

ATLAS OF LARYNGEAL SURGERY

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

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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

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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.

CONTENTS

PREFACE

1 Anatomy, 1

2 Endoscopy, 15

- Flexible fiberoptic endoscopy, 16
- Rigid fiberoptic endoscopy, 19
- Rigid endoscopy for diagnosis and routine laryngeal surgery, 21
- Vocal cord stripping for tumor, 30
- Laryngoscopy with laser excision of lesions, 32
- Micro-laryngoscopy for vocal cord augmentation with Teflon, 34
- Endoscopy for foreign body in adult patient, 37
- Pediatric endoscopy, 40

3 Airway procedures, 43

- Formal tracheotomy, 44
- Emergency tracheotomy, 49
- Tracheal fenestration, 52
- Transtacheal needle ventilation, 55
- Cricothyroidotomy, 58

4 Abductor paralysis, 61

- Arytenoidectomy: midline thyrotomy approach, 64
- Vocal cord lateralization: external approach, 72
- Endoscopic arytenoidectomy, 76
- Vocal cord lateralization: endoscopic approach, 78
- Vocal cord lateralization: neuromuscular pedicle reinnervation technique, 80
- Submucosal cordectomy for bilateral vocal cord paralysis, 84

5 Adductor paralysis, 87

- Laryngoscopic approach: Teflon injection, 89
- Open approach employing muscular or cartilaginous interposition, 92

6 Chronic aspiration, 97

- Obliteration of glottic aperture by Gelfoam injection, 99
- Epiglottic sewdown (epiglottopexy) procedure, 100
- Vocal cord plication procedure, 104
- Tracheal diversion procedures, 107
- Narrow field laryngectomy, 110

7 Acute laryngeal trauma, 115

- Transhyoid pharyngotomy with supraglottic resection for acute traumatic injury of supraglottis, 117
- Thyrotomy with keel for acute traumatic injury of anterior glottis, 120
- Thyrotomy with stent for acute transglottic laryngeal injury, 123
- Thyrotomy with stent for repair of acute subglottic injury, 128
- Acute laryngotracheal transection, 132

8 Chronic laryngeal stenosis, 137

- Thyrotomy with keel for anterior glottic web, 139
- Transhyoid pharyngotomy with anterior thyrotomy for resection and repair of combined supraglottic-glottic stenosis, 142
- Thyrotomy with bone graft for chronic laryngeal stenosis, 146
- Thyrotomy with epiglottic flap for repair of chronic laryngeal stenosis, 150
- Thyrotacheal anastomosis for subglottic stenosis, 153
- Lateral pharyngotomy for repair of hypopharyngeal stenosis, 158

9 Tracheal stenosis, 161

- Bronchoscopic dilatation, 162
- Tracheal fissure with stenting (T tube), 163
- Wedge resection of tracheal stenosis, 167
- Segmental resection of tracheal stenosis, 170

10 Pediatric laryngotracheal stenosis, 175

Mark Richardson

- Anterior cricoid split, 177
- Posterior glottic split cartilage perichondrial graft, 179
- Costal cartilage graft technique, 182
- Castellated laryngotracheoplasty, 186
- Anteroposterior thyrocricoid split, 190

11 Spasmodic dysphonia, 193

Recurrent and superior laryngeal nerve section, 194

12 Benign laryngeal tumors, 199

Midline thyrotomy, 201

Lateral thyrotomy for benign submucosal laryngeal tumor, 204

13 Malignant glottic tumors, 209

Partial vertical hemilaryngectomy for cancer of true vocal cord, 213

Glottic reconstruction after hemilaryngectomy with sternohyoid muscle flap, 218

Anterior commissure hemilaryngectomy with keel reconstruction, 220

Near-total vertical hemilaryngectomy with epiglottic flap reconstruction, 223

Near-total vertical hemilaryngectomy: reconstruction with tracheoesophageal conduit, 228

