

# Diagnosing Lung Cancer

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The Royal Marsden's GP Education Programme

# Lung Cancer

- ❖ The second most common cancer in the UK
- ❖ The commonest cause of death from cancer in the UK
- ❖ In 2010 42,026 people were diagnosed in the UK
- ❖ In 2010 34,859 people died in the UK
- ❖ Incidence increases with age
- ❖ 56% occurs in men and 44% occurs in women



# Lung Cancer Staging and Survival

STAGE	TUMOUR	LYMPH NODES	METASTASES	5 YEAR SURVIVAL
1A	≤ 3 cm	0	None	~ 58-73%
1B	>2 cm ≤ 3 cm	0	None	~ 43-58%
2A	>5 cm ≤ 7 cm	1	None	~ 36-46%
2B	>5 cm	1/2	None	~ 25-36%
3A	Any	2/1	None	~ 19-24%
3B	Any	2/3	None	~ 7-9%
4	Invasion or tumour nodules	3 or 2	Present	~ 4-10%



# Lung Cancer Stage at Diagnosis

STAGE	TUMOUR	LYMPH NODES	METASTASES	STAGE AT PRESENTATION
1A	$\leq 3$ cm	0	None	14.5%
1B	$>2$ cm $\leq 3$ cm	0	None	
2A	$>5$ cm $\leq 7$ cm	1	None	7.3%
2B	$>5$ cm	1/2	None	
3A	Any	2/1	None	31.8%
3B	Any	2/3	None	
4	Invasion or tumour nodules	3 or 2	Present	35.8%



# Risk Factors for the Development of Lung Cancer

- ❖ Smoking
- ❖ Family history
- ❖ Asbestos exposure
- ❖ Diagnosis of COPD
- ❖ Age
- ❖ History of pneumonia



# Symptoms of lung cancer

- ❖ Cough
- ❖ Haemoptysis
- ❖ Dyspnoea
- ❖ Weight loss
- ❖ Chest pain
- ❖ Shoulder pain
- ❖ (Fatigue)
- ❖ Hoarseness
- ❖ Back pain



# Signs of Lung Cancer

- ❖ Finger Clubbing
- ❖ Supraclavicular lymphadenopathy
- ❖ Chest Signs- pleural effusion, fixed wheeze
- ❖ Evidence of metastatic disease- e.g. hepatomegaly, subcutaneous 'lumps'
- ❖ Hoarse Voice



# Investigations

- ❖ CXR
- ❖ (Anaemia)
- ❖ (Raised platelet count)
- ❖ (Hypercalcaemia)
- ❖ (Hypoalbuminaemia)





