



Key competencies in cancer care e-learning case

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July 2016

Introduction

- This is an interactive e-learning case which explores the themes in your 'Key competencies in cancer care' lecture in relation to a patient.
- This case will take you less than 30 minutes to complete.

A 60 year old man, Joseph Henrik, goes to see his GP. Below is an extract from the start of the consultation.

Dr: What can I help you with today?

JH: Well, I've had a feeling of food getting stuck for the last few weeks. It's not exactly painful, just uncomfortable as it doesn't seem to go down easily. I'm a bit worried about it. I can manage tea and water and soups, but steak and chips and other tougher things seem to get stuck.

OK, so you've felt that food has got stuck for a few weeks, and it seems worse with tougher foods but liquids are ok. Where do you feel its getting stuck?

Here, in my chest.

And have you got any other problems?

I've lost some weight...probably about 6 pounds over the last few months. And I sometimes have a burning type of pain lower down in the middle of my chest after eating.

Can you tell me more about that pain?

Well, I've had that a long time on and off. The pharmacist told me it was acid from my stomach. It's not too bad.

And how are you managing at work with all this going on?

I'm managing ok. Not needed any days off yet.

A [NICE guideline](#) 'Suspected cancer: recognition and referral' was published in June 2015. This gives criteria for rapid referral of patients ie within 2 weeks.

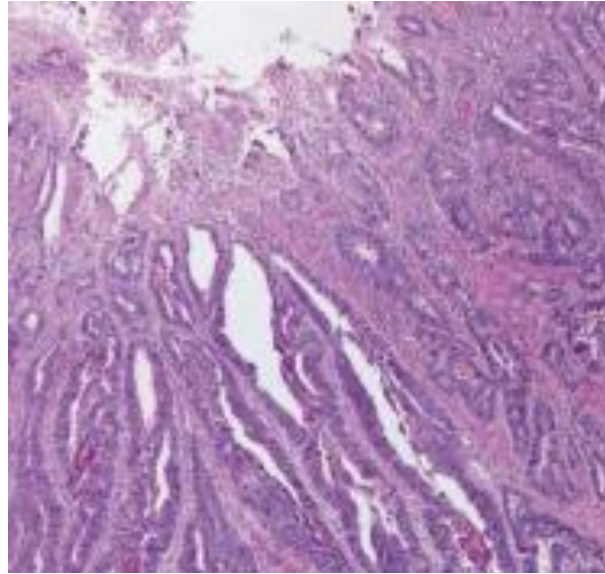
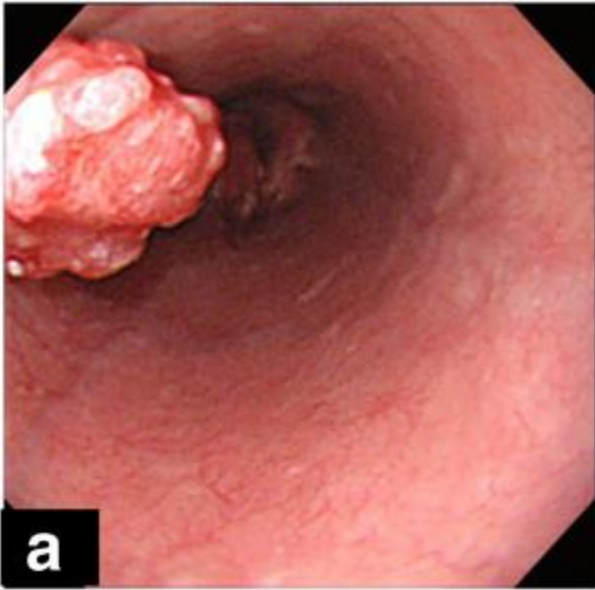
- Difficulty swallowing/food getting stuck
- Weight loss
- Burning lower chest pain after eating

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- Difficulty swallowing/food getting stuck
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The correct answer is difficulty swallowing. Two cohort studies within the review identified dysphagia has a PPV of 6 - 9.7% for predicting oesophageal cancer.