Total laryngectomy, 236

Radical neck dissection, 242

Modified (conservative) neck dissection, 249

Repair of tracheostoma stenosis, 256

Resection of tracheal stoma recurrence, 259

14 Malignant supraglottic tumors, 263

Transoral subtotal supraglottic laryngectomy with laser, 264

Horizontal subtotal supraglottic laryngectomy without arytenoidectomy, 267

Horizontal subtotal supraglottic laryngectomy with arytenoidectomy, 274

Horizontal subtotal supraglottic laryngectomy with ipsilateral true vocal cord resection (three-quarter laryngectomy): reconstruction with cartilage foldover technique, 281

Extended horizontal subtotal supraglottic laryngectomy for cancer of lingual surface of epiglottis and vallecula, 287

Teflon injection for postsurgical glottic incompetence, 293

Treatment of late glottic incompetence with cartilage implant, 296

15 Malignant tumors of the laryngopharynx, 301

Partial laryngopharyngectomy, 302

Suprahyoid pharyngotomy with resection of tumor of posterolateral hypopharyngeal wall: reconstruction with pectoralis major myocutaneous flap, 308

Resection of tumor of posterior hypopharyngeal wall with median labiomandibular glossotomy, 314

Total laryngopharyngectomy: reconstruction with deltopectoral flap, 318

Alternative reconstruction after total laryngopharyngectomy with neck dissection using pectoralis major myocutaneous flap, 326

Resection of postcricoid cancer with laryngotracheal autograft reconstruction, 330

16 Tracheoesophageal speech rehabilitation, 335

Secondary tracheoesophageal shunt procedure, 337

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.