# Lung Cancer Presentation- Never Smoker

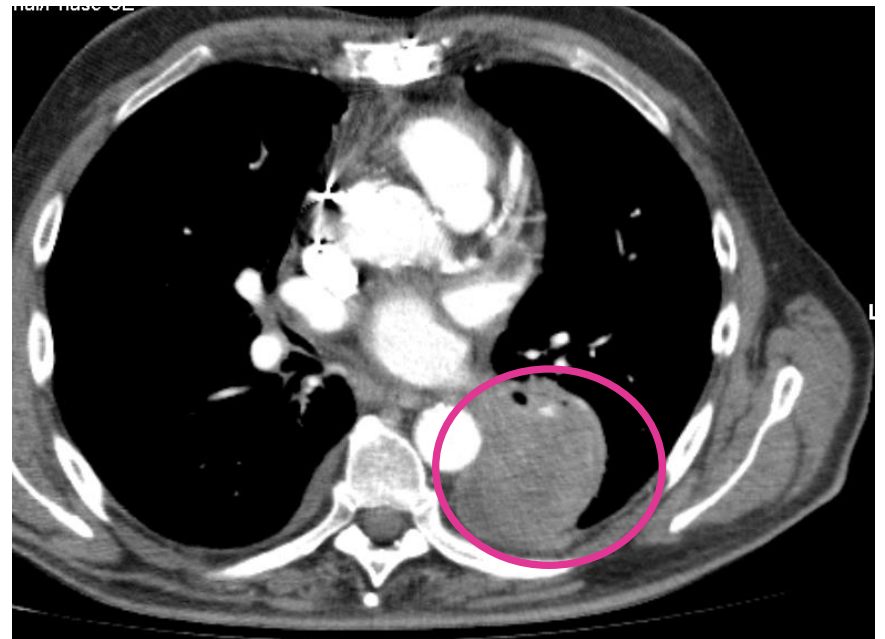
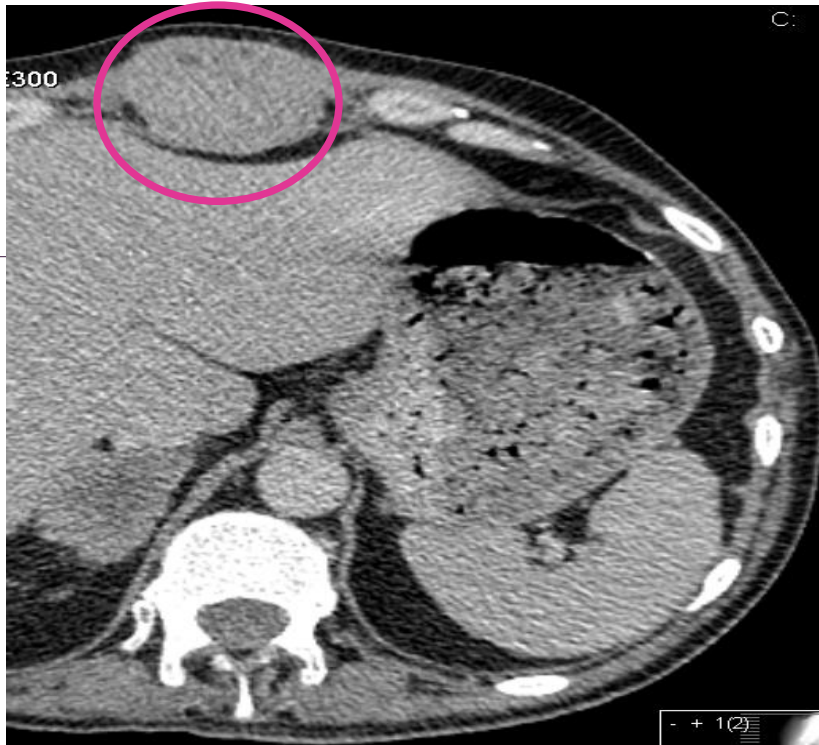
- ❖ 55 year old male presents complaining of fatigue. He has no other symptoms and is investigated with a FBC and TFTs. He found to be have a raised platelet count, but no other abnormality.
- ❖ 4 weeks later he returns and mentions he has a small lump on the front of his chest. He reassured that this is nothing to worry about but that his FBC should be repeated in 4 weeks
- ❖ 7 weeks later he returns complaining of increasing fatigue, loss of appetite and weight loss of 3 pounds; he mentions that the lump has grown. The repeat FBC demonstrates that the platelet count is still raised and the haemoglobin has now fallen from 140 g/L to 120 g/L.



# Lung Cancer Presentation-Never Smoker

- ❖ In view of the weight loss and anaemia he referred to a gastroenterologist and undergoes an ODG; this is normal.
- ❖ He is continuing to lose weight and has stopped working due to fatigue. At the insistence of the patient that ‘something is wrong’ the gastroenterologist agrees to request a CT of the thorax and abdomen





# Risk Factors for the Development of Lung Cancer

1. Smoking ✕
2. Family history ✕
3. Asbestos exposure ✕
4. Diagnosis of COPD ✕
5. Age ✕
6. History of pneumonia ✕



# Symptoms of lung cancer

- ❖ Cough ✗
- ❖ Haemoptysis ✗
- ❖ Dyspnoea ✗
- ❖ Weight loss ✓
- ❖ Chest pain ✗
- ❖ Shoulder pain ✗
- ❖ (Fatigue) ✓
- ❖ Hoarse voice ✗
- ❖ Back pain ✗



