

## HIATUS HERNIA

*Definition: protrusion of any abdominal structure into thoracic cavity via widened hiatus*

### Aetiology

(i) Most **acquired** (ii) some **congenital (widened hiatus + increased intra-abdominal pressure)**

Risk factors: **FHx/age>50/BMI>25**

### Anatomy & Classification

Hiatus= R+L pillars of right crus/phreno-oesophageal ligament holds SCJ in normal anatomical position

**Type I SLIDING: GOJ migrates upwards** (POL attenuated but intact; sliding as gastric wall is part of sac)

**Type II TRUE PEH: GOJ in normal position + fundus migrates upwards**

**Type III COMBINED: elements of I+II** (ie very lax POL+hiatus)

**Type IV: OTHER ORGANS IN SAC** (large defect permits transverse colon/omentum/small bowel)

### Clinical Features

Type I: GOR symptoms || Type II: often no reflux<sub>(AoH reconstitutes)</sub> || Type III: obstructive symptoms

Natural history: progressive enlargement/gastric volvulus/strangulation and necrosis

Cameron's ulcers/erosions: mucosal damage in repetitive back and forth movement

**(1) Obstructive** (oes compression by fundus + angulation):

(i) post-prandial pain/fullness/bloating → relieved by vomiting but may only retch

(ii) dysphagia/odynophagia/regurgitation

**(2) Reflux:** Type I<sub>(often improve in Type II as oes compression by fundus + angulation)</sub>

### Imaging

CXR: retrocardiac soft-tissue opacity; air-fluid level in PEH

Barium: anatomy (GOJ/hernia size/oes shortening) + function (dysmotility/motility disorder)

CT with oral contrast

OGD: Cameron's ulcers/erosions

Manometry: identify motility disorders precluding total fundoplication

pH studies/impedence: identifies Type I's in whom fundoplication beneficial

### Operative Principles

*Indications: (i) all PEH fit enough (mortality 1% elective vs 30% emergency) (ii) TYPE I symptomatic GOR (iii) Bariatric op*

1. Completely excise sac (release oesophageal tethering)

2. Reduce stomach and 2-3cm tension-free distal oesophagus brought infradiaphragmatically

3. Oesophageal lengthening (dissect/gastroplasty): inflammation shortens oesophagus → tension → recurrence

4. Repair hiatus (suture= 22% recurrence; biologic mesh less recurrence but infection/erosion risks)

5. Fundoplication:

### Approaches

1. **TRANSTHORACIC:** excellent for sac and oesophagus || need chest drain/single-lung vent/high morbidity so obsolete

2. **OPEN ABDOMINAL:** less morbidity/no need for chest drain/single-lung vent || cannot mobilise/lengthen oesophagus

3. **LAPAROSCOPY:** combines positives of both

*\*Post-op contrast studies not essential; only severe dysphagia or suspect leak\**

### Outcomes

**Recurrence:**

Pre-op: BMI + large hernia

Operative: incomplete sac excision/incomplete reduction with oes tension/short IA oes/poor hiatal repair

Post-op: sudden IAP

## GASTRIC VOLVULUS

*Definition: rotation of stomach >180° around fixed axis of rotation → **organo-axial** (line from cardia to antrum)  
→ **mesenterico-axial** (line across body)*

### Aetiology:

1°: no causative condition

2° mostly PEH/connective tissue disorders/anterior abdo wall defects including <sup>Morgagni's hernia</sup>

### Clinical features

**Borchardt's triad:** (i)epigastric pain (ii)retching without vomiting (iii) inability to pass NG

Proceeds to **strangulation** and **gastric necrosis**

### Imaging

CXR: double-bubble (retrocardiac soft tissue opacity/air-fluid level +2<sup>nd</sup> air-fluid level below diaphragm)

Barium: uncertain diagnosis; hold-up at level of volvulus

CT oral contrast: obstruction/strangulation (omit oral in emergency)

### Emergency Management

RESUS: fluids, abx

IMMEDIATE: NBM + NG (decompresses? Will determine if laparoscopy or laparotomy)

HISTORY: pain/retching/ PMHx: hiatus hernia/GORD symptoms Medx: PPI FHx: HH SHx:

EXAMINATION: sepsis + chest (bowel sounds) + abdo

INVESTIGATIONS: Bloods (FBC, U&E, LFT, Coag, G&S, ABG) + ECG (pre-op) + eCXR → CTAP (non contrast)

MANAGEMENT: (i)Stable → OGD within 24 hours (?gastric ischaemia)

(ii)Unstable → laparotomy/laparoscopy (reduce/?resect/gastropexy+close hiatus+fundo)