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

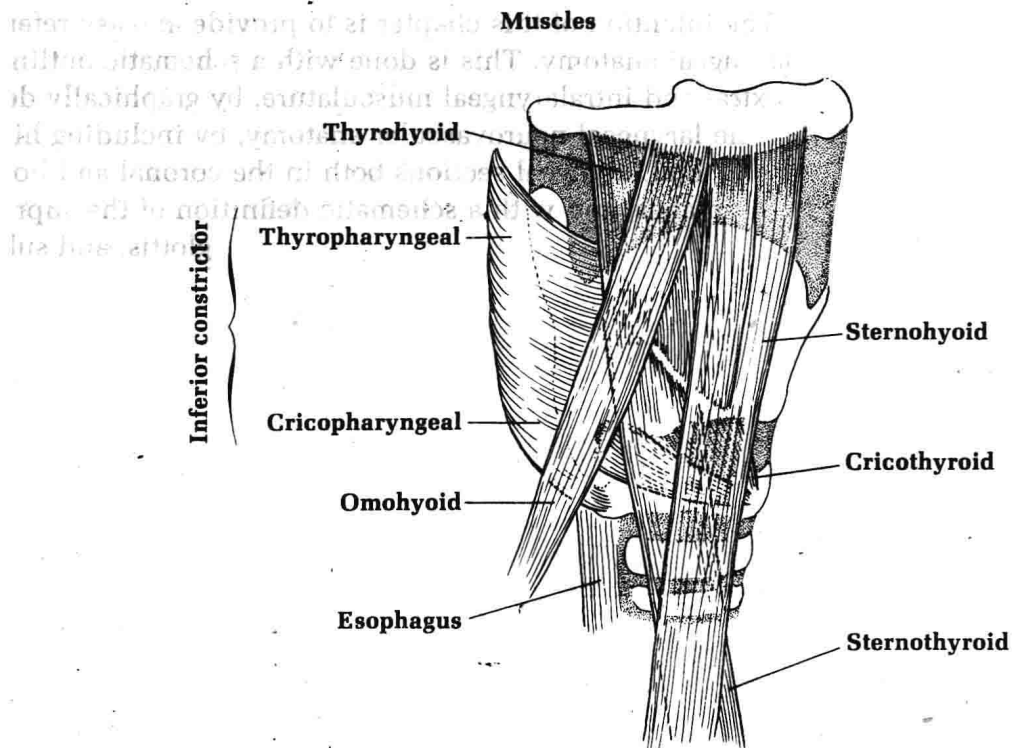


FIG. 1-1

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

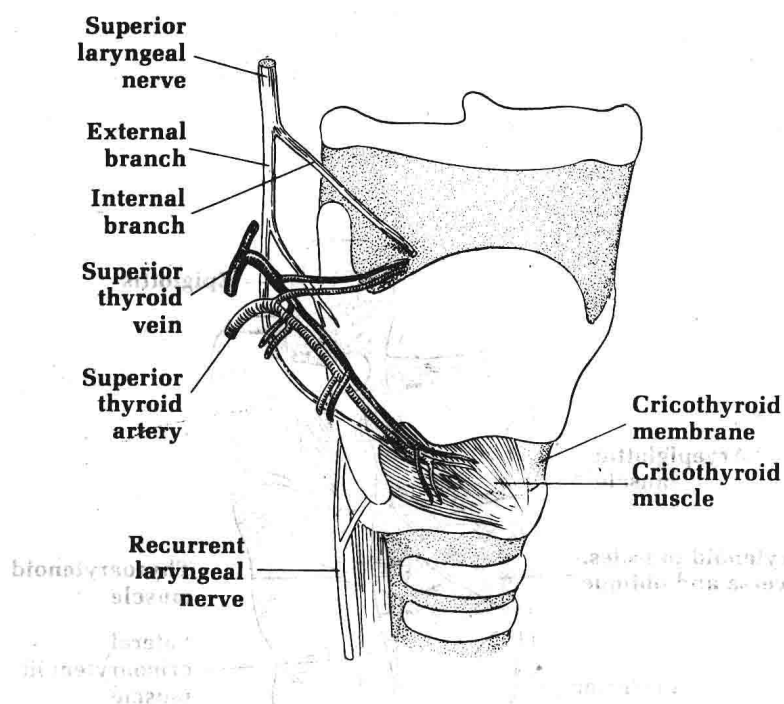


FIG. 1-2

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

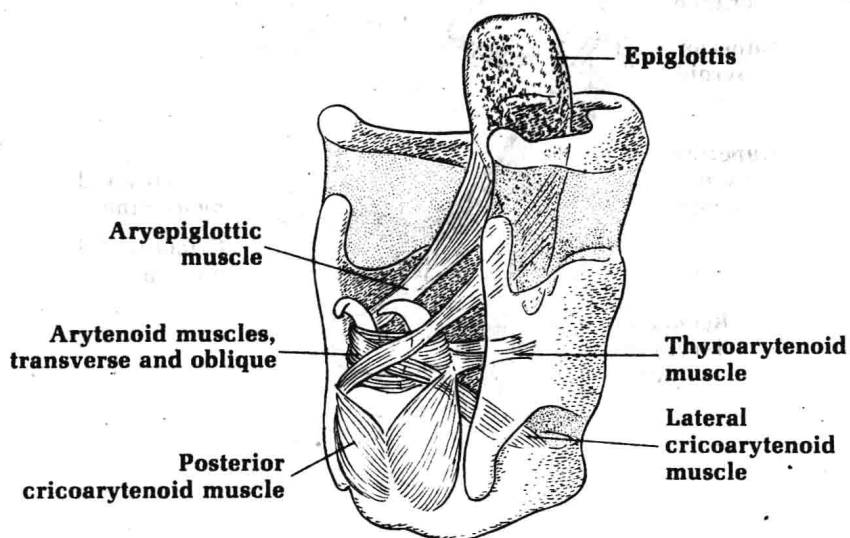


FIG. 1-3

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

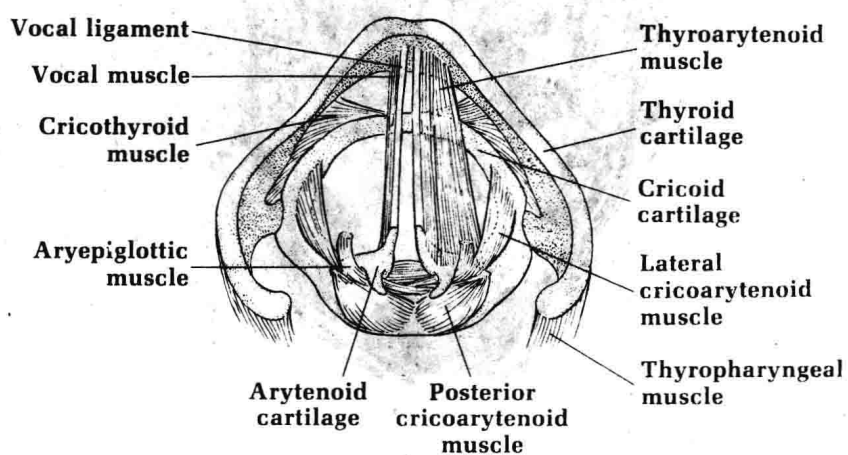


FIG. 1-4

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)