# Signs of Lung Cancer

- ❖ Finger Clubbing ✗
- ❖ Supraclavicular lymphadenopathy ✗
- ❖ Chest Signs- pleural effusion, fixed wheeze ✗
- ❖ Evidence of metastatic disease- e.g. hepatomegaly, subcutaneous 'lumps' ✓
- ❖ Hoarse Voice ✗



# Investigations

- ❖ CXR- not done but would have been abnormal
- ❖ (Anaemia) ✗
- ❖ (Raised platelet count) ✓
- ❖ (Hypercalcaemia) not done but would have been normal



# Which of the following are true in lung cancer in never smokers?

1. 5% of lung cancers occur in people who have never smoked
2. The incidence is the same in men and women
3. It is associated with molecular mutations





# Molecular Mutations

- 
- Can we embed the CMP video in here?



# Lung Cancer Presentation

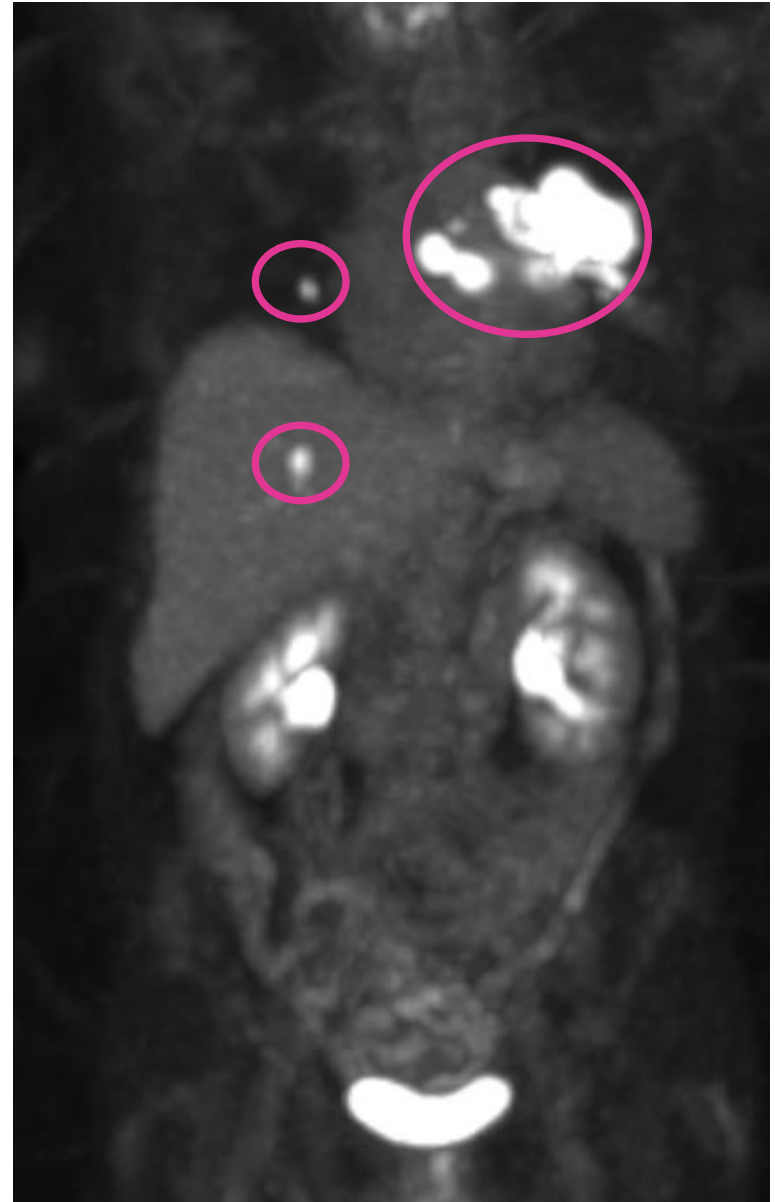
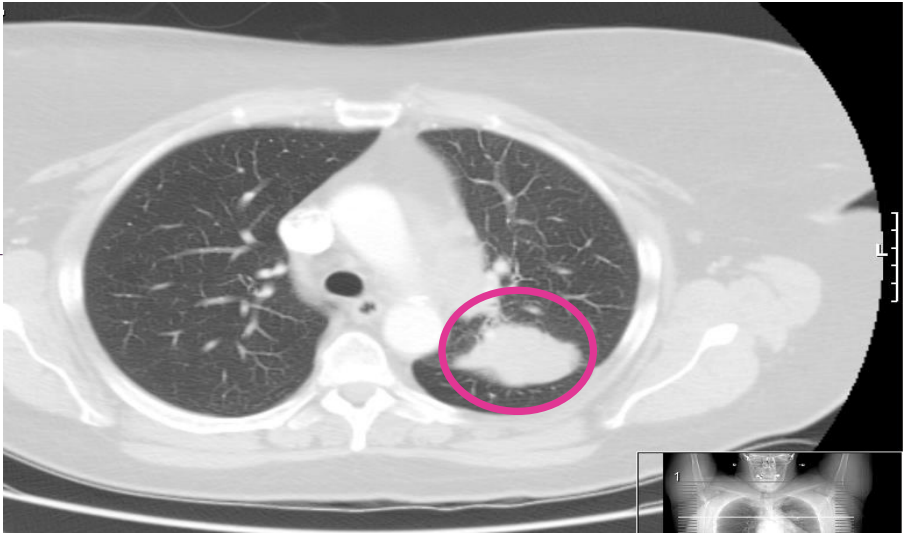
- ❖ 53 year old female officer worker presents in December 2012 complaining of pain under the left arm.
- ❖ She is an ex-smoker, having stopped 20 years ago. She started smoking at the age of 14 and smoked an average of 20 cigarettes a day. Her father died of lung cancer at the age of 62 and she was treated in hospital for pneumonia 10 years ago
- ❖ She examined and reassured that the pain is musculoskeletal, though given her smoking history a CXR is requested which is reported as normal
- ❖ She re attends in June 2013. The pain under the arm pit never resolved but is now worse than ever, is radiating around to her back and she has a non-productive cough for the last month. She can no longer sleep, has taken the last week off work and requests a sick note.



