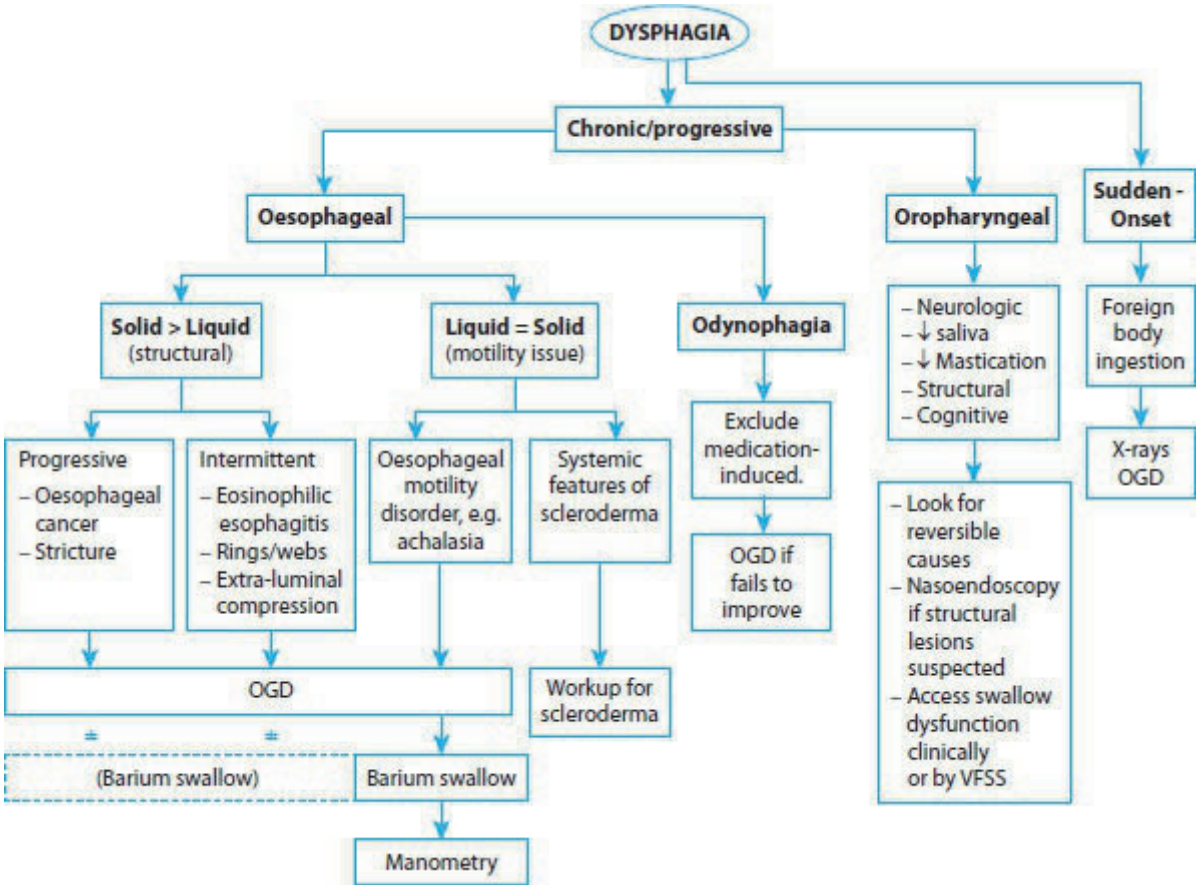
Chapter 15 An Approach to Dysphagia

Clinical Case

A 62-year-old man presents with a 4-month history of difficulty swallowing. This started as difficulty swallowing hard food (e.g., steak), which tends to get 'stuck' in his chest. He has switched to a porridge-based diet, but in the last 2 weeks, found swallowing even porridge difficult. He has lost 7 kg in the last 4 months, and feels generally lethargic. He has a past medical history of chronic reflux symptoms, and is a heavy smoker. Physical examination is unremarkable apart from dehydration. How would you approach his complaint?