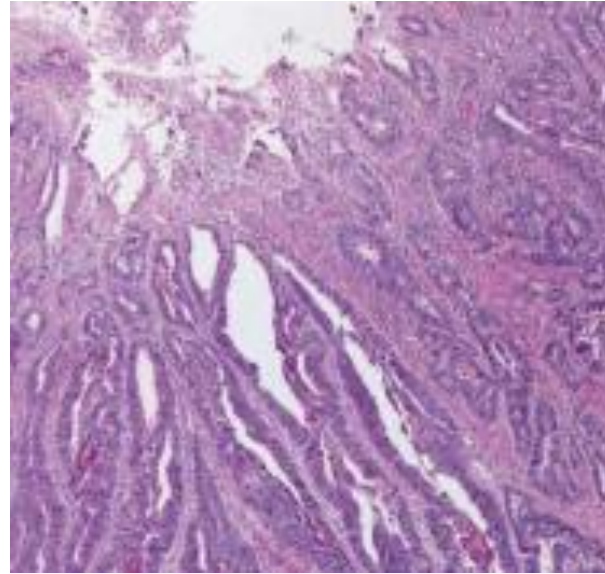
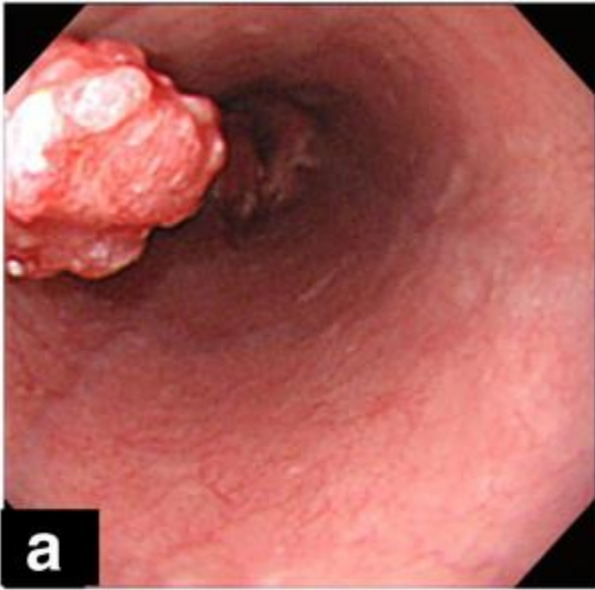
Mr Henrik has an upper GI endoscopy and biopsy performed which shows:



Describe the endoscopic abnormality

What worrying features are demonstrated by the biopsy?

Mr Henrik has an upper GI endoscopy and biopsy performed which shows:



Describe the endoscopic abnormality There is a polypoid lesion visible at 10 o'clock in the image. The surface looks friable. It is suspicious for malignancy

What worrying features are demonstrated by the biopsy? This H&E stain shows cells recapitulating a glandular architecture, but they are not organised on a luminal surface. This is consistent with an oesophageal carcinoma

What is the single most important investigation for the patient to have next? (And think about why?)

- Positron emission tomography- CT
- Blood tests- full blood count, urea and electrolytes
- Endoscopic ultrasound
- CT chest/abdomen
- Barium swallow
- Chest radiograph

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Answer:

CT chest abdomen. This should be the next step to look for obvious metastatic disease, as this would alter the patient's treatment pathway from curative to palliative. Curative treatments aim to completely remove or kill all cancer cells, whereas palliative treatments are aiming for control of disease, prolongation of survival or improvement of symptoms.

CT chest/abdomen report Joseph Henrik 123456 :

There is a 3cm mid oesophageal tumour identified on CT.

No lymphadenopathy.

Normal liver, spleen pancreas kidneys and adrenals

Clear lungs. Bones unremarkable.

What investigations should he have next?

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Best answer : PET-CT, EUS, FBC and U+E

The CT report shows no evidence of metastatic disease. Therefore the next investigations are to fully stage the patient to allow the MDT to make a decision about the best modality of curative treatment. PET-CT looks again to ensure there is no metastatic disease, and also nodal status; EUS looks at which layers of the oesophagus the tumour has invaded into and nodal status.

Now you are ready to fill in the referral form. If you are at Addenbrooke's this is done through EPIC

E-referral forms are a pain, but they do ensure that the MDT has all the information needed to make a decision on a treatment plan.

