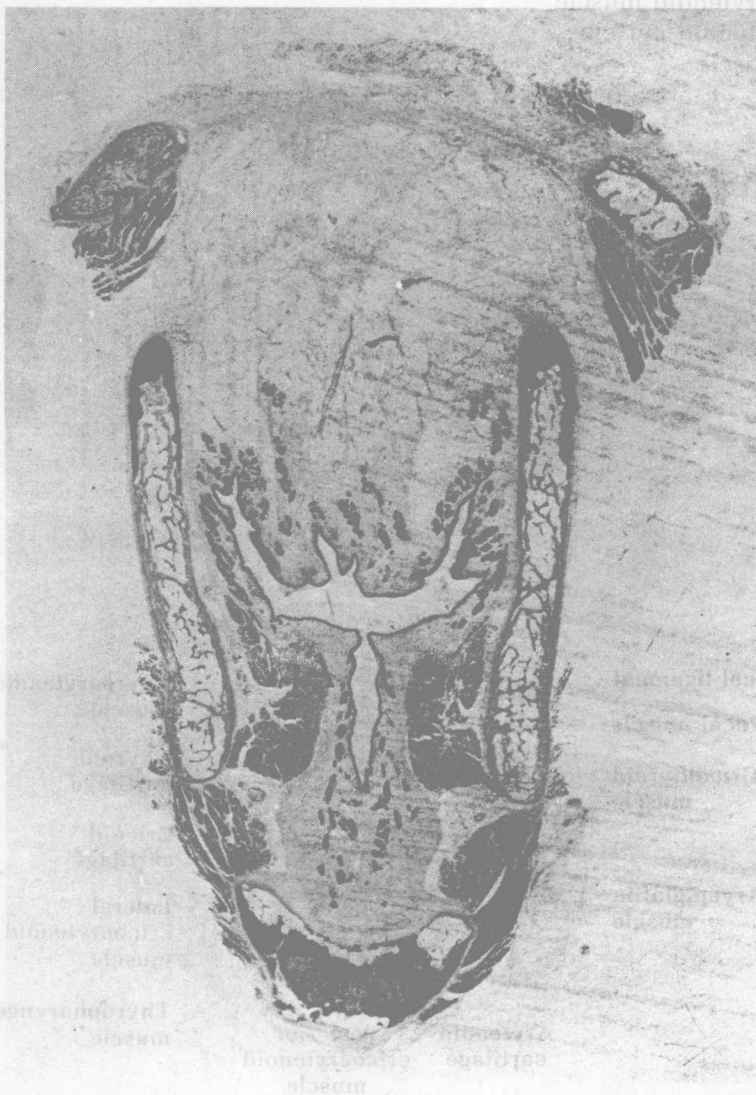


FIG. 1-5

2. Coronal serial section farther posterior than Fig. 1-5 (Fig. 1-6)
 - a. Thyroid cartilage (T)
 - b. Sacculi of the ventricle (S)