Dysphagia is a sensation of difficulty swallowing. It is never normal (Figure 15.1).



OGD, oesophagogastroduodenoscopy; VFSS, videofluoroscopic swallowing study.

Figure 15.1. Approach to dysphagia.

Initial Approach

The first division is between

- **Oropharyngeal dysphagia**: Difficulty initiating a swallow, especially if associated with coughing, choking, regurgitation and drooling. Patients sometimes use their fingers to help position food, and there may also be abnormalities with speech.
- **Oesophageal dysphagia**: A sensation of food getting stuck a few seconds after initiating a swallow. Patients are often able to point to the location in the neck or chest where they feel the food is getting stuck.
- **Acute-onset dysphagia**: Suggests foreign body ingestion. Ask for relevant history. Consider neck and chest X-rays to identify radio-opaque foreign

bodies (not all foreign bodies are visible on X-ray), as well as endoscopy (urgent if obstruction is complete, i.e., unable to swallow even secretions, or the suspected foreign body is dangerous, e.g., caustic, sharp-pointed or large).

Oesophageal Dysphagia

The symptomology of oesophageal dysphagia correlates with its mechanism

- **Structural obstruction**: Causes greater difficulty swallowing solids than liquids, as the larger the food particle, the more difficult to pass down a narrow oesophagus. Patients may have dysphagia to solids only, or to solids first before liquids are involved later.
- **Motility disorder**: Causes equal difficulty swallowing both solids and liquids from the start.
- **Odynophagia** (painful swallowing): Suggests oesophagitis.

Patients with severe dysphagia are often unable to maintain adequate food and water intake, becoming cachexic and dehydrated.

Dysphagia to Solids > Liquids

Aetiologies—progressively worsening dysphagia:

- **Oesophageal cancer**: Progressive solid dysphagia in an elderly patient is worrisome, especially if accompanied with severe weight loss, anaemia, hoarseness of voice and cervical lymphadenopathy.
- **Stricture**: Patients may have a history of heartburn or reflux symptoms (peptic stricture from gastroesophageal reflux disease), neck radiation (radiation stricture) or caustic chemical ingestion.

Aetiologies—intermittent dysphagia:

- Intra-luminal oesophageal abnormalities including eosinophilic oesophagitis, rings and webs.
- Extra-luminal compression of the aorta by congenital aortic arch

abnormalities, enlargement of the left atrium or thoracic aorta, thyroid nodules or mediastinal lymph nodes.

Approach: The first consideration is oesophageal cancer, especially in an older patient. Most patients should receive oesophagogastroduodenoscopy (OGD) to visualise the abnormality. Barium swallow is an alternate diagnostic modality in patients who are unfit for OGD, or if severe anatomical distortion is suspected (OGD carries higher risk of perforation).

Dysphagia to Liquids = Solids

(a) **Suspect systemic disorder—scleroderma**: Oesophageal dysmotility is a key feature of scleroderma. Look for other features including Raynaud's phenomenon, skin tightening (especially of the hands and mouth, or diffuse), puffy swollen fingers, calcinosis and telangiectasia. There may be systemic organ involvement including interstitial lung disease, renal impairment and so forth.

(b) **Suspect oesophageal motility disorder**: In achalasia, a motility disorder of unknown cause, oesophageal peristalsis is lost, and the lower oesophageal sphincter does not relax. Other oesophageal motility disorders include distal oesophageal spasm, ineffective oesophageal contractility and so forth. Approach:

- OGD should be performed to exclude structural aetiologies of dysphagia.
- Barium swallow: This may reveal specific findings in achalasia (dilated oesophagus with a bird beak's narrowing at the gastroesophageal junction) or oesophageal motility disorders (e.g., corkscrew oesophagus).
- Oesophageal manometry: This further characterises abnormalities of oesophageal motility and diagnoses motility disorders.