After visit Procedures (1 Order)

Referral to Upper GI Cancer MDT Cancer Pathway ✓ Accept ✗ Cancel Remove

Cancer Pathway, Internal Referral

Questions:

Prompt	Answer	Comments
1. Referring Hospital:	Addenbrooke's Hospital Peterborough City Hospital West Suffolk Hospital Hinchingbrooke Hospital King's Lynn & Wisbech Hospital Bedford Hospital Ipswich Hospital Norfolk & Norwich University Hospital James Paget Hospital Papworth Hospital Princess Alexandra Hospital (Harlow) Other Hospital	
2. Reason for discussion:	Assessment of post-surgical specimen Assessment of relapse or recurrence Assessment of treatment response Decision on suitability for surgery General discussion New patient for discussion New patient for HGD surveillance referral New patient for HGD symptomatic referral Review investigation	
3. Items for discussion:	Barium enema Barium swallow CT EMR Endoscopy EUS Laparoscopy MRI Octreotide scan Other Pathology PET Management	
4. Select appointment type:	Next available appointment Planned for specific date for clinical reasons	
5. Type of MDT	Local MDT Specialist MDT	
6. Brief clinical question for MDT (254 character limit):	<input type="text"/>	<input type="text"/>
7. Responsible consultant:	<input type="text"/>	<input type="text"/>
8. NHS or private patient?	<input checked="" type="radio"/> NHS <input type="radio"/> Private	

Comments (F6):

Insert SmartText

Reason for Referral:

EUS report:

There is a distal oesophageal tumour. There is no involvement of the gastro-oesophageal junction and no Barretts oesophagus. The tumour invades into but not beyond the muscularis propria. One enlarged lymph node measuring 2cm is seen.

FDG PET-CT report:

There is an area of increased avidity in the distal oesophagus. There is a further area of increased uptake lateral to oesophagus which appears to be a para-oesophageal lymph node. No distant metastases are seen.

Blood tests:

Hb 12.5	Na 135
Plt 171	K 4.0
WCC 5.4	Urea 4.5
Neut 3.5	Cr 91

Using this table from the ESMO guidelines, what is the TNM staging?

Definition of TNM (2009)

Primary tumor (T)

TX	Primary tumor cannot be assessed
T0	No evidence of primary tumor
Tis	Carcinoma <i>in situ</i> /High-grade dysplasia
T1	Tumor invades lamina propria, or sub-mucosa
T1a	Tumor invades mucosa or lamina propria or muscularis mucosae
T1b	Tumor invades sub-mucosa
T2	Tumor invades muscularis propria
T3	Tumor invades adventitia
T4	Tumor invades adjacent structures
T4a	Tumor invades pleura, pericardium, diaphragm or adjacent peritoneum
T4b	Tumor invades other adjacent structures such as aorta, vertebral body or trachea

Regional lymph nodes (N)

NX	Regional lymph nodes cannot be assessed
N0	No regional lymph node metastasis
N1	Metastasis in 1–2 regional lymph nodes
N2	Metastasis in 3–6 regional lymph nodes
N3	Metastasis in 7 or more regional lymph nodes

Distant metastasis

MX	Distant metastasis cannot be assessed
M0	No distant metastasis
M1	Distant metastasis

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The correct answer is T2N1M0.

What will the aim of his treatment be:

- curative
- palliative

Thinking back to the original consultation with his GP, what is his ECOG performance status?

- 0
- 1
- 2
- 3
- 4
- 5

What will the aim of his treatment be:

-curative

-palliative

The correct answer is curative because the patient has limited stage disease.

Thinking back to the original consultation with his GP, what is his ECOG performance status?

-0

-1

-2

-3

-4

-5

Mr Henrik told his GP he was still managing to work. Therefore his performance status is likely to be 0.

Looking at the ESMO guidelines (https://annonc.oxfordjournals.org/content/24/suppl_6/vi51.full.pdf+html) , what do you think the MDT outcome is likely to be for this patient?

