DISEASES OF OESOPHAGUS

DR MANPREET SINGH NANDA
ASSOCIATE PROFESSOR ENT
MMMC&H SOLAN
U_tell_me_80@yahoo.co.in

PERFORATION/RUPTURE OF OESOPHAGUS

- **Etiology**
- Iatrogenic - instrumental trauma during oesophagoscopy/biopsy/dilatation
- Malignancy
- Penetrating injuries - pointed FB, cut throat, gun shot
- Spontaneous rupture - mostly lower 1/3rd during vomiting. Boerhave's syndrome - all layers
- **C/F**
- Cervical oesophagus rupture - pain in neck, supraclavicular region, dysphagia, odynophagia, emphysema, fever
- Thoracic oesophagus rupture - more dangerous. Retrosternal pain,chest pain, high fever, shock , emphysema

- Hamman's sign – Crunching sound over heart because of air in mediastinum
- **Diagnosis**
- X Ray Chest/Neck – surgical emphysema/ widening of mediastinum/ pneumothorax/ gas under diaphragm/ pleural effusion
- Barium swallow – 3-4 days laterto localise
- **Treatment**
- NBM
- RT feed/ gastrostomy
- IV antibiotics
- Cervical – conservative, drainage if suppuration

- Thoracic – surgical repair if within 6 hrs, after 6 hrs – no repair possible
- Drainage of pleural cavity
- **Complication**
- Death due to mediastinitis/septicaemia
- If treatment delayed more than 24 hrs - > 50% mortality due to mediastinitis

CORROSIVE BURNS OF OESOPHAGUS

- **Etiology**
- Accidental – children
- Suicidal/alcoholic/psychiatric – adults
- Acids/alkalies (more destructive,penetrate deep)
- Severity depends on nature, amount, concentration and duration
- **Stages** – acute necrosis -> granulations -> strictures

- **C/F**
- Burns on lips, oral cavity, oropharynx
- Dysphagia/odynophagia
- Drooling of saliva
- Hoarseness/stridor
- Shock
- Mediastinitis
- **Diagnosis**
- X Ray chest/neck
- Barium /oesophagoscopy (not immediate but 2 days)

- **Treatment**
- **Immediate**
- ICU/NBM/IV fluids
- RT feed/gastrostomy
- Wash and irrigate eyes and mouth with cold water
- Antibiotics/steroids/analgesics – parentral
- Tracheostomy if stridor
- Only for mild burns – neutralize with weak acid or alkali (within 6 hrs)

- **Delayed**
- Oesophagoscopy within 2 days and repeat every 2 weeks – to know site and extent. Perforation
- Dilatation of strictures
- Oesophageal reconstruction

BENIGN STRICTURES

- **Etiology** - when muscular layer is damaged
- Trauma - FB/ injury
- Iatrogenic - surgery, RT, NG tube, pills
- Corrosive burns
- Infections
- Ulcers - reflux, diptheria, typhoid
- Drugs - anti diuretic, anti arthritic
- Congenital - lower 1/3rd

- **C/F**
- Impaction of FB
- Dysphagia 1st with solids
- Pain
- Regurgitation/coughing
- Malnourished/anaemia
- **Diagnosis** – barium swallow/ oesophagoscopy / Chest X Ray

- **Treatment**
- NBM
- Gastrostomy
- Oesophagoscopy and repeated endoscopic dilatation with bougies under direct vision
- Chevalier Jackson bougies
- Balloon dilatation/wire guided rigid dilatation
- Excision and reconstruction – excise the stricture segment and reconstruct with stomach/colon/jejunum

MOTILITY DISORDERS

- **Hypermotility disorders**
- **Cricopharyngeal spasm** - failure of UES to relax
- **Diffuse oesophageal spasm** - non peristaltic contractions of oesophagus due to degeneration of nerve process.
- Barium swallow - rosary bead or cork screw type of appearance
- **Nut cracker oesophagus** - peristaltic contractions of oesophagus

GERD

- Hypomotility disorder with abnormal reflux of gastric contents through oesophagus into laryngopharynx causing laryngeal and pharyngeal symptoms
- Mc cause of laryngitis, non productive cough and non cardiac chest pain
- **Etiology**
- Inappropriate functioning of LES (low tone)
- Tobacco/alcohol/fatty food/chocolates/drugs
- Pregnancy
- Hiatus hernia/ post nasal drip/ psychological