Odynophagia

Odynophagia suggests oesophagitis. This may be medication-induced (i.e., swallowed tablets stuck in the oesophagus) or infective. An approach would be to

- Take a history for medications known to cause oesophagitis (e.g., bisphosphonates, tetracyclines, clindamycin and non-steroidal anti-inflammatory drugs [NSAIDs]); discontinue these medications.
- Examine for oral candidiasis; if present test for HIV and look for other immunodeficiencies.
- If odynophagia fails to resolve 1 to 2 weeks after discontinuing culprit medications, consider OGD. This may reveal a discrete ulcer (medication-induced oesophagitis), white plaques (candidiasis) or multiple ulcers (HSV). Biopsies confirm aetiology.

Oropharyngeal Dysphagia

Oropharyngeal dysphagia is often multifactorial. The goal of evaluation is to identify reversible causes and minimise complications such as aspiration pneumonia.

Aetiologies

- **Neurologic disease**: Coordination of swallowing is a complex process. Dysphagia can be prominent in a number of neurological diseases including upper motor neuron lesions (e.g., stroke), extrapyramidal lesions (Parkinson's disease) and lower motor neuron lesions (myopathies and myasthenia gravis). A careful neurologic examination will be able to identify these diseases (Chapters 25 and 26).
- **Decreased saliva production**: Due to medication side effects (anticholinergics and antihistamines) or as an autoimmune process (Sjogren's syndrome).
- **Inadequate mastication**: Poor dentition and mucosal lesions (e.g., ulcers and viral mucositis).
- **Structural abnormalities**: Oropharyngeal malignancies, Zenker's

diverticulum (pharyngeal pouch) and so forth.

- **Cognitive overlay**: Cognitive dysfunction (delirium or dementia) is a significant contributor to dysphagia and aspiration risk in many elderly patients.

Approach

- If a possibly reversible aetiology (e.g., myasthenia gravis and Sjogren's syndrome) is identified, pursue specific workup and diagnosis for that aetiology.
- Bedside swallowing tests to confirm oropharyngeal dysfunction and assess aspiration risk. If in doubt, videofluoroscopic swallowing study (VFSS), a modified barium swallow, can assist.
- **Nasoendoscopy** assists in looking for structural lesions, if the patient does not already have a good cause for dysphagia (e.g., large stroke).

Using what you have learnt, **pen down your approach** to the Clinical Case at the start of the chapter **BEFORE reading the discussion** below.

Case Discussion

This is a middle-aged man with oesophageal dysphagia, affecting solids more than liquids. Switching from a solid to a soft diet is a telling behavioural modification in many patients with dysphagia. In spite of this, dysphagia has worsened progressively and there is associated weight loss. These symptoms are concerning for oesophageal cancer, especially in a patient with risk factors (GERD, smoking). He should receive oesophagogastroduodenoscopy (OGD) with biopsy, and subsequent cancer staging.

Key Lessons	1. Oesophageal dysphagia is a sensation of 'food getting stuck in neck/chest after initiating a swallow'. A structural cause, most notably oesophageal cancer, affects solids more than liquids. A motility disorder affects solids and liquids equally. Most patients should receive OGD ± barium swallow. Add

	oesophageal manometry if a motility disorder is suspected. 2. Oropharyngeal dysphagia is difficulty initiating the swallow. Contributory factors include neurologic disease, decreased saliva production, structural abnormalities and impaired cognition. Apart from looking for reversible aetiologies, consider videofluoroscopic swallowing studies and nasoendoscopy.
Common Pitfalls	1. Dysphagia is abnormal and should not simply be attributed to old age.
Questions	1. **REFLECT!** Have you ever encountered geriatric patients on nasogastric tube feeding due to severe dysphagia? What were the common underlying diseases leading to dysphagia, and to what extent are they reversible? 2. **EXPLORE!** The barium swallow may be abnormal in oesophageal cancer, strictures and achalasia. How would you distinguish between the appearance of these disorders on barium swallow? 3. **GO FURTHER!** A patient has oesophageal dysphagia to both solids and liquids. What features of scleroderma would you look for, on both history and physical examination? How is a diagnosis of scleroderma made?

contraception.
DH NKDA, nil regular
FH Nil relevant
SH Long term boy friend, drinks 20 units of alcohol per week. Non-smoker.
ICE “I can't handle this pain anymore doctor. Can’t you please give me some pain relief?”
Dx Ectopic pregnancy
Ix Pregnancy test, USS pelvis, FBC, U&E, LFT, CRP, β-hCG
Treatment choice depends on urgency of treatment. Methotrexate or surgical removal of pregnancy**Mx** and likely associated Fallopian tube.

