

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



Approach to Esophageal Motility Disorders

A case based review

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- **At the end of this session participants will be able to:**

Evaluate patients presenting with esophageal dysphagia

Select appropriate diagnostic tests

Interpret High-Resolution Manometry (HRM)

Apply Chicago classification v4.0

Differentiate major motility disorders

Choose evidence-based treatment

Clinical case

A 62-year-old man presents with

- Progressive dysphagia for solids and liquids
- Symptoms for 18 months
- Regurgitation of undigested food
- Nighttime cough
- Weight loss(7 Kg)

- No heartburn.

What is the next step?

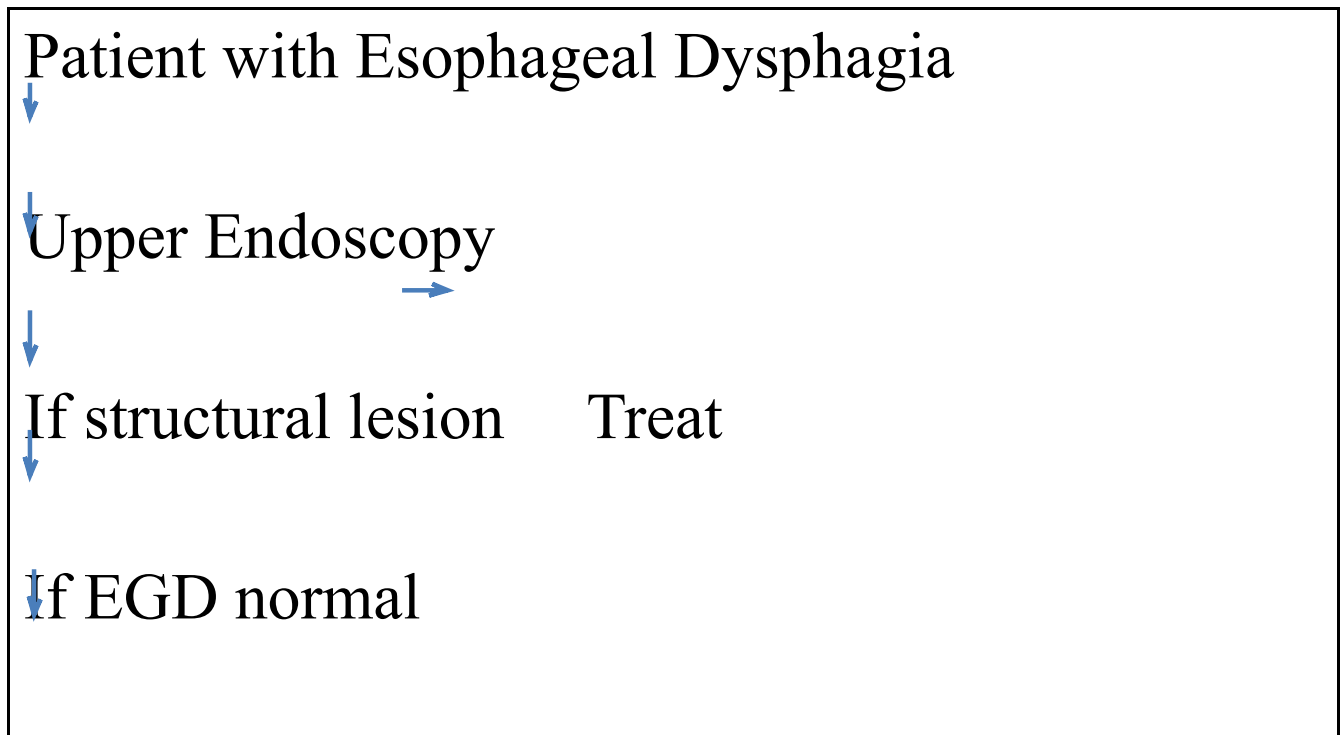
- Proton pump inhibitor
- Upper endoscopy
- Esophageal manometry
- CT scan

Initial Approach to Esophageal Dysphagia

History

- Solid only vs solids + liquids
- Intermittent vs progressive
- Chest pain
- Regurgitation
- Weight loss
- GERD symptoms
- Connective tissue disease

Diagnostic Algorithm



High Resolution Manometry

Why High-Resolution Manometry?