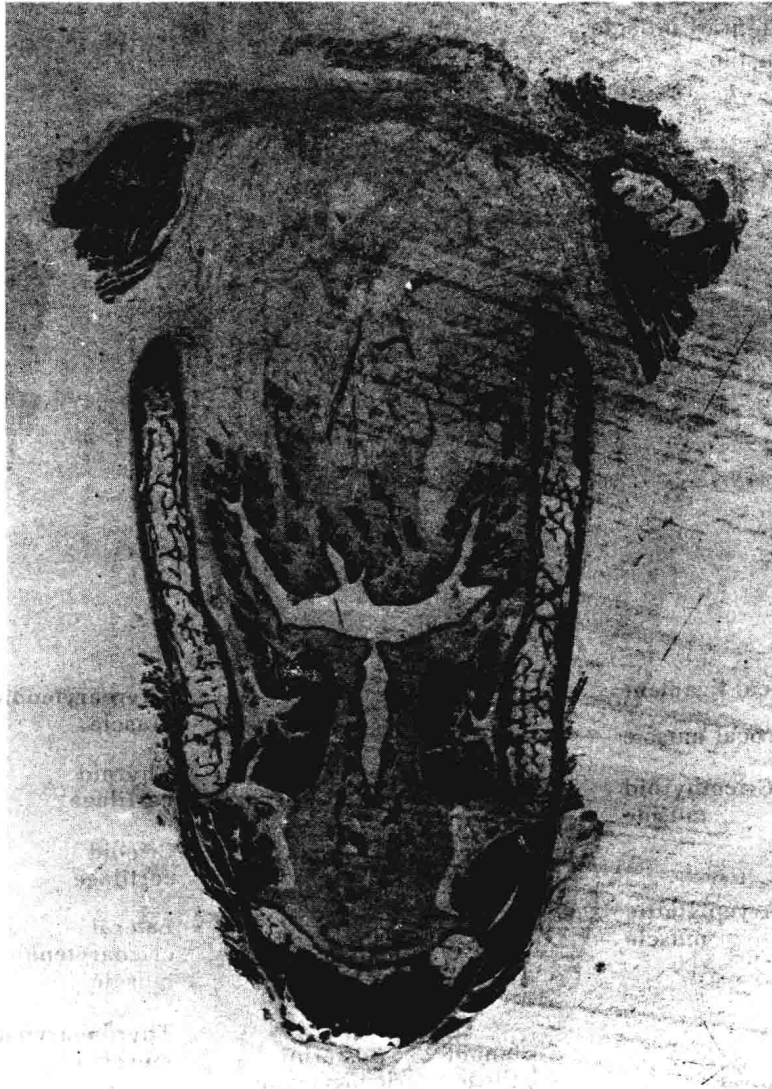


FIG. 1-5

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

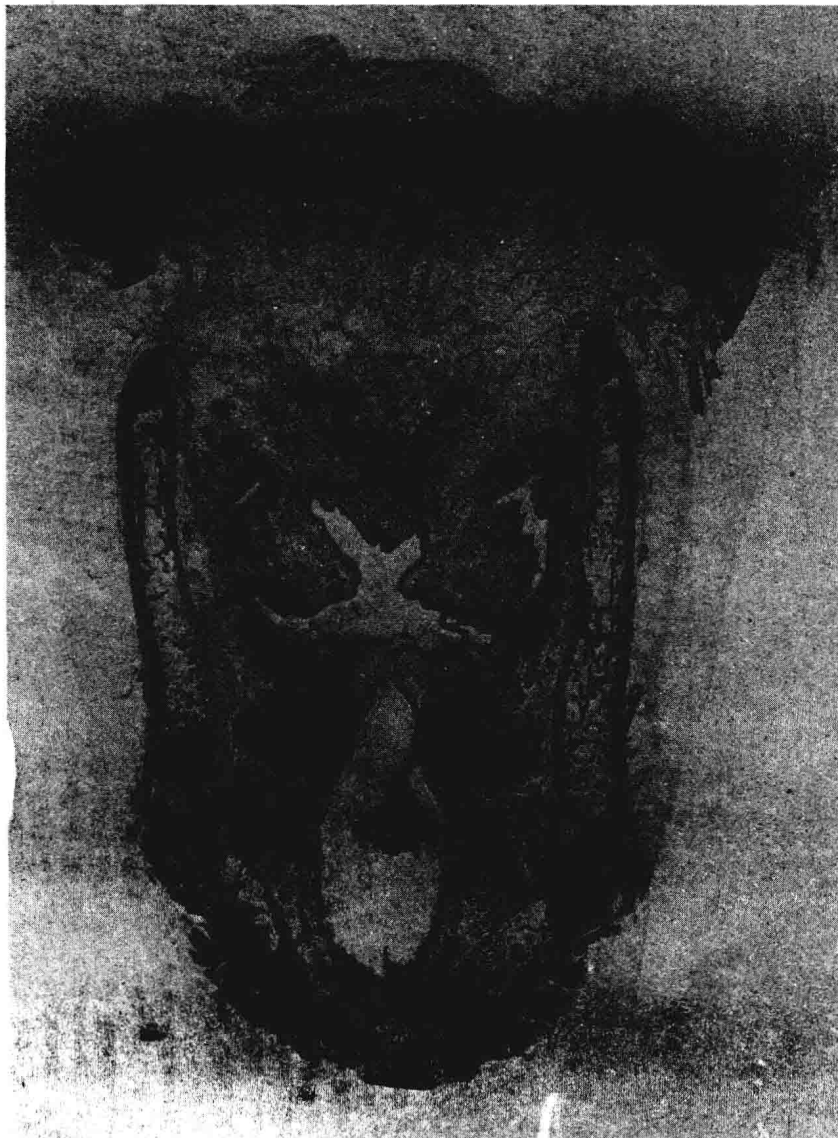


FIG. 1-6

3. Fig. 1-7

