Corrosive injury of the esophagus

Corrosive injuries of the esophagus are caused by ingestion of strong acid or alkali which is more serious, it could be accidental especially in children below 5 years old or suicidal or homicidal especially in adults. The commonest corrosives are detergent and the patient usually presented with:

1. Sever oral pain and ulceration of the mouth, pharynx and larynx.
2. Drooling and excessive salivation
3. Inability to swallow or to drink
4. Hoarseness of voice
5. Aphonia, dyspina, and stridor.

Management:

1. Careful history to know the type of the corrosive.
2. Chest x-ray.
3. Barium swallow and esophagoscopy could be early done if there is no evidence of perforation.

Treatment:

1. Induction of vomiting and dilution are forbidden.
2. Admittion to hospital.
3. Nil by mouth.
4. Correction of fluid and electrolytes disturbances.
5. Broad spectrum antibiotics.
6. Steroids to prevent fibrosis and later stricture formation.
7. Anti-acids.

These patients require long term follow-up in term of frequent dilatation of any future esophageal stricture and possible resection of undilatable long strictures and these patients with corrosive injuries have more risk to develop carcinoma of the esophagus.

Gastro-Esophageal Reflux Disease (GERD):

It s due to reflux of gastric juice (acid and pepsin) up t the esophagus leading to inflammation (esophagitis) at the lower end of the esophagus, this is mainly due to failure of the anti reflux barrier at the esophago gastric junction. This lead to chronic mucosal inflammation which if left untreated will lead to ulceration and subsequent fibrosis and stricture formation.

Predisposing factors:

- Obesity.
- Aging process.
- Hiatal hernia.
- Previous surgery at the gastro esophageal junction.
Clinical manifestation:
It has a wide range of presentation depending on the:
- Chronicity.
- Severity.
- Age of the patient.
In adult it might present with sever epigastric pain exaggerated by supine position specially after heavy meals and relieved by sitting position, also regurgitation, heart burn specially with Alcohol intake, fatty meal and spices.
Dysphagia and chronic anemia might occur in long standing cases.
In pediatric age group GERD presented usually with failure to thrive of the baby, growth retardation, chronic anemia, repeated vomiting and frequent chest infection due to aspiration, and the common cause in pediatric age group is Hiatal hernia which believed to be caused by congenital short esophagus.

Diagnosis:
- Barium swallows in erect position with or without trendlenburg maneuver.
- Gastro esophago-duodenoscopy(OGD)
- 24hour PH monitoring of the esophagus.

Treatment:
Treatment of GERD usually medical especially in adults while in pediatric age group surgical treatment is the preferred option.
Medical treatment include: weight reduction, diet regulation (no smoking, no alcohol intake, or fatty food), sleeping in a semi sitting position, and in sever cases medication required includes: antiacids, H2 receptor blocking agents, proton pump inhibitors…etc.
Surgical treatment is indicated when the medical treatment fail or on development of complications(e.g. stricture formation) and in pediatric age group an includes a variety of what called as antireflux procedures(Belsy Mark IV, Nissen Funduplication, Collis Funduplication and Hill repair) all these operations aiming to restore the normal gastro-esophageal reflux barrier.

Hiatal Hernia:
It is a herniation of part of the stomach through the esophageal hiatus to the thoracic cavity.

Types:
- Sliding (85%).
- Rolling (Para esophageal type) (10%)
- Mixed type (5%).

Causes:
It could be congenital to acquired causes.

Clinical manifestation:
These patients usually presented as a cases of gastro esophageal reflux disease with or without pressure symptoms (dyspnia) due to herniation of large part of the stomach into the chest.
Diagnosis:
Barium swallow, CT scan.

Treatment:
Medical: as in GERD. While failure of medical treatment and development of complications requires surgical intervention through either thoracic or abdominal approach aiming to reduce the hernia narrowing esophageal hiatus and restoring the gastro esophageal junction geometry.

Tumors of the esophagus

It can be:

**Benign tumors:**
- papilomas
- polyps
- lipomas
- fibromas
- leiomyomas
- duplication cyst.
- Foregut cyst.

Usually affecting young age groups with long term history of Dysphagia. Treatment always surgical in symptomatic patients.

**Malignant tumors of esophagus:**

**Primary:**
Carcinoma of the esophagus is a common tumor with high predilection in certain geographical areas (esophageal belt) which includes the northern part of Iraq, Iran and southern parts of Russia, with equal incidence in both sexes affecting people usually in their third decade of life.