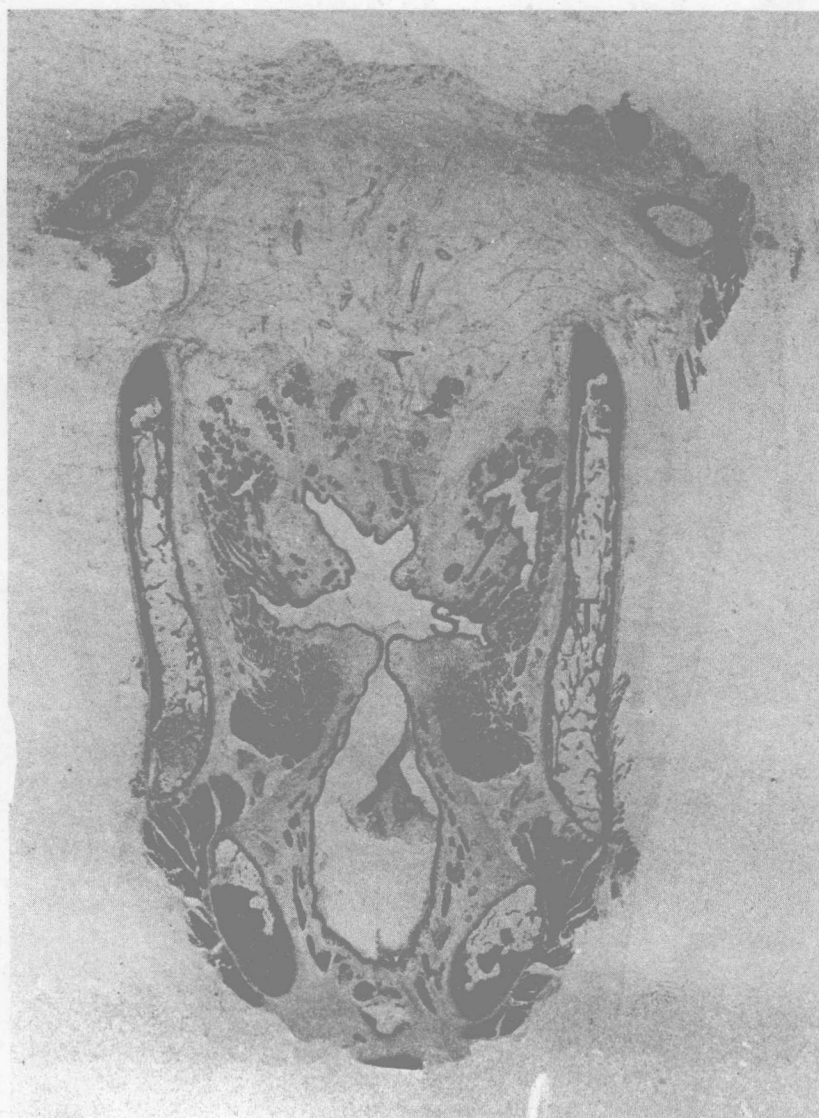


FIG. 1-6

3. Fig. 1-7

- a. Conus elasticus (CE)
- b. Ventricle muscle (V)
- c. Preepiglottic space (PE)