- **C/F**
- Heart burn
- Regurgitation
- Dysphagia/odynophagia
- Angina like chest pain worsens after sublingual nitroglycerine
- Extra oesophageal reflux symptoms – FB sensation throat, hoarseness of voice, dental erosion, throat clearing
- **Signs** – post laryngitis – congested arytenoids, interarytenoids, nasal congestion

- **Types**
- Non erosive reflux – only symptoms, no signs
- Reflux oesophagitis- mucosal changes
- Barrett's oesophagus
- **Diagnosis**
- Clinical
- Oesophagoscopy/laryngoscopy
- 24 hrs double ph monitoring of pharynx and oesophagus
- Barium swallow
- Chest X Ray

- **Treatment**
- Life style modifications
- Antacids – liquid
- Proton pump inhibitors – rabeprazole (80%)
- H2 receptor antagonists - ranitidine (50%)- healing
- Pro kinetic drugs – domperidone (increase clearance)
- Surgery – nissen's fundoplication
- **Complications** – oesophagitis, laryngitis, OME, aspiration pneumonia, carcinoma

BARRETT'S OESOPHAGUS

- Pre cancerous condition affecting distal oesophagus due to change in its normal stratified epithelium to intestinal columnar epithelium
- Can lead to adenocarcinoma (if > 8 cm long)
- Seen in GERD due to severe inflammation
- Smokers
- **Diagnosis** - barium swallow/oesophagoscopy
- **Treatment** - anti reflux/ regular endoscopy to detect adenocarcinoma early

CARDIAC ACHALASIA/CARDIOSPASM

- **Pathology**
- Absence of peristalsis in body of oesophagus
- High resting pressure in LES which dont relax
- Spasm of LES leading to retention of food
- **Etiology**
- Hereditary
- Infective – chagas disease due to trypanosomiasis (cardiomegaly, megacolon, achalasia)
- Auto immune
- Degeneration of auerbach's plexus

- **C/F**
- Age gp 30-60 yrs, both sexes equal
- Dysphagia more for liquids than solids (as solids pass due to weight)
- Regurgitation
- Chest pain / retrosternal or epigastric fullness
- Weight loss
- IDL – pooling of saliva
- **Complications** – nutritional deficiency/ pulmonary complications/ oesophageal malignancy

- **Diagnosis**
- Barium swallow with fluoroscopy
- Smooth and regular narrowing of lower oesophagus – rat tail appearance/ bird beak appearance/ pencil tip appearance
- Loss of peristalsis in distal oesophagus
- Dilated oesophagus
- Manometry
- Low pressure at body of oesophagus, high pressure at LES
- Flexible endoscopy

- **Treatment**
- Endoscopic pneumatic dilatation - tears LES muscle hence reduces LES pressure. Can cause perforation
- Modified Heller's operation - incision of circular muscle fibres of lower oesophagus
- Inj botulinum toxin in LES
- Calcium channel blockers - relax smooth muscles.
- Nitrates

BENIGN NEOPLASM

- Rare
- Seen in younger age gp
- **Leiomyomas** - 66%. Treatment - external surgical excision with thoracotomy. No endoscopic removal as can cause perforation...
- Lipomas/fibromas/haemangiomas
- Mucosal polyps/cysts

CARCINOMA OESOPHAGUS

- Common
- **Types and etiology**
- **SCC (93%)** - mostly involves upper and middle 1/3rd of oesophagus
- Age 50-70 yrs
- Males
- Smoking/alcohol/paan/supari
- Hot and spicy food
- Oesophageal conditions - strictures, corrosive injury, cardiac achalasia
- Premalignant - plummer vinson syndrome (females), HPV
- **Adenocarcinoma** - lower 1/3rd - gerd/barrett's oesophagus

- **Spread**
- Direct – trachea, left bronchi, subglottis, RLN
- Lymphatic – supraclavicular LN
- Blood – lung, liver, bone, brain
- **C/F**
- Retrosternal discomfort
- Gradually progressive dysphagia for solids first then liquids
- Odynophagia
- Iron def anaemia
- Loss of weight
- IDL – pooling of saliva (ca upper 1/3rd), paramedian vc (RLN)

