Food Impaction & Foreign Bodies

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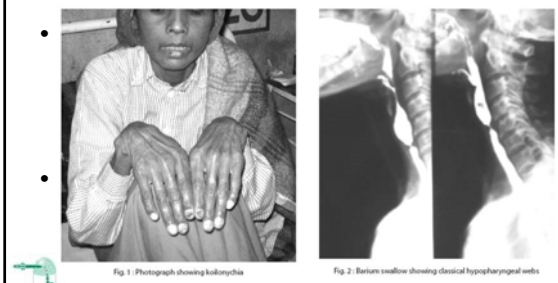

Fig. 1 : Photograph showing koilonychia

Fig. 2 : Barium swallow showing classical hypopharyngeal webs

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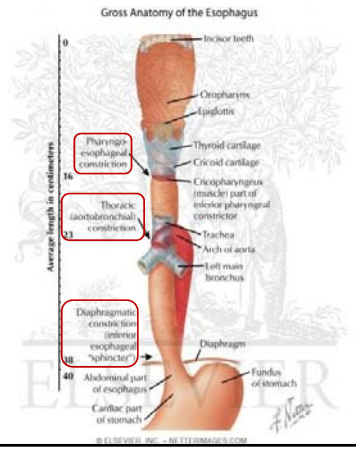

Oesophageal Foreign Bodies (OFB)
Food Bolus Impaction (FBI)

- 80-90% will pass sponteanously
- 10-20% require non operative intervention
- ~1% require surgery
- Very low mortality (« recent » series):
  - 0/852 adults
  - 1/2206 children

Ikenberry et al, GIE, 2011
Birk et al, Endoscopy, 2016

OFB Management

- **(Hetero-) Anamnesis:**
  - ***Who:***
    - Adult vs pediatric population
    - Previous oesophageal or bariatric surgery
    - Atopy (Eosinophilic Esophagitis or EoE)
    - Psychiatric disorder
  - ***What:***
    - Size, sharp edges
    - Plastic, metallic, food
  - ***Where***:
    - Level of complaint is not reliable of the level of impaction
  - ***When:***
    - > or < 24 hours
  - ***Symptoms:***
    - Dyspnea (tracheal obstruction), cough
    - Retrosternal fullness, hypersalivation, regurgitation
    - Pain, odynophagia (spasm, dilaceration or perforation), or refusal to eat
    - Complete inability to swallow saliva (total obstruction)

Table 1 Classification of swallowed foreign bodies.

Type	Examples
Blunt objects	Round objects: coin, button, toy Batteries, magnets
Sharp-pointed objects	Fine objects: needle, toothpick, bone, safety-pin, glass pieces Sharp irregular objects: partial denture, razor blade
Long objects	Soft objects: string, cord Hard objects: toothbrush, cutlery, screwdriver, pen, pencil
Food bolus	With or without bones
Others	Packets of illegal drugs

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OFB Management

- ***Signs***:
  - Stridor
  - Tumefaction, swelling, erythema, crepitus (neck)
  - Respiratory failure, followed by asthmatic symptoms and cough
  - Sepsis
  - Intestinal occlusion or peritonitis
- ***Neck & Chest X-rays (47% of false negative)***:
  - In case of radio-opaque bodies
  - Evaluation of complications
  - **NO BARRIUM SWALLOW!**
    - Aspiration risk
    - FB coating

Table 2 Classification of foreign bodies according to their radiodensity.

Radiodensity	Foreign body
Can mostly be identified on radiography	True foreign bodies (i.e. nonfood objects) Steak bones
Cannot (regularly) be identified on radiography	Food bolus Fish or chicken bones Wood Plastic Glass Thin metal objects

- ***CT Scan:***
  - In case of suspiscion of perforation/complication
  - Increased sensistivity (90-100%)/specificity (93-100%) (fish bones & bones fragments)

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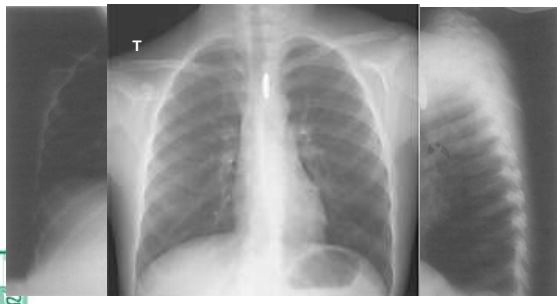
OFB X-rays of coins: esophagus (E) vs trachea (T)?