Top Tip! Remember that many of the presentations above can lead to organ rupture (appendix, colon, aorta etc.) which can then lead to signs of peritonism: rigid abdomen, pain exacerbated by any movement. Similarly bowel obstruction due to cancer, volvulus, adhesions or strangulated hernias may lead to intestinal perforation which presents in a similar manner.

Signs of peritonism on examination: guarding, rigidity, rebound tenderness. These patients are a surgical emergency and require immediate surgical review and potentially prepping for urgent surgery.

DYSPHAGIA

GENERAL FRAMEWORK

“WIPE” – Introduce yourself, whilst gaining consent
- Wash hands
- Introduce self – “Hello, my name is X and I am a medical student”
- Patient details – “Could I ask your full name and age?”
- Explain –“I have been asked to speak with you about what brings you in, would that be alright?”

Open
- I understand you’ve had problems with your swallowing, would you mind telling me more about that?
- **Clarify** – Before you tell me some more, it’s important for me just to ask whether you struggle with swallowing

solids, liquids or both?

Timeline
1. When did you start having swallowing problems? Did anything happen then?
2. Did it come on suddenly or gradually? Did it start with solids, liquids or both?
3. Do these swallow problems come and go or are they always there?
4. Have they been getting worse?
5. Have you ever had swallowing problems before?

Symptoms – Remember as: "**MPS ROB**"
1. Motion – Do you find it difficult to **initiate** the swallow or **swallowing** itself?
2. Pain – Do you have any **pain** when you swallow?
3. Smell – Have you noticed bad breath recently?
4. Regurgitation – Do you ever **bring up** food or drink after you've swallowed?
5. hOarseness – Have you noticed any **hoarseness** in your voice?
6. Bulging/ Gargling – any **bulging** of neck or **gargling** on eating?

Systems

- Neurological – Have you had a headache? Noticed a change in any of your senses? Any weakness? Odd sensations? Is it more difficult to swallow at the end of a meal? (myasthenia)
- Gastrointestinal – How has your appetite been? Have you been sick at all? ±Blood Have you had any tummy pain? Have you noticed a change in bowel habit? A more personal question. Have you noticed any change in your stool?
- Anxiety – have you been feeling particularly anxious recently?
- Dermatological – Any skin changes? (Specifically for CREST)
- Constitutional – How has your appetite been? Have you noticed a change in weight? Have you been feeling tired recently? Have you had a fever? Night-sweats?

ICE

- You've given me a lot of information, thank you. I'd like to hear a little

about what you think could be going on. Do you have any idea?
- Is there anything that's particularly concerning you that you'd like to discuss?
- What exactly are you looking for today, resolution or reassurance?

PMHx
- Do you have any medical conditions?
- Ask a few specific questions to show that you're thinking about different causes
- Specifically, I'd like to ask if you've ever been diagnosed with:

Diabetes? High BP? Heart problems like atrial Fibrillation? A stroke or something called a transient ischaemic attack? Cancer? Nervous system disease? Muscle disease?

DHx
- On any medication? Any doses of medication changed? Any medication for osteoporosis?

- Any allergies?

FHx
- Any conditions in the family?
Cancer? Nervous system disorders? Muscle disease?
- Has anyone in the family experienced swallowing problems similar to the ones you're experiencing now?

SHx
- **S**moking/ Alcohol/ Recreational drugs
- **H**ome environment? Support?
- **O**ccupation – impact on life and on occupation?