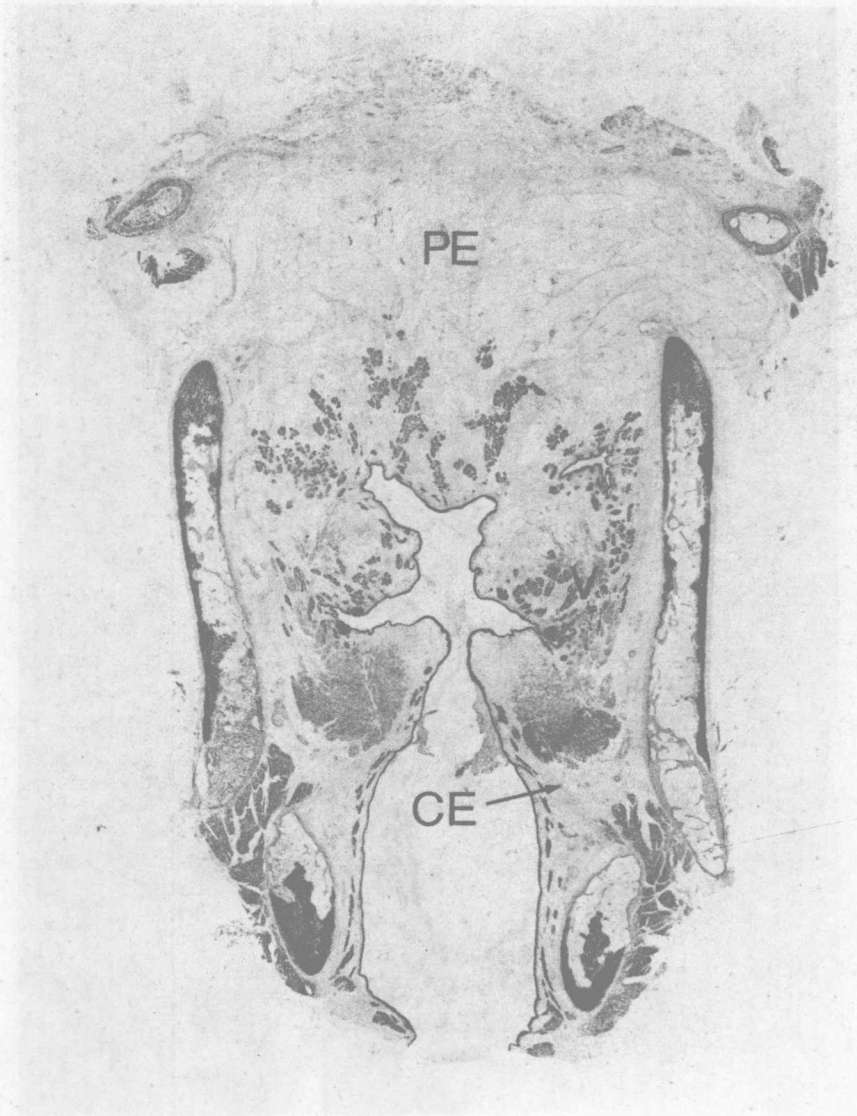


FIG. 1-7

4. Far posterior coronal section of adult male larynx (Fig. 1-8)

- a. Cricoid cartilage (C)
- b. Arytenoid cartilage (A)
- c. Cricothyroid joint (CA)

- d. Lateral cricoarytenoid muscle (LCA)
- e. Posterior cricoarytenoid muscle (PCA)
- f. Epiglottis (E)
- g. Aryepiglottic muscle (AE)

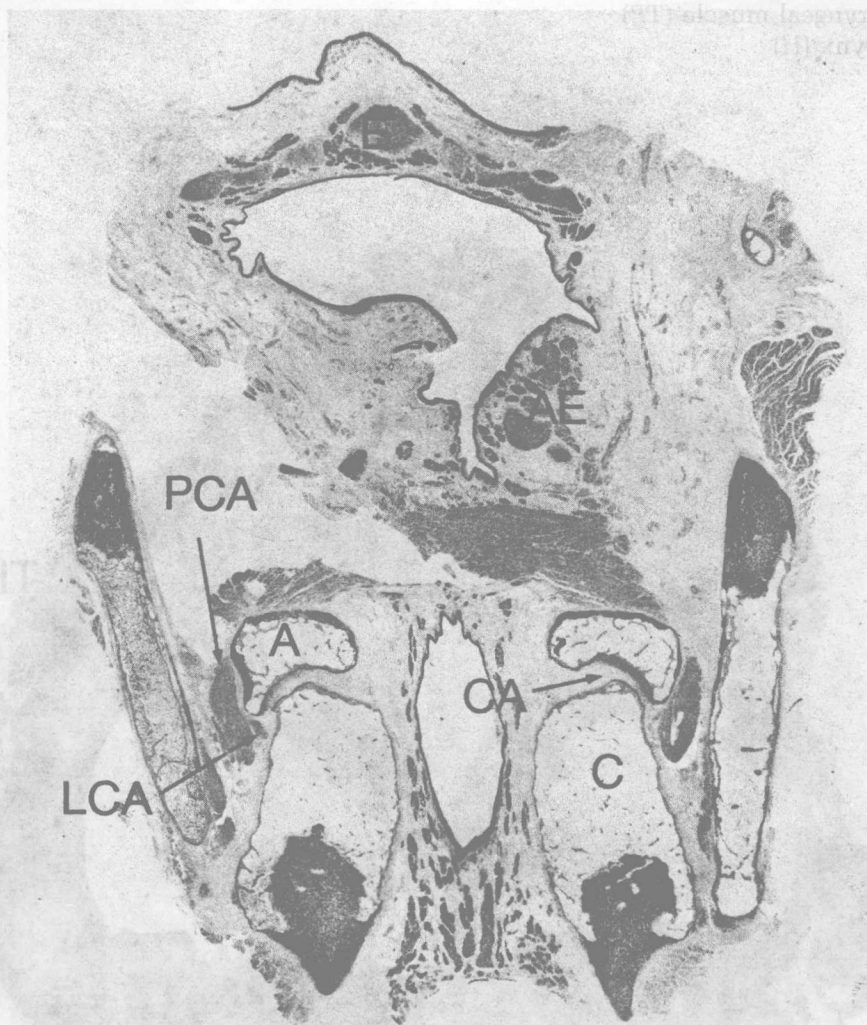


FIG. 1-8

- E. Horizontal sections of adult male larynx
1. Horizontal section at level of thyroid notch
(Fig. 1-9)
 - a. Preepiglottic space (PE)
 - b. Thyrohyoid muscle (TH)
 - c. Thyropharyngeal muscle (TP)
 - d. Hypopharynx (H)