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

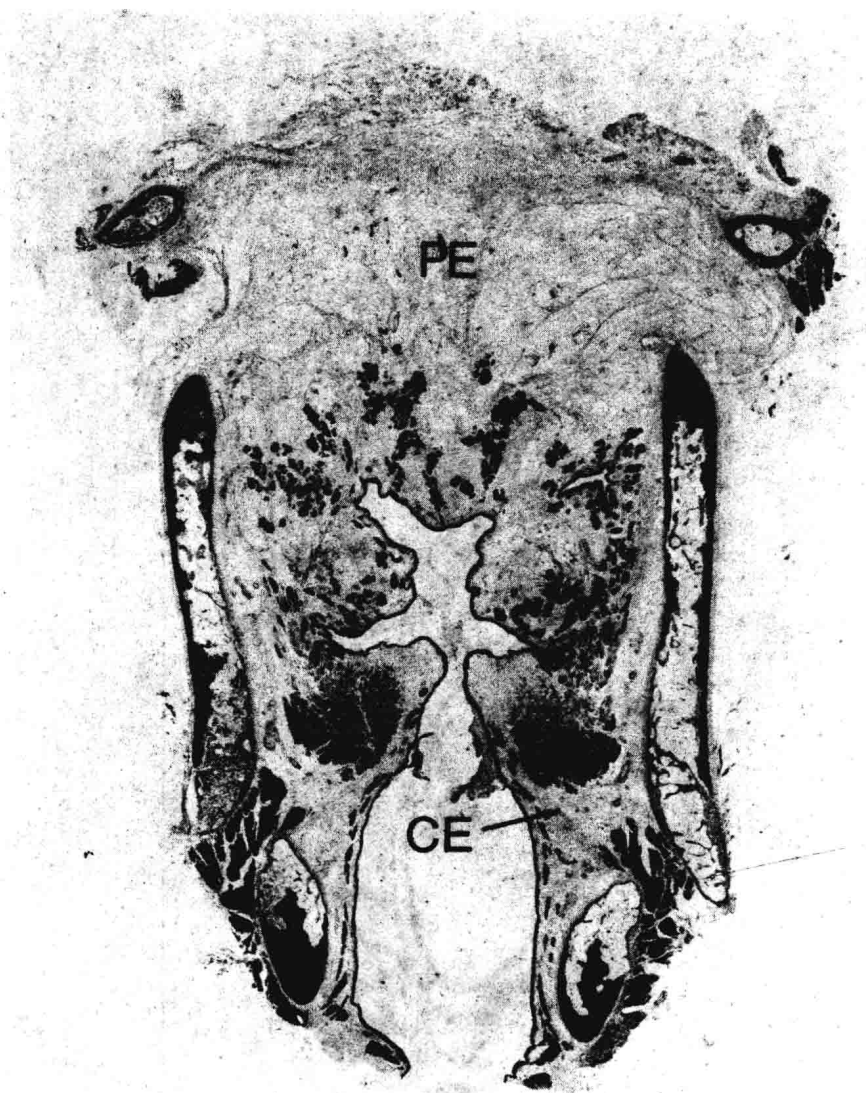


FIG. 1-7

4. Far posterior coronal section of adult male larynx (Fig. 1-8)
- a. Cricoid cartilage (C)
 - b. Arytenoid cartilage (A)