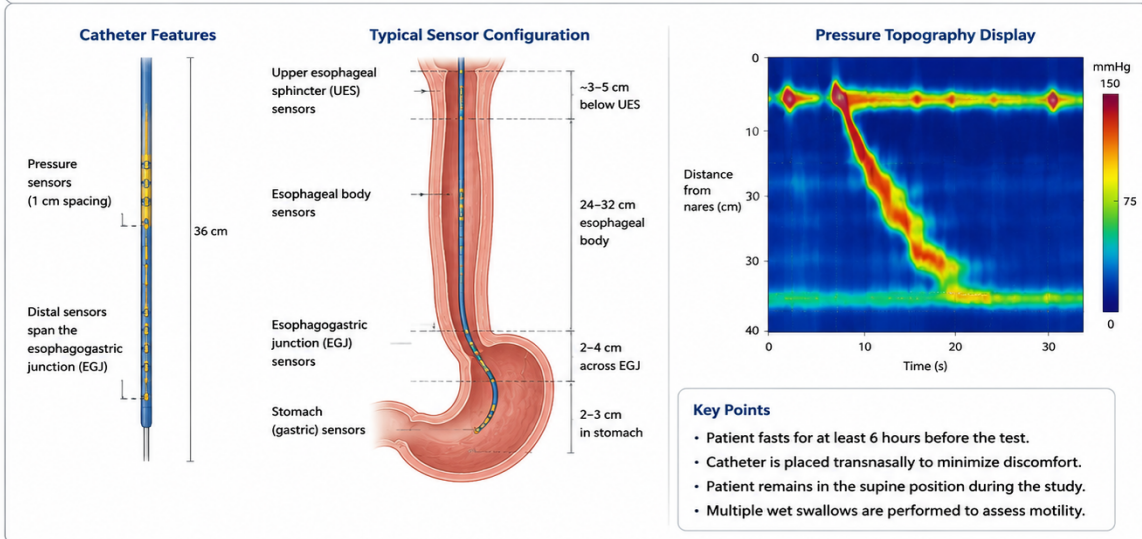
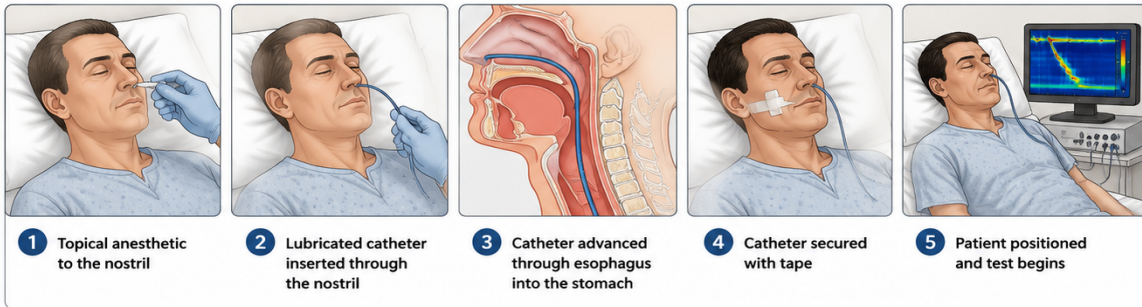
Gold standard test

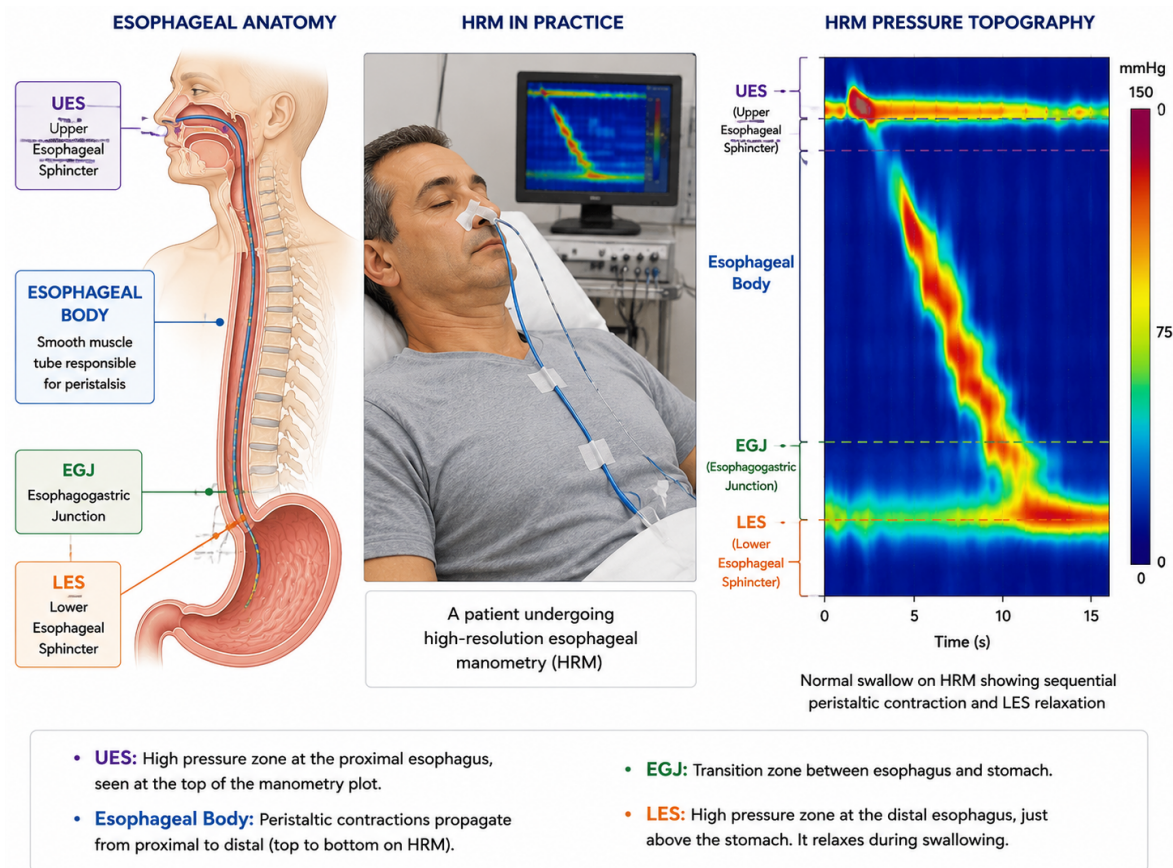
Measures ;