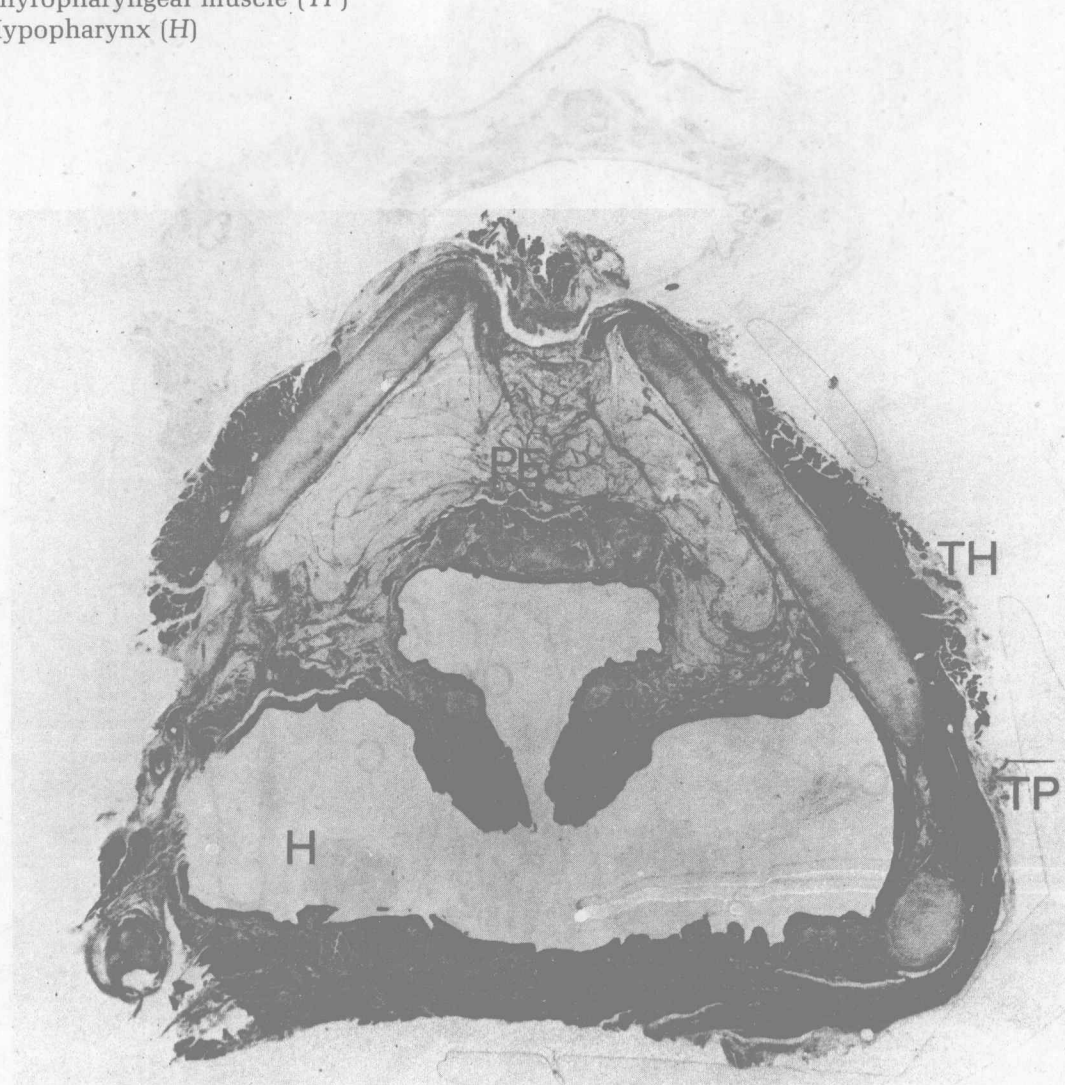


FIG. 1-9