 - c. Cricoarytenoid joint (CA)

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

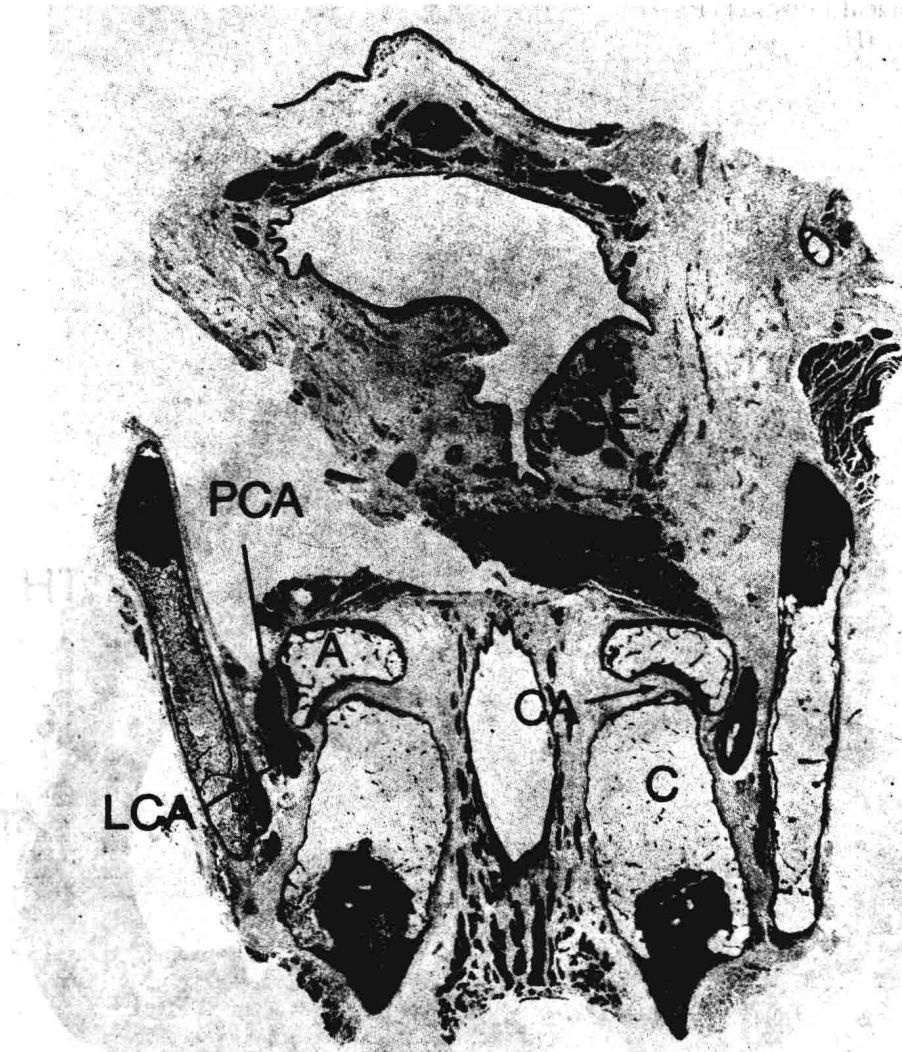


FIG. 1-8

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)