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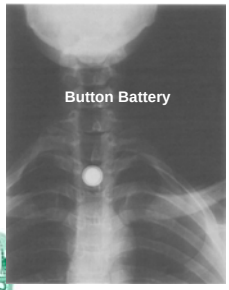
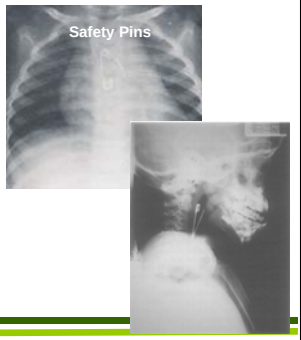
OFB X-rays





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OFB Management

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- ***CT Scan:***
  - In case of suspiscion of perforation/complication
  - In case of unexplained symptoms
  - Increased sensistivity (90-100%)/specificity (93-100%) (fish bones & bones fragments)

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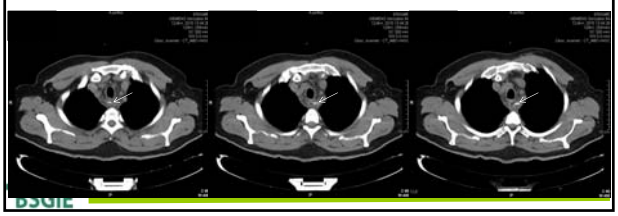
CT Scan

Man 52 years old
Unadvertant chicken bones ingestion
Acute dysphagia
Odynophagia
Mild pain
NEGATIVE X-RAYS



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OFB Management

- Principles:
  - Avoid risks of aspiration
  - Avoid risks of perforation (2.3%; especially if present from more than 24hours)
- In case of unknown duration of oesophageal FB remaining: endoscopy under general anesthesia (+surgical advice)

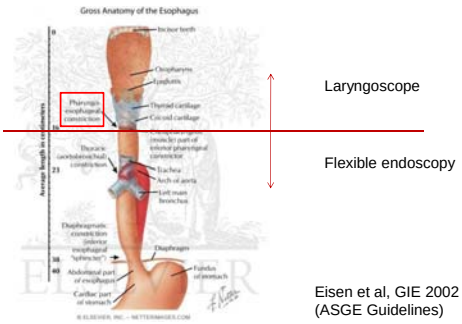
ESGE Guidelines Management

- **Emergent (< 2 hours-6 hours max) Endoscopy** is recommended in case of
  - Complete esophageal obstruction (hypersalivation, inability to swallow liquids)
  - Sharp objects ingested (pins, dentures, toothpicks, bones,…)
  - Button batteries lodged in the esophagus
- **Urgent** (< 24 hours) Endoscopy is recommended in case of
  - Esophageal Foreign bodies whithout complete obstruction
  - Gastric Foreign (sharp- pointed, magnets, batteries and/or large long objects) bodies
- **Non urgent** (<72 hours) Endoscopy for medium sized foreign bodies remaining in the stomach

ASGE/ESGE Guidelines Management

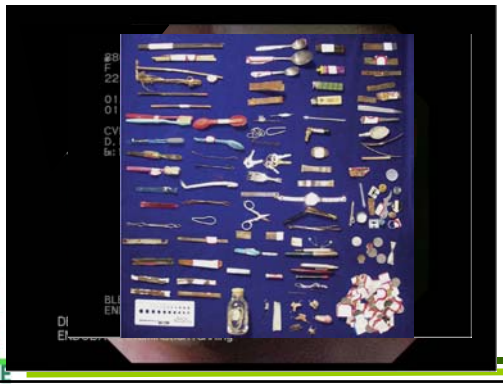
- « No treatment is needed in asymptomatic patient with negative plains radiographs »
- Clinical observation without the need for endoscopic removal for management of asymptomatic patients with ingestion of small or blunt object (except batteries and magnets):
  - <2,5 cm in diameter
  - <6 cm in lenght
  - In case of « body packing »

Treatment of choice: Location



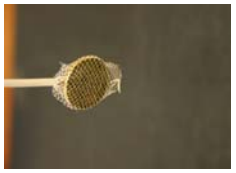
Eisen et al, GIE 2002
(ASGE Guidelines)