-surgery

-chemotherapy followed by surgery

-chemoradiation followed by surgery

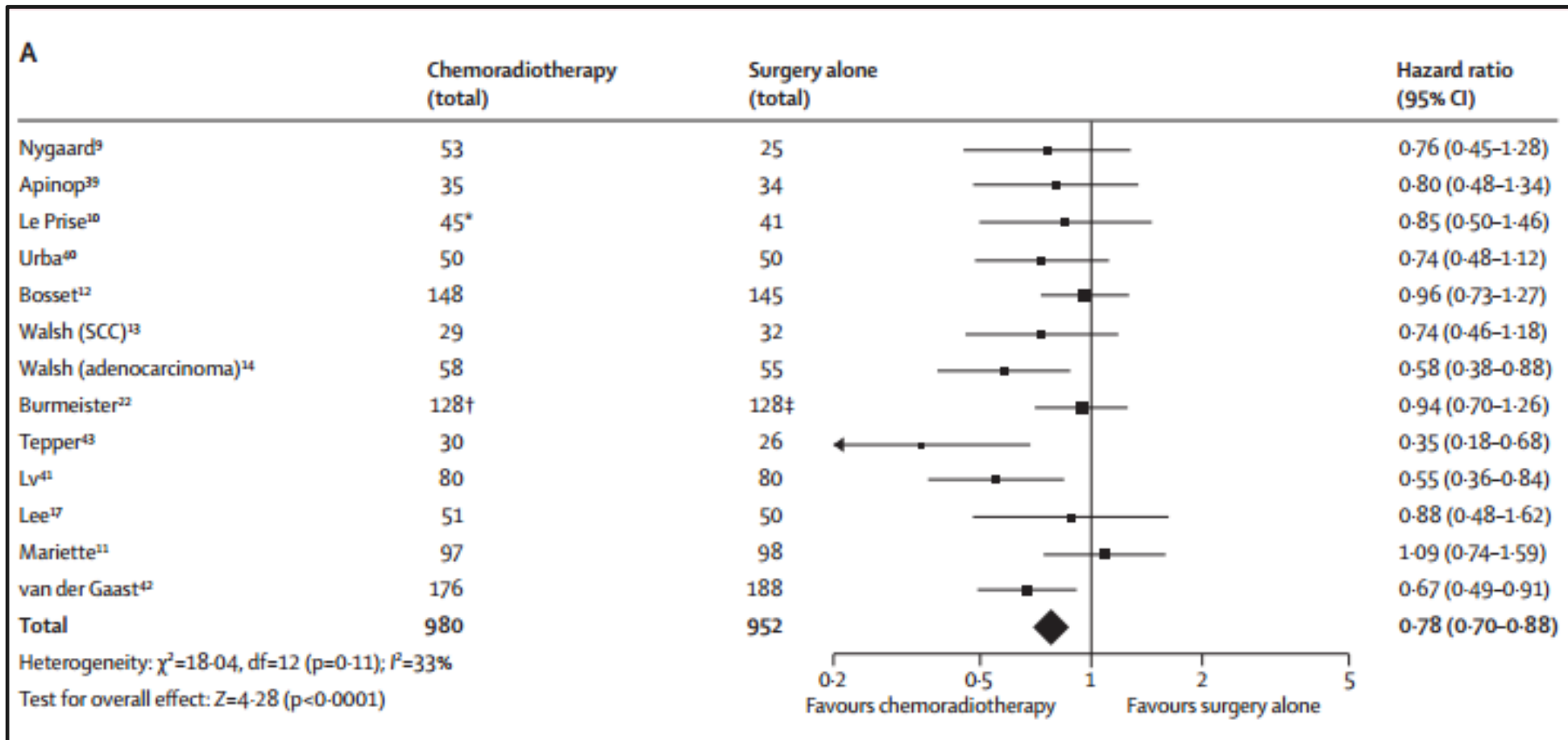
-chemoradiation

-chemotherapy followed by surgery followed by chemotherapy (peri-operative chemotherapy)

Looking at the ESMO guidelines (https://annonc.oxfordjournals.org/content/24/suppl_6/vi51.full.pdf+html) , what do you think the MDT outcome is likely to be for this patient?

- surgery
- chemotherapy followed by surgery
- chemoradiation followed by surgery
- chemoradiation
- chemotherapy followed by surgery followed by chemotherapy (peri-operative chemotherapy)