- LES relaxation
- Peristalsis
- Intrabolus pressure
- Contractile vigor

Produces pressure topography plots

High-Resolution Esophageal Manometry (HRM) Catheter Placement





Chicago classification v4.0

Major disorders

- Achalasia
- EGJ Outflow obstruction
- Distal esophageal spams
- Hypercontractile esophagus
- Absent contractility

Minor disorder

Metrics we must know

IRP

Integrated relaxation pressure

DCI

Distal contractile integral

DL

Distal latency

Achalasia

Pathophysiology

- Degeneration of inhibitory neurons (NO and VIP) in the myenteric plexus
- Failure of LES relaxation
- Absent peristalsis
- Progressive esophageal dilatation

Achalasia

Definition

- Impaired LES relaxation
- Absent normal peristalsis

HRM Findings :

- Elevated IRP

Achalasia Types

- Type I

Minimal pressurization

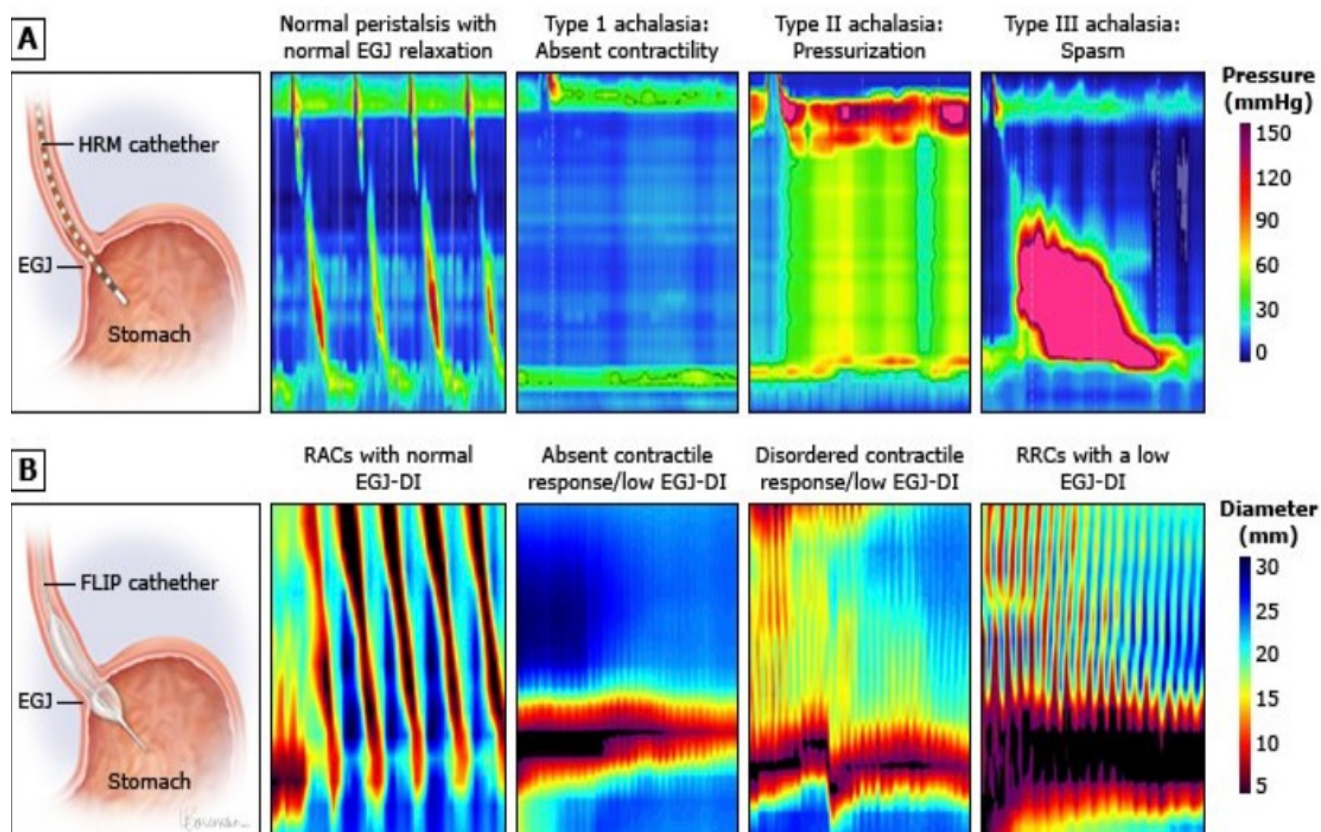
Excellent response to therapy