# Lung Cancer Presentation

- ❖ Spirometry is undertaken which demonstrates obstructive airways disease
- ❖ She is sent for a repeat CXR, which demonstrates a left upper lobe abnormality.
- ❖ She is treated with a course of antibiotics for a chest infection
- ❖ A repeat CXR is undertaken 8 weeks later, which demonstrates no improvement.
- ❖ She is referred as a TWR to respiratory





# Risk Factors for the Development of Lung Cancer

1. Smoking ✓
2. Family history ✓
3. Asbestos exposure ✗
4. Diagnosis of COPD ✓
5. Age ✗
6. History of pneumonia ✓



# Symptoms of lung cancer

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- ❖ Hoarse Voice ✕



# Investigations

- ❖ CXR initially normal
- ❖ (Anaemia) ✗
- ❖ (Raised platelet count) ✗
- ❖ (Hypercalcaemia) ✗



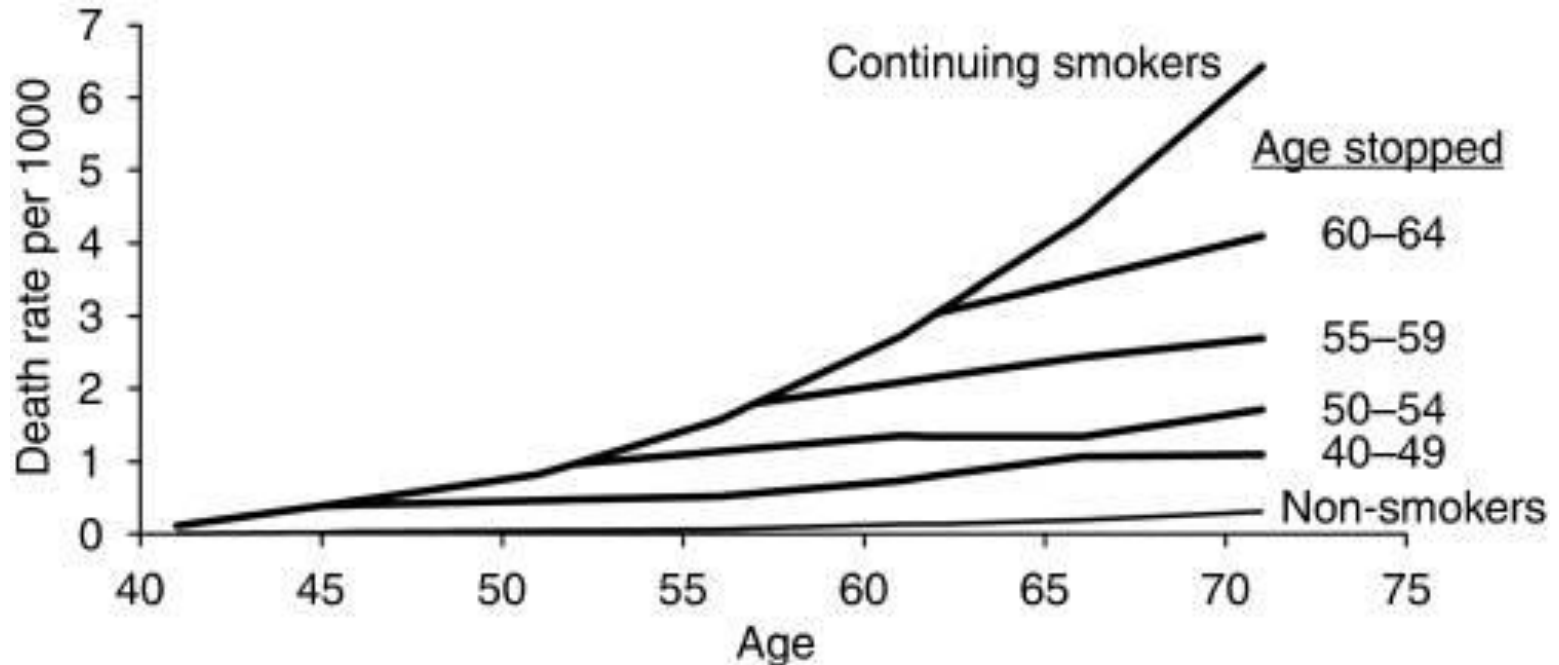


# Smoking and lung cancer; which of the following are true?

1. The total number of cigarettes smoked in a lifetime is more important than the number of years.
2. The risk increases substantially after 40 years of smoking
3. After 10 years of stopping smoking, the risk of lung cancer is the same as a never smoker
4. Stopping smoking at any age reduces the risk of developing lung cancer
5. Starting smoking under the age 20 is associated with a higher risk of developing lung cancer