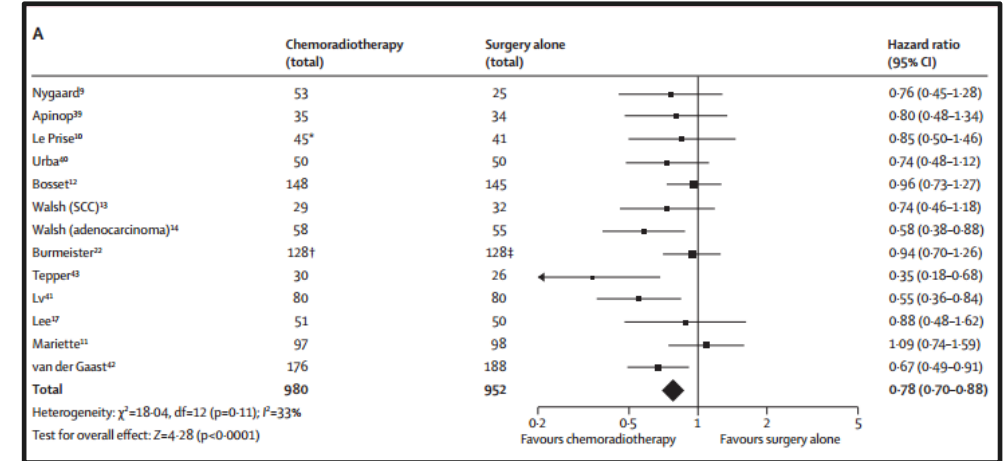
Both chemoradiation followed by surgery or peri-operative chemotherapy would be reasonable options based on the ESMO guidelines. The MDT recommends chemoradiation followed by surgery (also known as triple modality therapy), based on a 2011 Lancet Oncology meta-analysis by Sjoquist on behalf of the Australasian Gastro-Intestinal Trials Group which compared neoadjuvant chemoradiation + surgery with surgery alone....



Can you explain what this forest plot shows?

This forest plot from the meta-analysis we mentioned summarises the results of 13 studies.

- Each square represents the hazard ratio for all-cause mortality from one randomised controlled trial.
- The size of the square reflects the weighting for that study assigned by the authors, usually based on numbers of participants and methodological strength of the study.
- The centre of the diamond represents the summary hazard ratio for all the studies, with the ends of the diamond representing the two ends of the confidence interval.
- The result is that hazard ratio for mortality is below 1 for chemoradiation+surgery, meaning the risk of death from any cause is lower if you have chemoradiation+surgery compared to surgery alone.
- The 95% confidence interval does not cross 1, meaning the result is statistically significant.



Mr Henrik is given an appointment to discuss chemoradiation with a clinical oncologist, Dr Gilligan. Dr Gilligan explains that the treatment will involve altogether four cycles of cisplatin and 5-fluorouracil, and the radiotherapy treatment will start with the third cycle of chemotherapy.

Which side effects might the patient expect from cisplatin-5FU chemotherapy?

- nausea and vomiting
- tiredness
- reduction in blood counts (myelosuppression)
- tinnitus and hearing loss
- damage to kidneys
- diarrhoea

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The answer is – all of them together with the side-effects of the radiotherapy which include:

- pain on swallowing causing difficulty eating and drinking
- tiredness
- skin reddening
- lung scarring (fibrosis)
- risk of inducing a second cancer later in life

Doesn't sound very nice, does it?! However, Mr Henrik agrees to start treatment, and goes on to have both chemoradiation and surgery successfully. The total treatment time including recovery periods is 6 months. After this, Mr Henrik needs some lifelong dietary adjustment but goes back to work with no major disability.

Learning points

- A red flag presenting symptom
- Appropriate investigations to diagnose a patient with oesophageal cancer
- Integrating data for cancer staging
- Interpreting investigations and using 'co-factors' to decide upon treatment intent and a treatment plan
- Evaluating treatment options for oesophageal cancer
- Interpreting a forest plot from a meta-analysis

References

- Positive predictive values of $\geq 5\%$ in primary care for cancer: systematic review. Shapley et al. British Journal of General Practice 2010; 60: 681-688. DOI: 10.3399/bjgp10X515412
- Endoscopy picture from: A complete response to S-1 plus cis-diamminedichloroplatinum in advanced-stage esophageal and gastric adenocarcinoma: a case report. Matsuno et al. World Journal of Surgical Oncology 2012; 10:133. DOI: 10.1186/1477-7819-10-133
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- Survival after neoadjuvant chemotherapy or chemoradiotherapy for resectable oesophageal carcinoma: an updated meta-analysis. Sjoquist et al. Lancet Oncology 2011;12(7):681. DOI:10.1016/S1470-2045(11)70142-5