- Type II

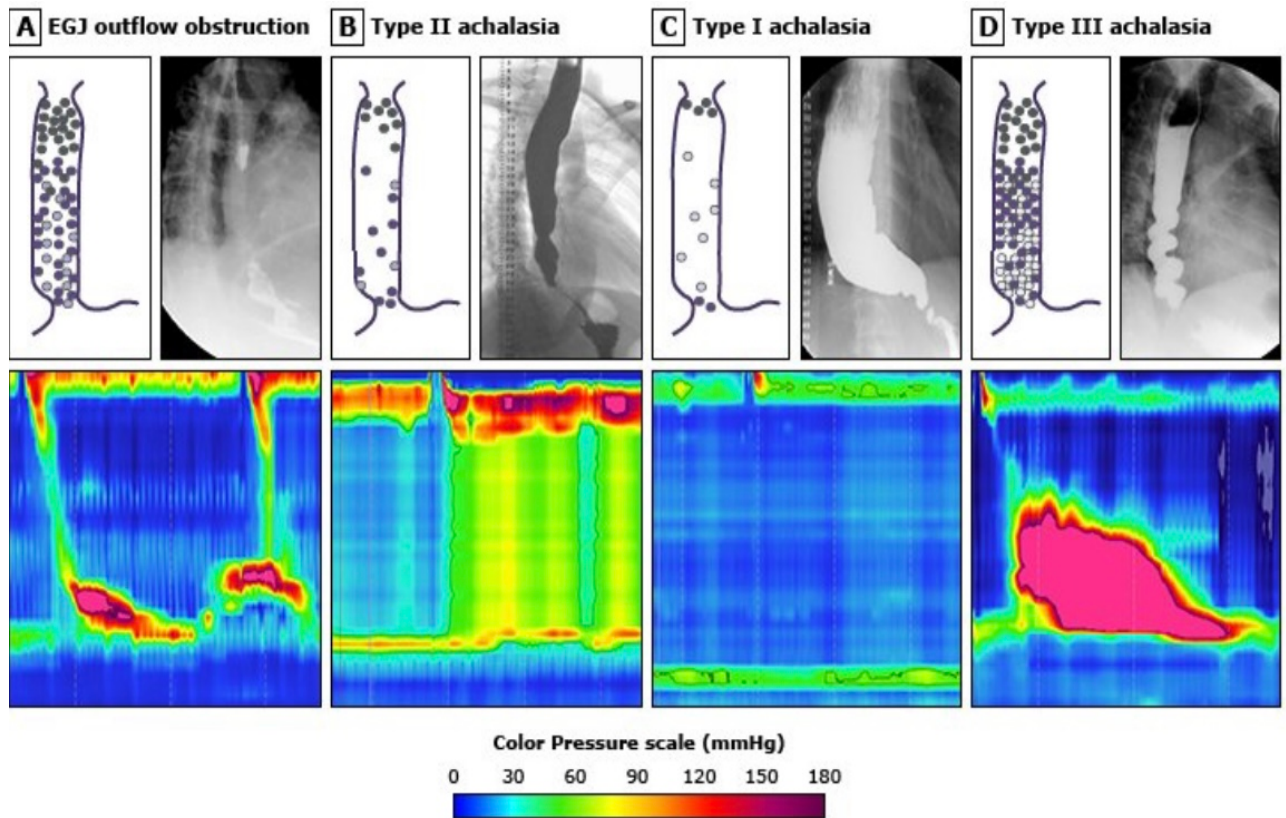
Pan-esophageal pressurization

Best prognosis

- Type III



Contractile patterns of FLIP panometry



Contractile and pressure profiles of
achalasia subtypes

Timed Barium Esophagogram

Role

- Diagnosis
- Measuring emptying
- Follow-up after therapy



Barium esophagogram showing a dilated esophagus and bird's beak appearance typical of achalasia.



Dilation of the esophagus in a patient with achalasia (barium esophagogram)

EndoFlip

Measure

- EGJ distensibility
- Cross-sectional area

Useful

- Equivocal HRM
- During POEM
- Intraoperative assessment

Esophagogastric Junction Outflow Obstruction (EGJOO)

Pathophysiology

- Impaired EGJ relaxation with preserved peristalsis
- May be mechanical or functional
- Diagnosis required supportive evidence (CC v4.0)

Esophagogastric Junction Outflow Obstruction (EGJOO)