- **Diagnosis**
- Barium swallow – irregular narrowing and ulcerated edges. Rat tail appearance
- Oesophagoscopy with biopsy
- CT Scan
- Chest X Ray
- **Treatment -** poor prognosis as late presentation
- SCC - RT / if early in upper 1/3rd - total laryngo pharyngo oesophagectomy with gastric pull up
- Adeno – surgery – oesophagogastrectomy with reconstruction (radioresistant)
- Late stage – palliative – pain killers/gastrostomy

PLUMMER VINSON SYNDROME

- Patterson brown kelly syndrome
- **Etiology**
- Iron def/ vitamin def
- Autoimmune
- Atrophy of mm of alimentary tract in lowest part of laryngopharynx
- **C/F**
- Gradually progressive dysphagia first for solids
- Microcytic hypochromic anaemia
- Angular stomatitis/ glossitis
- Koilonychia (spooning of nails)
- Web formation in cricopharynx/ splenomegaly

- **Prognosis** – can lead to ca buccal mucosa, tongue, pharynx, oesophagus, stomach, post cricoid region
- **Diagnosis**
- Haemogram
- Barium swallow
- Oesophagoscopy – web formation in post cricoid region
- **Treatment**
- Oral/parentral iron
- Vit B6, B12
- Oesophageal dilatation of web with bougies.....

ZENKER'S DIVERTICULUM/PHARYNGEAL POUCH

- Hypopharyngeal diverticulum/ upper oesophageal diverticulum
- **Etiology**
- Age > 60 yrs
- Hypopharyngeal mucosa herniates through killian's dehiscence (weak area between thyropharyngeus and cricopharyngeus)
- Sac formed has mouth wider than oesophageal opening so food gets collected in it
- **C/F**
- Dysphagia - increases after few swallows as pouch filled with food

- Regurgitation of food
- Halitosis
- Voice change
- Gurgling sound on swallowing
- Loss of weight
- Aspiration pneumonia
- **O/E**
- Swelling on left side of ant triangle of neck which is soft and gurgles on palpation (Boyce's sign)
- IDL – pooling of saliva
- **Diagnosis** – Barium swallow.
- Oesophagoscopy C/I as risk of perforation

- Treatment
- Excision of pouch (diverticulectomy)
- Cricopharyngeal myotomy (cervical approach)
- Dohlman's procedure – endoscopic diathermy to divide partition wall between oesophagus and pouch
- Endoscopic laser treatment with CO2 laser using operating microscope to divide partition wall between oesophagus and pouch

HIATUS HERNIA

- Displacement of stomach into chest through diaphragm
- Age > 50 yrs
- **Types**
- Sliding (mc) 85% - reflux oesophagitis, heart burn – in line of oesophagus
- Paraoesophageal 5% - no reflux, external dyspnoea – by side of oesophagus
- Mixed 10%

- **Diagnosis**
- Barium swallow
- X Ray Chest - gas shadow behind heart
- **Treatment**
- Conservative - reduce reflux
- Surgical - reduction of hernia and repair of diaphragmatic opening

F B AIR PASSAGES

- Larynx, trachea, bronchi
- Large (supraglottis), small (trachea/bronchi), sharp (any site)
- **Predisposing factors**
- Age – 1-4 yrs, tendency to put, accidental
- Unconsciousness – alcohol, anaesthesia, head injury
- During swallowing – coughing, laughing, tapping on back
- IX, X CN – larynx and pharynx paralysis
- Psychiatric

- **Nature of F B**
- Non vegetative - plastic, glass, metals. Can remain asymptomatic, non irritating, granuloma formation
- Vegetative - peanuts, beans, seeds. Reactive cause congestion and oedema, can swell up causing airway obstruction, short latent period, cause chemical irritation and infection

- **C/F**
- Inhalation phase – choking 1st symptom, dry cough, sudden dyspnoea, wheezing (U/L, B/L), cyanosis, fever, stridor, tachycardia, tachypnoea
- Latent – symptom free interval (adaptation)
- Manifestation
- Laryngeal FB – if large fatal, change in voice, croupy cough, inspiratory stridor, aphonia, dyspnoea
- Tracheal FB – sharp – cough and hemoptysis, small can move up and down – audible click, biphasic stridor