Summarise and Thank
- I'd just like to summarise back to you to make sure I haven't missed anything
- Is there anything you'd like to talk about that we haven't quite addressed?
- Thank you for talking to me and I wish you all the best

Investigations

Examination Full GI and respiratory examination (signs of aspiration pneumonia in right mid zone)
Bedside Urea breath test for *H. pylori*
Bloods FBC (?anaemia), U&E, CRP, iron studies
Imaging CXR, Barium swallow
Special Oesophageal manometry, endoscopy
Differential Diagnosis
Diagnosis Features In History
Achalasia
Myasthenia Gravis

Solids and liquids (but solids > soft), feels like it gets stuck, painful, and have to drink a lot of water. Regurgitation
occurs, relieves pain.

Difficulty swallowing
especially towards the end of the day or meal. Other
weakness, ptosis, diplopia. Progressive. Other
autoimmune conditions.

Oesophageal spasm
Pharyngeal pouch
Stricture / webs
Oesophageal cancer

Gripping/stabbing pain in central chest associated with dysphagia and reflux symptoms.

Features In Investigations
Little on examination. CXR may show dilated oesophagus. Birds beak on barium swallow.
Manometry of
oesophagus shows
increased pressure.
No structural findings, fatigability of repetitive movements.
Anti-AChR, anti-MUSK on bloods.
Positive ice test on

ptosis.
Endoscopy is clear of obstruction.
Barium swallow may show corkscrew pattern / rosary beads.
Manometry is diagnostic.

Difficulty swallowing
associated with lump in back of neck, bad breath, gurgling sounds and progressive worsening. May have chronic cough and weight loss.
Avoid endoscopy (may perforate lesion).
Barium swallow may show outpouching.

Progressive worsening of dysphagia starting with solids and progressing to softer foods. history of GORD. Ass. with autoimmune diseases (RA, thyroid, psoriasis etc.). Webs may be ass. with Fe deficiency.
Progressive dysphagia (solids

liquids), vomiting,
anorexia, weight loss, signs of GI bleed. B symptoms. RF: smoking, GORD (Barret's adenocarcinoma).
Fe deficiency anaemia in Plummer-Vinson
Syndrome.
Barium swallow to show stricture, endoscopy to biopsy.

"Apple core" on barium swallow.
Iron deficiency.

Management

Medical: CCBs and nitrates to relax
lower oesophagus. Sphincter.
Surgical: Heller
myotomy

Anti-cholinesterase therapy,
Immunosuppression. Neurology follow up.

Medical: Nitrates, CCBs
Interventional:

Botox injection,
balloon dilation.

Surgical –
depending on size. Dohlman's
procedure if small (opens up pouch) Diverticulectomy if large – closes defect.

Medical: PPIs
Interventional:
Dilatation at
endoscopy.
Screen and safety net for aspiration pneumonitis.

Primarily surgical – endoscopic resection or oesophagectomy if advanced.
May use radio- / chemoadjunct.

Marking Criteria Dysphagia
Marks Awarded Available

W ashes hands at the start of the station 1
Introduces themselves – Including First name, last name and role 1
Patient details confirmed: Full name, Age/ D.O.B. 1
Explains purpose of consultation 1
Open question about what brings the patient in today + Clarification of any ambiguity –1clarifies whether the patient struggles with solids/ liquids/ both

Timeline allows a clear understanding of onset and progression
- Onset/ Circumstance
- Sudden vs. gradual3- Fluctuations

- Progression
- Past episodes
Symptoms elicited are relevant and clearly directed at either arriving at a diagnosis or

excluding other plausible diagnoses
- "MPS ROB"

o Motion
o Pain 5 o Smell
o Regurgitation
o hOarseness
o Bulging/ gargling

Systems queried are relevant to the complaint and adequate questions are asked for each
symptom 5

- Neurological; Gastrointestinal; Anxiety; Dermatological; Constitutional
Explores **Ideas, Concerns and Expectations** 3 Elicits relevant **Past Medical History**
- DM; HTN; Heart problems; Previous stroke or TIA; Cancer; Nervous system 2

disease; Muscle disease
Elicits relevant **Drug History** including **Allergies** 2
Elicits relevant **Family History** 2
Elicits relevant **Social History** – including **S**moking/ alcohol/ recreational drugs; **H**ome$_{2}$environment and support; **O**ccupation and impact on life