HRM Finding

- Elevated IRP
- Preserved peristalsis

Diagnosis requires supportive evidence

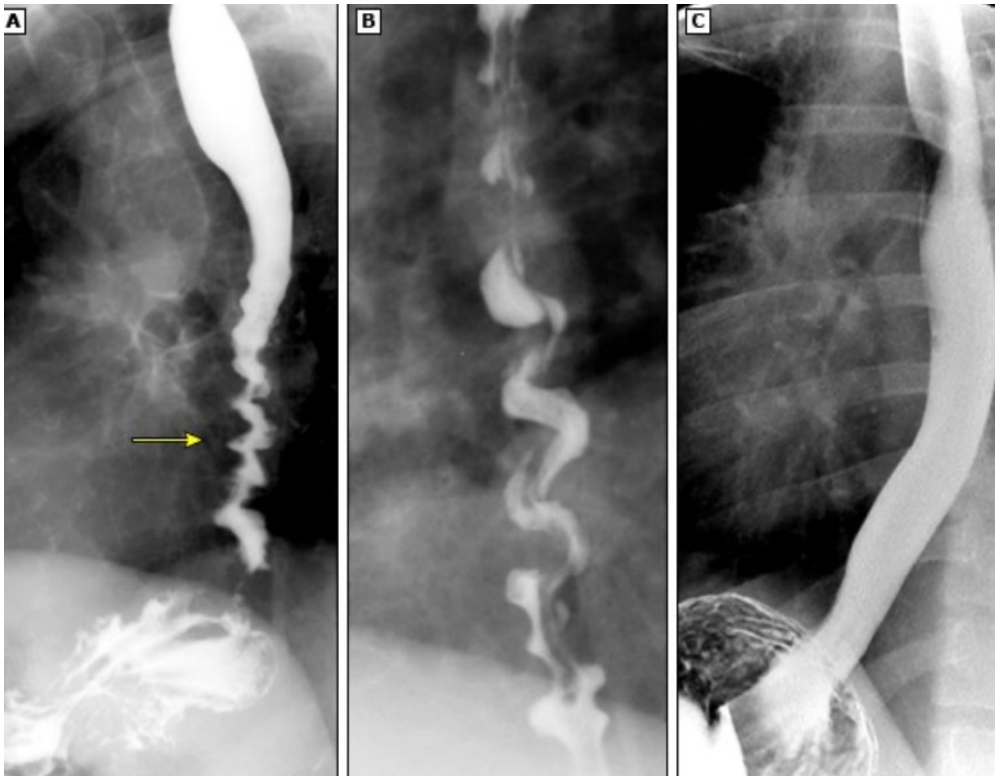
- Timed barium esophagogram
- FLIP

Distal Esophageal Spasm (DES)

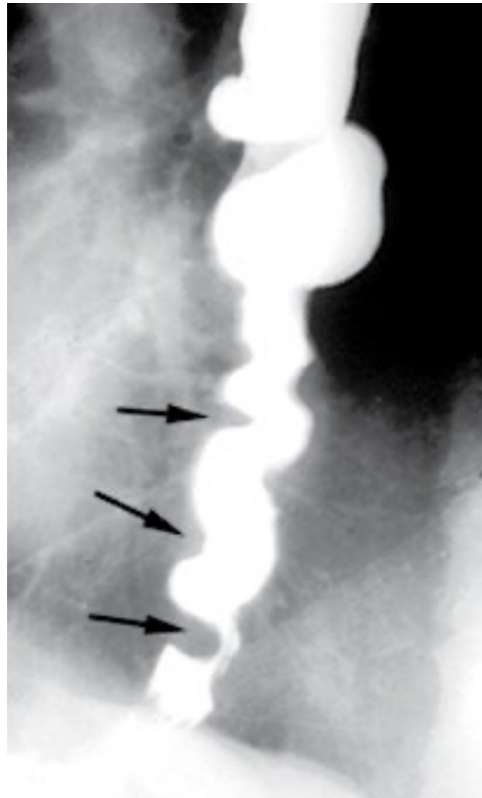
Pathophysiology

- Premature distal contractions due to impaired inhibitory neural pathways
- Normal LES relaxation