**Etiology:**
1. Genetic factors.
2. Carcinogens like smoking, alcohol peveriges…etc.
3. Certain premalignant conditions like long term reflux esophagitis, Barrett’s esophagus, and history of corrosive injuries.

**Pathology:**
50% in the lower third of the esophagus, 17% in the middle third (thoracic part) and 33% in the lower esophagus. It’s usually sequamous cell carcinoma in origin with some adenocarcinomas at the lower esophagus.
Carcinoma of esophagus can be spreaded either through local invasion to the adjacent organs e.g. trachea of the lung or through lymphatic’s to the regional lymphnodes(mediastinum, Para aortic and deep cervical and supraclavicular lymph nodes). While haematogenous spread this is rare mainly through portal circulation to the liver.
Clinical features:
Patient usually middle age male presenting with:
1. Progressive Dysphagia starting to solid and then to liquids.
2. Progressive weight loss, catchaxia, dehydration, and anemia.
3. repeated chest infection due aspiration pneumonitis or development of malignant Tracheo-esophageal fistula.

Diagnosis:
1. radiological: by
   - Plain chest x-ray or contrast barium swallow.
   - CT scan and MRI may be of help specially in staging and diagnosis of distant metastasis.
   - Abdominal ultrasound to exclude distant metastasis.
2. Esophagoscopy: to confirm the diagnosis by taking biopsy and to know the level of the tumor.
4. Biochemical and blood studies for anemia and electrolyte disturbances.

Treatment:
Most of the cases with carcinoma of esophagus are advanced cases at time of diagnosis, and all surgical operations proved to be palliative if feasible. Other modalities of treatment like deep x-ray therapy and chemotherapy also applicable. Surgical treatment can be either:
1. palliative
   To facilitate swallowing specially in advanced cases mainly in form of :
   - bypass conduits(colonic or iliac conduit)
   - Endoscopic stenting like (Mousseau- Barben celisten tube or souttar tube).
   - Self expandable recent stents.
   - Feeding jejunostomy or gastrostomy in advanced cases.
2. definitive surgical treatment:
   the principle depend on resection of the affected segment of the esophagus with good healthy margin and replacement by either gastric tube or colonic interposition to restore the continuity of the elementary tract providing that the patient is operable(fit for operation) and had no distant metastasis. The approach for operation depends on the level of the tumor and this could be:
   - Left lower thoraco-abdominal approach for carcinoma of the lower third of the esophagus and cardiac.
   - Ivor lewis esophagectomy for carcinoma of the middle third of esophagus which includes upper midline abdominal incision for mobilization of the stomach and right thoracotomy.
   - Trans-Hiatal esophagectomy for upper third of the esophagus without opening the chest with direct anastomosis to the neck. This approach recently recommended for all levels of CA esophagus.
   - Modified McKeowen or tri-incisional technique for CA of the upper third of the esophagus, this includes abdominal right thoracotomy and left anterior neck incision.
Miscellaneous

**Esophageal Diverticula:**
Diverticulum is a pouch in the gastro intestinal tract.

**Types:**
- Pulsion diverticulum: which is a herniation of the mucosa through the muscular coat at the site of entrance of blood vessel or muscle weakness (Zenker’s diverticulum or what is called as pharyngeal pouch in the upper part of the esophagus, and epiphrenic diverticula at the lower third of the esophagus) and this type of diverticulum usually associated with spastic motility disorders of the esophagus.
- Traction diverticulum: usually associated with chronic inflammatory lesions in the lung that pulls the esophagus by chronic fibrosis (TB)

**Clinical presentation:**
It could be asymptomatic and discovered accidently or causing repeated chest infection.

**Diagnosis:**
Barium swallows esophagoscopy.

**Treatment:**
Surgical excision.

**Plummer Vinson syndrome (Paterson Kelly syndrome)**
The patient is usually a middle age women complaining of difficulty in swallowing and is associated with following clinical features:
- Atrophy of the tongue.
- Angular stomatitis.
- Koilonychia (spoon shaped finger nails).
- Hypochromic anemia.
- Achlorhydria.

**Treatment:**
Surgical dilatation of the stricture and iron replacement (ferrous sulphate tablets with other vitamins) this will help of the regeneration of the desquamated epithelium of the mucous membrane of the esophagus.