- Bronchial FB - right mc (shorter, wider, vertical)
- Total obstruction – atelectasis (collapse)
- Partial obstruction – check valve – obstructive emphysema
- Small – wheeze
- **Complications** – bronchiectasis, lung abscess, empyema, pneumothorax
- **D/D** – acute LTB, pulmonary TB, pneumonia, bronchiectasis, lung abscess

- **Diagnosis**
- X Ray Neck AP and lateral - radio opaque FB
- X Ray Chest PA and lateral at end of inspiration and expiration - radiolucent FB
- CT Scan
- Fluoroscopy/ videofluoroscopy
- Laryngoscopy and bronchoscopy
- **Treatment**
- IV antibiotics/steroids/oxygen
- Laryngeal FB - DL Scopy/laryngofissure
- Tracheostomy/cricothyrotomy

- **Hemlich's maneuver**
- Indication - large FB completely completely obstruction the larynx with total aphonia and asphyxia
- C/I - partial obstruction
- Method
- Stand behind the standing patient - place arms around his lower chest - give 4 sudden upward and backward thurst below the epigastric region - squeezing of lungs occurs so residual air can dislodge the FB
- **Bronchoscopy** - rigid/flexible
- **Thoracotomy/bronchotomy**
- **Lobectomy/pneumonectomy** - old impacted FB

F B FOOD PASSAGES

- **Pharynx**
- Tonsil, base of tongue, vallecula, pyriform fossa
- Tonsil - fish bone, needle - tongue depressor and forceps.....
- Base of tongue/vallecula - fish bone, needle - IDL
- Pyriform fossa - fish bone, needle, dentures, meat bone - rigid endoscopy
- **Oesophagus** - coin (mc), meat bone (adults), dentures, safety pin , battery (tissue necrosis)
- **Sites** - cricopharyngeal sphincter (mc), broncho aortic constriction and lower sphincter

- **Risk factors**
- Children - tendency to put
- Oesophageal strictures, carcinoma
- Psychosis
- Loss of consciousness - seizures, alcohol, deep sleep
- **C/F**
- Choking/gagging at time of ingestion
- Pain/discomfort
- Dysphagia/odynophagia
- Drooling of saliva
- Resp distress/hoarseness/stridor - if compresses trachea
- IDL - pooling of saliva
- Laryngeal crepitus absent

- **Diagnosis**
- X Ray Neck AP and Lateral - radio opaque
- Radiolucent - prevertebral widening, displacement of trachea
- X Ray Chest lateral and PA view
- X Ray Neck to pelvis - children to rule out multiple FB
- Barium study - full study can disfigure the oesophagus. So a small cotton pledget soaked in barium can be swallowed and it get stuck at FB - for radiolucent FB

- **Treatment**
- Oesophagoscopy and removal under GA
- Cervical oesophagotomy – impacted FB
- Trans thoracic oesophagotomy
- Thoractomy/external approach
- IV antibiotics
- Stomach – passes with stools so watch, normal diet, no purgatives. Operate if pain and tenderness in abdomen, no progress, if FB > 5 cm in a child < 2 yrs age
- **Complication** – resp obstruction/oesophageal perforation, stenosis, strictures/TOF/ cellulitis and abscess in neck/perforation of aorta

BRONCHOSCOPY

- Rigid/flexible
- **RIGID BRONCHOSCOPY**
- **Indications**
- **Diagnostic**
- Symptoms like wheeze, dyspnoea, chronic cough, unexplained hoarseness of voice, pulmonary infection > 4 weeks
- Abnormal radiological findings – atelectasia, empysema, opacity, pneumonia
- Vc paralysis
- Collection of bronchial secretions
- Malignancy/ tuberculosis
- Difficult intubation

- Therapeutic
- FB removal
- Suction clearance of secretions, mucus plug in head injury, chest trauma, major thoracic or abdominal surgery, coma
- Removal of benign neoplasm
- Drainage of lung abscess
- Excision of strictures
- Dilatation of bronchial stenosis
- **C/I**
- Trismus/cervical spine lesions/ aortic aneurysm/ unstable angina, recent MI/ coagulopathy, bleeding disorders/recent URTI in children (oedema)

- Bronchoscope
- Chevalier Jackson – distal illumination
- Openings (vents) at distal end for aeration
- Size as per age – length adults 40 cm, children 30 cm, infants 25 cm