Clinical features



DES with corkscrew esophagus on
barium swallow



Distal esophageal spasm

Hypercontractile Esophagus

Jackhammer

Pathophysiology

- Excessively vigorous peristaltic contractions
- Normal LES relaxation

Clinical Features

Hypercontractile Esophagus

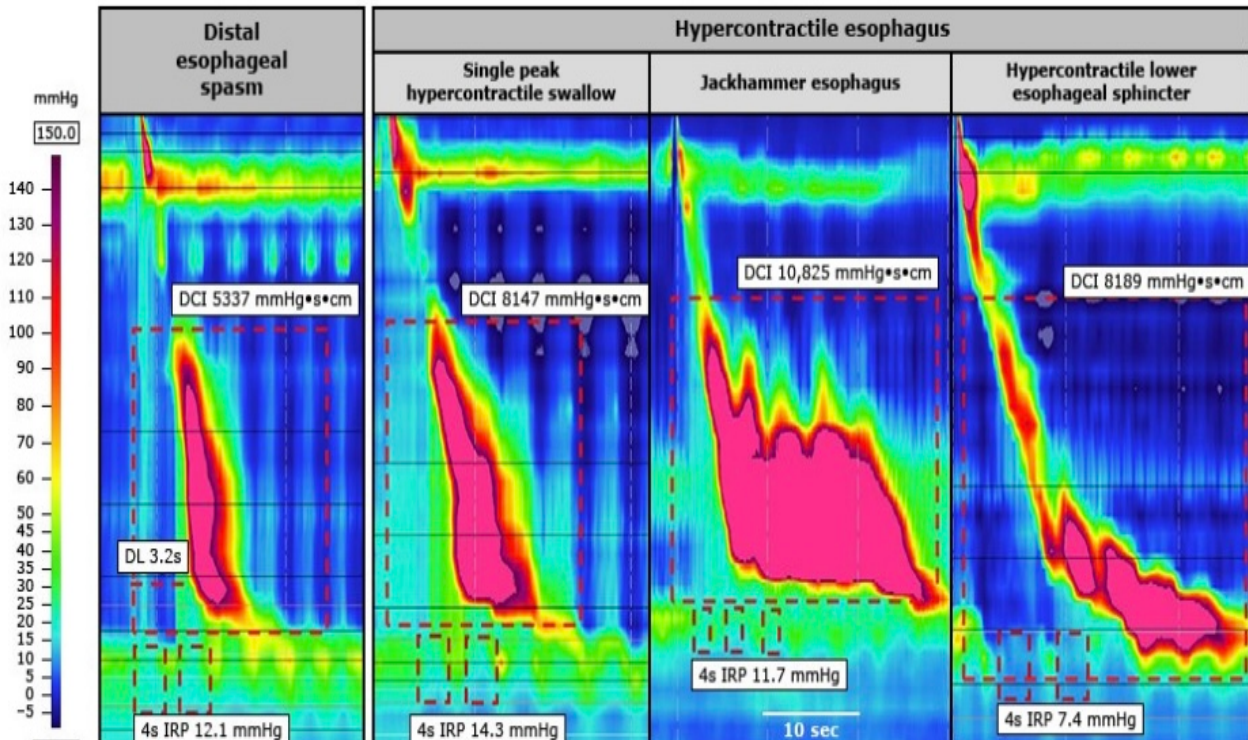
Jackhammer

HRM Findings

- $\geq 20\%$ swallows with DCI > 8000 mmHg.s.cm

Treatment

- Calcium channel blockers
- Nitrates



Disorders of peristalsis with
esophageal spasticity or
hypercontractility

Ineffective Esophageal Motility (IEM)

Most common minor
disorder

Pathophysiology

- Weak smooth muscle

Ineffective Esophageal Motility (IEM)

HRM Findings

- 70 % ineffective swallows

Or

- $\geq 50\%$ failed peristalsis

Treatment

- Manage GERD

FIGURE 1

Absent contractility

Pathophysiology

- Complete failure of esophageal Weak smooth muscle contractions
- Impaired esophageal clearance
- Frequently associated with GERD
- Connective tissue disease