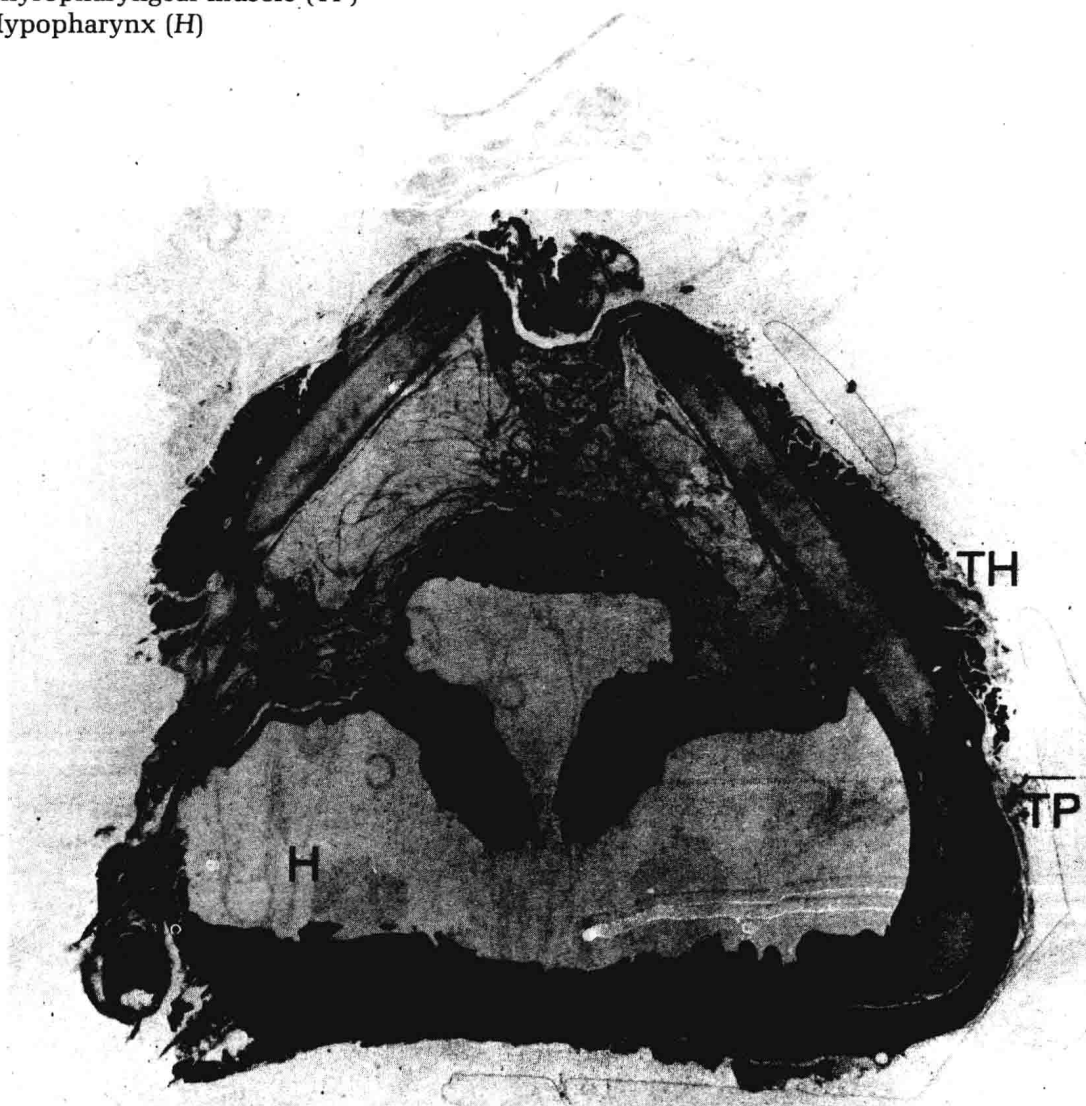


FIG. 1-9