OFB Diagnosis : Endoscopy



OFB Management: Equipment



OFB Management : Equipment

OFB Management: Equipment

OFB Management: type-specific

- ***Food impaction (aspiration risk)***
  - NO TENDERIZERS
  - Immediate intervention in case of total obstruction, or within 24 hours
  - « Glucagon administration (1mg, IV) », in absence of anatomical stricture
  - « Push technique »
  - Fragmentation / removal
  - In absence of previous surgery, perform biopsy and cautious dilation of the stricture(after FB removal!)
  - Half could be Eosinophilic esophagitis (EoE)

OFB Management: type-specific

- ***Blunt objects (coins)***
  - Eventually pushed within the stomach
  - use of rat-tooth forceps or net retrieval (Roth-net)
  - If already migratred in the stomach:
    - < 2.5 cm diameter and < 6 cm long: spontaneous migration in 6-28 days
    - Weekly radiogram
    - Surgery if symptomatic (obstruction) or stay in place more than 1 week (except in the stomach>endoscopy)
- ***Narcotic packets***
  - No role for endoscopy

Webb, GIE, 1995
Faigel et al, GIE, 1997
Panieri and Bass, Eur J Emerg Med, 1995
Hachimi-Idrissi et al, Eur J Emrg Med, 1998

OFB Management: type-specific

- ***Sharp pointed objects (fish or chicken bones, dentures, tooth sticks…)***
  - 35% of complications in the first series
  - Emergency
  - Under general anesthesia (GA)
  - Use of an overtube or protector hood
- ***Disk Batteries (DB)***
  - Emergency if lodged in the esophagus (potentially fatal electrolytic necrosis/perforation)
  - Endoscopic Fogartysation (under GA), net retrieval or pushed within the stomach
  - Endoscopic removal of gastric DB

Litovitz and Schmitz, Pediatrics, 1992
Gordon and Gough, Ann R Coll Surg Engl, 1993
Birk et al Endoscopy 2016

Foreign body-induced perforation

- Endoscopic closure has been considered in highly selected patients (case reports)
  - Endoclips — Qadeer et al, GIE, 2007
  - Esophageal stent — Freeman et al, Ann Thorac Surg, 2003
- Surgery is still the recommended treatment
  - Esophageal perforation, with symptoms lasting for more than 24 hours

Bryant and Cerfolio, Thorac Surg Clin, 2007

Take-home messages

- Most Ingested foreign bodies pass readily throughout the gastrointestinal tract
- Food impaction occur above a pathologic luminal narrowing
- Prompt treatment aims to avoid complications of OFB (aspiration, perforation)
- No treatment is required in asymptomatic patient with normal plained X-rays.
- FB already migrated into the stomach should be managed on a case by case basis

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Birk et al 2016

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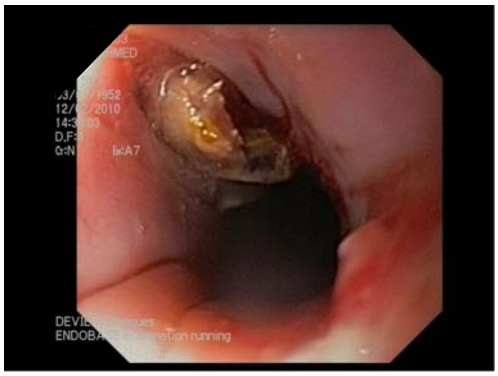

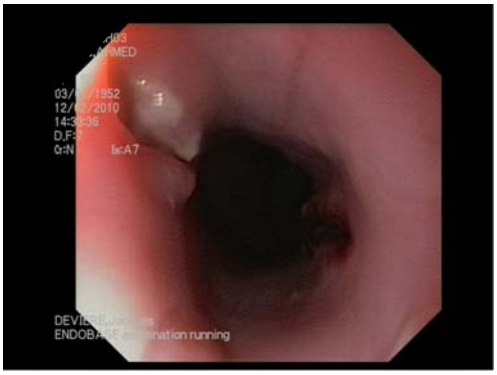

OFB: Diagnosis

- Hetero- Anamnesis
- Physical examination
- X-ray
- Endoscopy

Foreign bodies already passed in the stomach

- Case by case management
- Likelihood of spontaneous passage
  - Size, shape and composition
  - Patient anatomical abnormalities (previous surgery, Crohn disease, diverticular disease,…)
- Informed and followed expectation (X-rays if radio opaque)
  - Inert object less than 6 cm long or 2.5 cm diameter

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