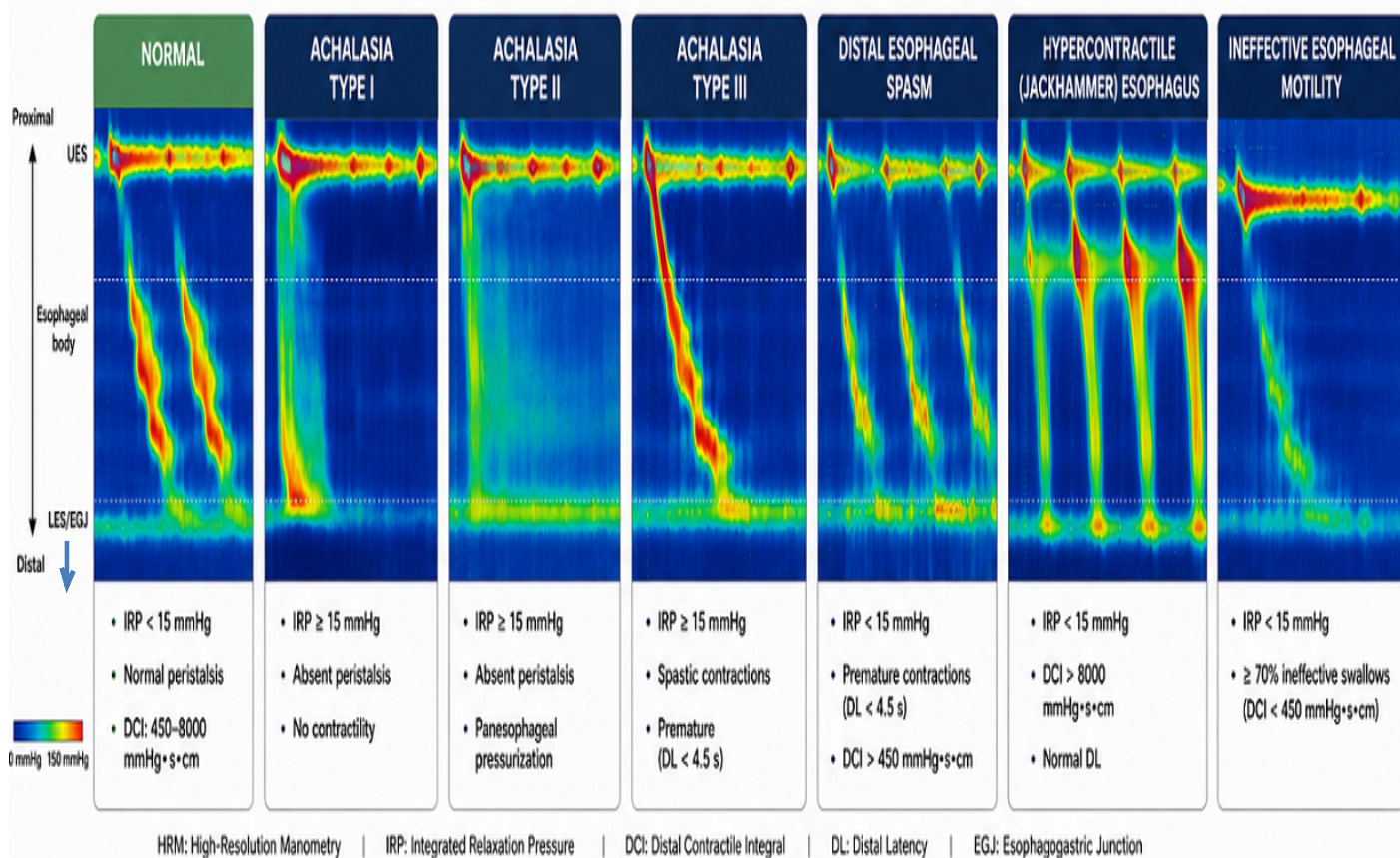
Clinical Features

Absent contractility

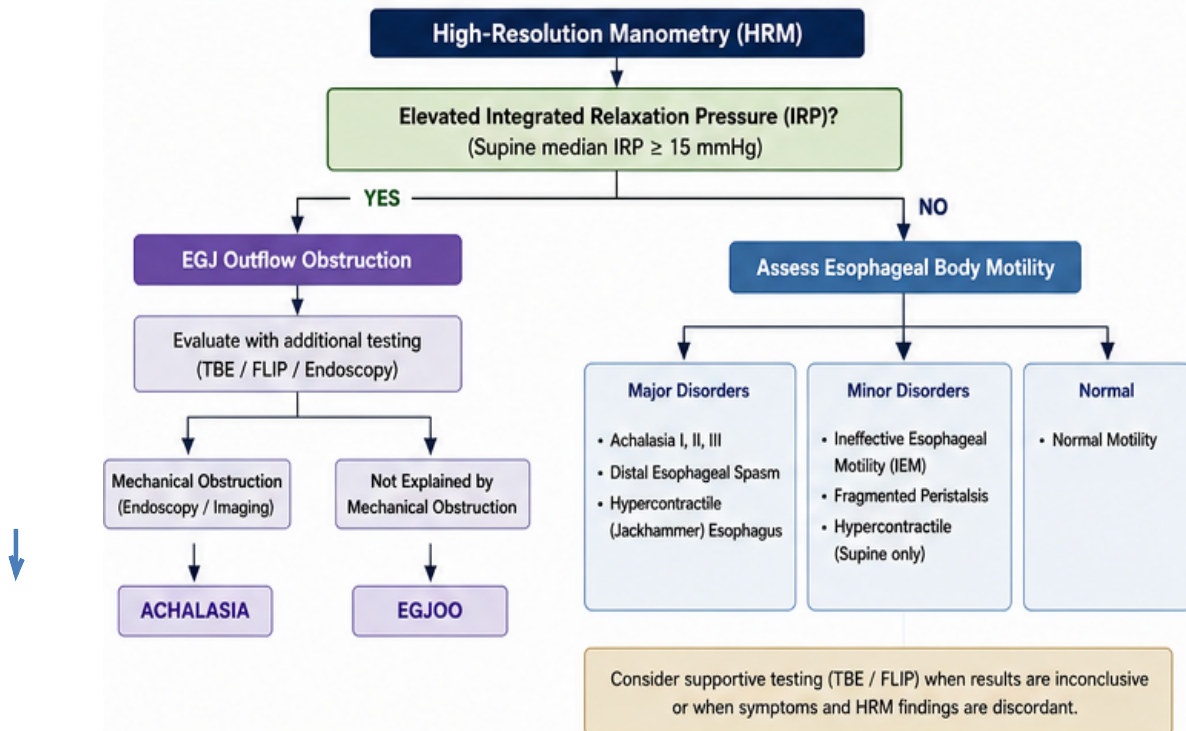
Management

- GERD treatment
- Nutrition
- Avoid antireflux surgery

1. HRM PATTERNS: NORMAL VS MAJOR MOTILITY DISORDERS (CHICAGO CLASSIFICATION v4.0)



2. DIAGNOSTIC ALGORITHM (CHICAGO CLASSIFICATION v4.0)



TBE: Timed Barium Esophagram | FLIP: Functional Lumen Imaging Probe | EGJOO: Esophagogastric Junction Outflow Obstruction