# Smoking as a risk factor for lung cancer



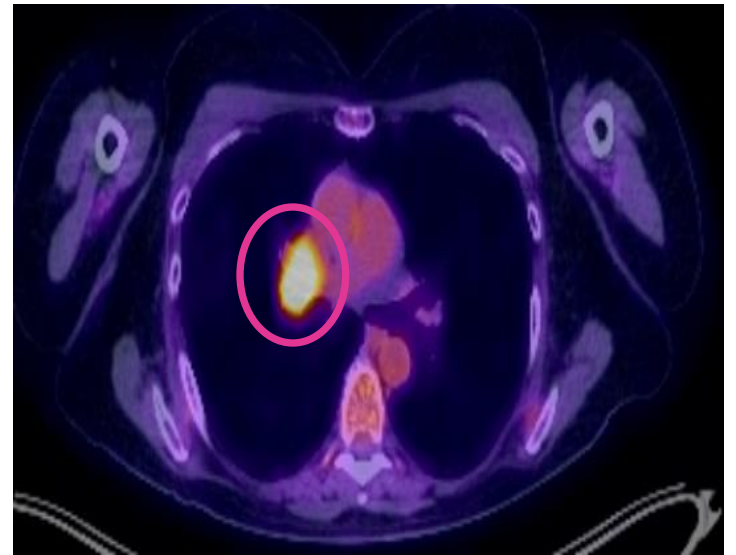
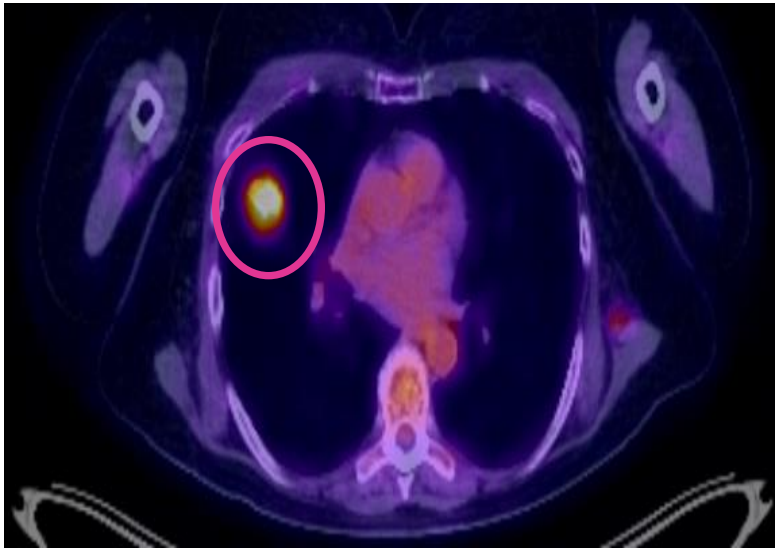
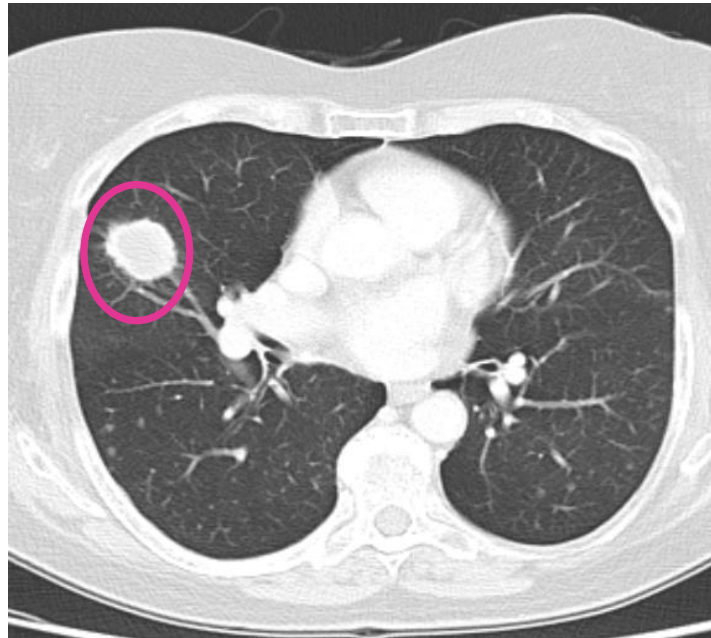
Halpern MT, Gillespie BW and Warner KE JNCI 1993 85(6)457-64



# Presenting with metastatic disease

- ❖ 73 year old female, never smoker presents to her GP with an episode of suddenly being unable to speak; this resolved after a few minutes
- ❖ She is referred to the TIA service and undergoes further investigation.





# Risk Factors for the Development of Lung Cancer

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- ❖ Hoarse Voice ✕



# Investigations

- ❖ CXR- would have been abnormal;
- ❖ (Anaemia) ✗
- ❖ (Raised platelet count) ✗
- ❖ (Hypercalcaemia) ✗





## When to refer?

- ❖ Persistent symptoms last more than 3 weeks
- ❖ CXR suggestive of lung cancer- CXR can be normal
- ❖ Symptoms suggestive of metastatic disease- unremitting pain, weight loss, shortness of breath.
- ❖ Signs of superior vena cava obstruction
- ❖ Stridor
- ❖ Any patient with unexplained symptoms who is at high risk?

