# Gastrointestinal Pathology and Liver Metastasis

# Gastrointestinal Pathology and Liver Metastasis

*Sanjay Kakar, MD*
Professor
Department of Pathology
University of California San Francisco School of Medicine
San Francisco, California

*Ryan M. Gill, MD, PhD*
Professor
Department of Pathology
University of California San Francisco School of Medicine
San Francisco, California

*Amitabh Srivastava, MD*
Member, Memorial Hospital
Attending Pathologist, Memorial Hospital for Cancer and Allied Diseases
Department of Pathology
Memorial Sloan Kettering Cancer Center
New York, New York

*A volume in the series*
**SURGICAL PATHOLOGY:** A CASE-BASED APPROACH TO DIAGNOSIS
*Series Editors*

**SANJAY KAKAR, MD**
Professor, Department of Pathology
University of California San Francisco School of Medicine
San Francisco, California

**RYAN M. GILL, MD, PhD**
Professor, Department of Pathology
University of California San Francisco School of Medicine
San Francisco, California

ELSEVIER

Elsevier
1600 John F. Kennedy Blvd.
Ste 1800
Philadelphia, PA 19103-2899

GASTROINTESTINAL PATHOLOGY AND LIVER METASTASIS ISBN: 978-0-323-82688-4



*Executive Content Strategist:* Belinda Kuhn
*Senior Content Development Specialist:* Himanshi Chauhan
*Publishing Services Manager:* Deepthi Unni
*Project Manager:* Gayathri S/Beula Christopher
*Design Direction:* Amy Buxton


Printed in India

Last digit is the print number: 9 8 7 6 5 4 3 2 1

# Contents

# 1.1 Eosinophilic Esophagitis Versus Reflux Esophagitis

AZFAR NEYAZ AND AATUR DILIP SINGHI

## Case History With Endoscopic Findings

A 45-year-old male presented with dysphagia and odynophagia for the past 6 months. Upper endoscopy showed linear furrows and rings in the middle third of the esophagus (Fig. 1.1.1).

## Microscopic Findings

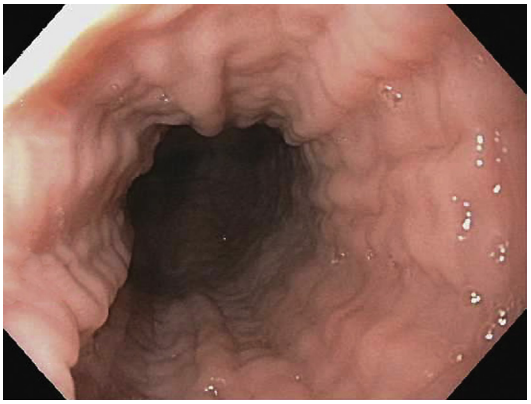
The biopsy showed squamous mucosa with ≥15 eosinophils per high-power field that were concentrated toward the mucosal surface, as well as marked spongiosis and basal cell hyperplasia. A diagnosis of active esophagitis with features consistent with eosinophilic esophagitis (EoE) in the appropriate clinical setting was rendered (Fig. 1.1.2).

## Differential Diagnosis

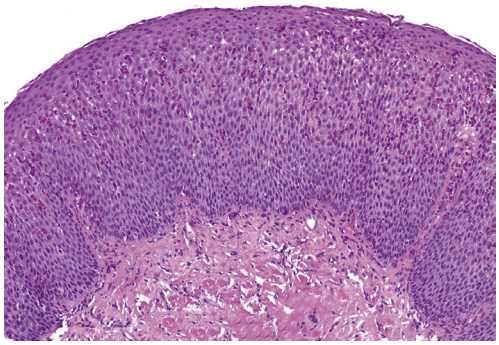
EoE and reflux esophagitis are the two most common causes of an eosinophil-rich inflammatory cell infiltrate in esophageal biopsies. The distinction between these two diagnostic entities is difficult by histology alone because of a marked overlap in morphologic features. Clinical and endoscopic correlation is necessary for an accurate diagnosis.[1,2] It is also important to remember that other causes may give rise to intraepithelial esophageal eosinophilia and include infections (e.g., fungal, viral, and parasitic organisms), eosinophilic gastroenteritis, pill esophagitis, graft-versus-host disease (GVHD), vasculitis, drug hypersensitivity, hypereosinophilic syndrome, celiac disease, Crohn's disease, connective tissue disease, and vesiculobullous disorders.[3,4]

### Eosinophilic Esophagitis

The key pathologic features of EoE are an eosinophil-predominant intraepithelial infiltrate with a peak count of ≥15 eosinophils per high-power field (or ~60 per mm$^2$). The infiltrate can be patchy, and the peak count reflects infiltration in the highest-density area anywhere in the biopsy. Additional findings that are often present and related to the density of the infiltrate include luminal eosinophilic microabscesses, degranulated eosinophils, surface desquamation, basal cell hyperplasia, marked intracellular edema (spongiosis), and lamina propria fibrosis[2,5,6] (Fig. 1.1.3). In general, intraepithelial eosinophilia is more pronounced in EoE than in reflux esophagitis; however, in severe reflux esophagitis,



• **Fig. 1.1.1** The typical endoscopic appearance of eosinophilic esophagitis, which consists of circumferential rings and linear furrows diffusely involving the esophagus.



• **Fig. 1.1.2** Histologic features of eosinophilic esophagitis, which include prominent basal cell hyperplasia, markedly increased intraepithelial eosinophilic infiltrate (typically >15/high-power field), and subepithelial fibrosis that results in dysphagia.