Treatment of Achalasia

Options

- Pneumatic dilation
- Laparoscopic Heller myotomy
- POEM
- Botulinum toxin

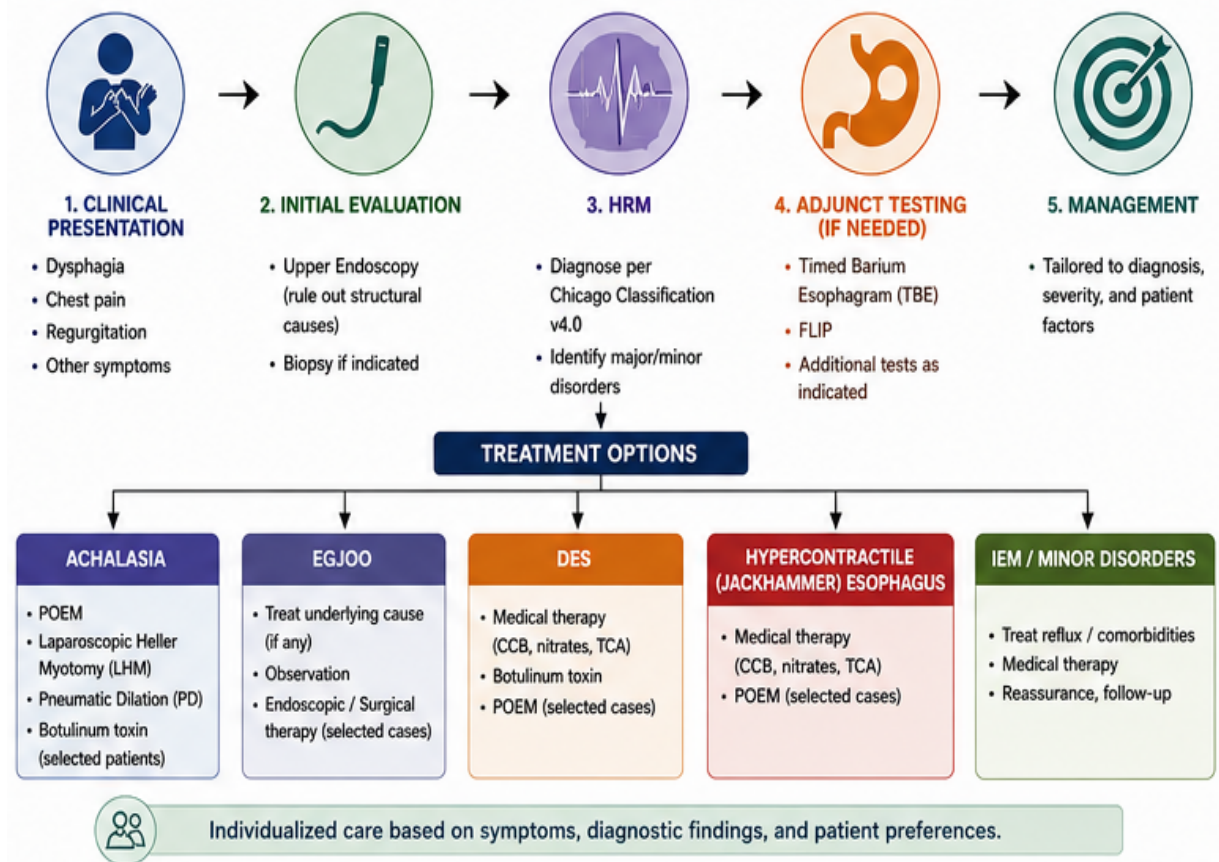
Treatment depends on

- Age
- Achalasia subtypes

Choosing the right therapy

Disorder	Preferred Treatment
Type I	PD / Heller / POEM
Type II	PD / Heller / POEM
Type III	POEM Preferred
EGJOO	Individualized
DES	Medical $\pm$ POEM
Jackhammer	Medical first

3. INTEGRATED DIAGNOSTIC & MANAGEMENT FLOWCHART



Back to our patient

Clinical case

A 62-year-old man presents with

- Progressive dysphagia for solids and liquids
- Symptoms for 18 months
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- Weight loss(& Kg)
- No heartburn.

Back to our patient

EGD

Normal



HRM

Type II Achalasia



POEM performed

Symptoms resolved

Common Pitfalls in Esophageal Motility Disorders

- Not excluding mechanical obstruction before
↓ HRM
- Overdiagnosing EGJOO
- Treating HRM findings instead of symptoms
- Forgetting supportive testing (Timed Barium
↓ Esophagogram /Flip)

Practical Pearls

- Endoscopy first



- HRM confirms diagnosis

- Use CC v4.0 strictly



- Confirm EGJOO before treatment

- FLIP complements HRM

Take home messages

- Dysphagia requires systemic evaluation.
- HRM is the diagnostic cornerstone after a
↓ normal endoscopy
- Chicago Classification v4.0 should guide interpretation
- Achalasia subtypes influences treatment
↓ selection.
- Supportive testing (Timed barium Esophagogram and FLIP) is essential when HRM findings are inconclusive



THANK YOU

for your attention.

I appreciate your time and consideration.
Feel free to reach out if you have any questions.