Closes consultation appropriately allowing the patient to ask any questions 1
Presentation: structured, concise 2
Appropriate Differential Diagnosis ± Investigations ± Management Plan 3
Examiner mark – professionalism and rapport 5
Patient mark – professionalism and rapport 5

Consultation Presentation Global marks patient Global marks examiner Total 51M presents with difficulty eating
Trouble swallowing for 2 months now. Initially was with big sticky things like potatoes, but gotten worse and worse over time and now is having trouble swallowing yoghurts and pureed foods. Has been constantly there, doesn't come and go. Feels like food is getting stuck half way down his chest. Helps if he drinks water afterwards to get it moving. Has not been feeling well in himself whilst this

HPC has been happening, not been able to eat much, lost 9kg in weight (was

82kg 2 months ago) and so feeling very tired in himself as well – not been going to his pub to play darts for the last week, normally every day.
No weakness / progression of weakness with a meal / regurgitation / gurgling / halitosis / vomiting / cough / rashes / fevers / myalgia or arthralgia / difficulties speaking / drooling.

PMH COPD, depression, anxiety, GORD
DH Symbicort, tiotropium, salbutamol, Ramipril, pantoprazole, sertraline, diazepam PRN. NKDA **FH** Father – lung cancer. Mother – AF.
SH Lives alone. Smoker, 20/day for 40 years. 6 pints of beer a night.
ICE "It feels all closed up, can you open up again?"
Dx Oesophageal cancer
Ix Endoscopy, staging CT
Mx MDT management with surgery / chemotherapy / radiotherapy / combination therapy based on stage.

48F presents with difficulty swallowing
Difficulty with swallowing for 6 months, intermittent, feels like food gets stuck in chest and then if she drinks a lot of water resolves. Solids and liquids equally and from the beginning. Sometimes gets some regurgitation. Causes pain in the chest at times – no radiation, achey, 3/10, resolves with time/

HPC lots of water, worse on eating more at the time. Has noted more heartburn recently. Been put off food as scared if that will happen.
No gurgling / neck lump / halitosis / weight loss / lethargy / fevers / night sweats / nausea / vomiting / diarrhoea / abdominal pain / weakness / difficulty initiating swallow

PMH Hypothyroidism, GORD
DH Levothyroxine, omeprazole. Allergic to tramadol – gets vomiting.
FH Mother – hypothyroidism. Father – colorectal cancer.
SH Lives with 3 cats. Non-smoker, 1 glass of wine a night.
ICE "I'm scared the pain is to do with my heart, what if something happens?"
Dx Achalasia

Ix
CXR, barium swallow (oesophageal dilatation with bird's beak end),

endoscopy, perhaps oesophageal manometry
Mx
Young and fit – Heller myotomy, unfit for surgery - pneumonic dilatation. CCBs or nitrates if unsuitable for either.

81M presents with problems after eating
For a few months has been having problems with swallowing foods properly. Has been getting some food coming back up and has been eating a lot let because of this. Has noted a strange sound

HPC

sometimes when trying to swallow. Wife complains of bad breath more in the last month. No fevers but has been having a cough for the last 2 months – dry cough, throaty, no sputum, no blood, no shortness of breath.
No progression of symptoms / no lethargy / no weight loss / sweats / previous episodes.

PMH HTN, hypercholesterolaemia, AF, arthritis
DH Ramipril, amlodipine, simvastatin, warfarin, co-codamol
FH Father had MI
SH Lives with wife. Ex-smoker of 20/day for 30 years. No alcohol
ICE "I just want to be able to eat again"
Dx Pharyngeal pouch
Ix CXR (look for aspiration pneumonia) Barium swallow
Mx Diverticulotomy or Dohlman's procedure.

VOMITING

GENERAL FRAMEWORK

"WIPE" – Introduce yourself, whilst gaining consent
- Wash hands
- Introduce self – "Hello, my name is X and I am a medical student"
- Patient details – "Could I ask your full name and age?"
- Explain –"I have been asked to speak with you about what brings you in, would that be alright?"