- **Anaesthesia**
- GA using ventilatory part of bronchoscope
- Jet ventilation (using jet instrument for ventilation called venturi)
- Procedure not longer than 20 min to prevent subglottic oedema mainly in children
- **Position**
- Boyce's position – neck flexed on thorax, head extended at atlanto occipital joint
- **Technique**
- Direct
- Through laryngoscope – infants and children, short neck, thick tongue
- Select proper size scope, no force

- **Steps**
- Lubricate the scope
- Protect teeth , lips
- Hold in right hand, introduce through right side of tongue, move to midline to view epiglottis
- Lift the base of tongue to identify tip of epiglottis
- Lift the epiglottis to enter glottis
- Rotate the scope 90 degree to bring its tip in axis of glottis and enter trachea
- Rotate the scope back to its position.....
- For examining bronchi turn the head to opposite side

- **Post op care**
- IV antibiotics and steroids
- NBM till out of anaesthesia
- Coma position to prevent aspiration
- If resp distress, cyanosis due to laryngeal spasm – may need tracheostomy
- **Complications**
- Injury to teeth, lips
- Bleeding – use topical adrenaline
- Laryngeal spasm/oedema – steroids/oxygen
- Bronchospasm – steroids
- Pneumothorax
- Hypoxemia - oxygen

- **Flexible fibre optic bronchoscopy**
- **Advantages**
- Better magnification and illumination
- Documentation
- Small size – sub segmental bronnchioles
- Topical anaesthesia
- Can be done in neck or jaw lesions
- Can be passed through ET/tracheostomy tube
- Bed side
- Can take biopsy of upper lobe
- **Disadvantage** – limited use in children because of problem of ventilation

OESOPHAGOSCOPY

- **RIGID OESOPHAGOSCOPY**
- **Indications**
- Diagnostic
- Dysphagia, odynophagia, regurgitation
- FB throat
- Oesaphageal disorders
- Haematemesis
- Metastatic neck node
- As part of panendoscopy
- Therapeutic
- Removal of foreign body
- Removal of benign neoplasm/ treatment of diverticulum
- Dilatation of oesophagus - stricture, webs, stenosis
- TEP after total laryngectomy
- Injection sclerosing agent for oesophageal varices

- **C/I**
- Coagulopathy/bleeding disorder
- Perforation of oesophagus/acute burns
- Cervical spine/mandible lesions/severe trismus
- Aneurysm of aorta
- Advance heart, kidney, liver disease
- **Pre op**
- BT, CT
- Stop NSAID – 2 to 5 days before
- Stop aspirin – 7 to 10 days before
- NBM 6-8 hours
- Barium swallow
- Antibiotic

- Oesophagoscope
- Chevalier Jackson - distal illumination
- Negus - oblique light
- The handle at proximal end indicate direction of bevel at distal end

- **Anaesthesia** - GA
- **Position** - Boyce's position- head extended at atlanto occipital joint, neck flexed on chest
- Once cricopharyngeal sphincter reached all extended
- **Technique**
- Lubricate - protect lips and teeth - hold in right hand and introduce through right side of tongue- identify epiglottis and arytenoids
- Lift the scope with left thumb to open hypopharynx
- Slow gentle pressure on tip at cricopharyngeal sphincter opening. If sphincter dont open give a muscle relaxant or 4% lignocaine drops through scope
- Guide the scope into oesophagus. Now hands switched over and hold with left hand
- Advance to see cardiac end . extension
- Inspect the oesophagus while withdrawing

- **Post op care**
- Look for features of oesophageal perforation - pain in intrascapular region, surgical emphysema, high fever
- **Complications**
- Injury to lips, teeth, pharynx
- Oesophageal perforation - cricopharyngeal sphincter
- Injury to arytenoids
- Bleeding
- Rupture of aortic aneurysm
- Injury to cervical vertebra
- Compression of trachea in children leading to resp obstruction - immediately withdraw the scope

FLEXIBLE OESOPHAGOSCOPY

- **Advantages**
- OPD procedure
- LA - spray/SLN block
- Less morbidity
- Can be done in jaw, spine disorders
- Can examine stomach and duodenum
- Good illumination and magnification
- **Disadvantages**
- Limited removal of FB
- Cant examine laryngopharynx
- Need voluntary swallowing to advance scope
- **Procedure**
- Air or water insufflation is done to open the lumen of oesophagus