CASE REPORT

A dangerous cough

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SUMMARY

Patient X is a 48-year-old retired potteries worker who presented to his general practitioner (GP) with a non-productive cough, which had lasted over 1 month, and it was a television advert that he had seen that prompted him to visit his doctor. A cough is the most common presenting complaint for patients when they visit their GP and when considering differential diagnoses it is important to look at a patient's medical, drug and social history. It would have been easy for the GP to dismiss the cough as an exacerbation of the patient's asthma based on his medical history, but on further questioning into the patient's social history an emergency chest x-ray was ordered, which later revealed a bronchial carcinoma. This case highlights the importance of the media in healthcare advertising and describes how a fairly innocent presentation can later turn out to be a more sinister pathology.

BACKGROUND

This case highlights how healthcare advertising is important in encouraging patients to identify and investigate serious illnesses at an early stage.

How does lung cancer present?

Lung cancer is the second most common cancer in the UK and in 2009, over 41 000 people died of lung cancer.¹ It is a cancer with the highest mortality, being the cause of 22% of all cancer-related deaths.¹ Over 8 out of 10 lung cancer cases occur in those ≥ 60 and smoking is the main cause, although around 1 in 8 people with lung cancer have never smoked.¹ It commonly presents with the following symptoms; cough (80%), haemoptysis (70%), dyspnoea (60%) and chest pain (50%).²

Lung cancer screening in the UK

There is currently screening in the UK for abdominal aortic aneurysms, breast cancer, bowel cancer, cervical cancer and diabetic retinopathy. However, there is no existing screening programme for lung cancer, even though it is the second most common cancer in the UK. So why is this? The UK National Screening Committee have not recommend a population screening programme for lung cancer by chest x-ray because of its:³

- ▶ Low sensitivity
- ▶ Low number of cancer patients that would be found
- ▶ The high costs involved
- ▶ The risks of screening.

Trials are, however, currently looking at fluorescence bronchoscopy, spiral CT scans and blood tests as potential screening methods.³

There is presently a lung cancer screening trial running in Scotland, where the incidence of lung

cancer is double that of the rest of the UK.⁴ This screening programme involves screening those who have smoked for at least 20 pack-years, looking for antibodies against tumour-related antigens through a blood test.⁵ Those with high antibody levels will be referred for a CT scan.⁵ It is hoped that this screening programme will reduce the 5-year mortality of lung cancer through an early detection, as currently two-thirds of patients diagnosed with lung cancer are at a late stage, when their survival chances are lower.⁵ There have also been similar trials in the USA for more than 2 years.⁵

Be clear on cancer campaign

So without a screening programme, the department of health has set up the 'Be Clear on Cancer Campaign' to promote the earlier diagnosis of lung cancer.⁶

This campaign is being run on the TV, radio, print and online media and it has a simple message—it recommends that anyone with a persistent cough lasting for 3 weeks or more should visit their general practitioner (GP).⁶

The campaign follows an awareness-raising pilot in the Midlands during October 2011.⁶ The outcome of this pilot showed that there was improved knowledge of lung cancer and increased confidence in recognising the symptoms, when previously only 1 in 10 people realised that a persistent cough could be a key symptom of lung cancer.⁶ This consequently led to a 23% increase in attendance to primary care of patients with relevant symptoms and based on a sample of primary care trusts, there was an increase in referrals for chest x-rays and chest CT scans as compared with those during the same period in the previous year.⁶

The 'Be Clear on Cancer Campaign' was completely launched in May 2012 and is targeted at both those over 55 and those in a lower socio-economic group, as they have been shown to delay seeing their GP.⁷

It is hoped that this campaign will save around 1300 lives a year. It also aims to reduce the 5-year mortality of lung cancer from 93% (after detection at a late stage—around 80% of patients with lung cancer have stage III or IV when diagnosed) to 20% (when diagnosed at a much earlier stage).⁶

The campaign is also endorsed by many celebrities including Sir Alex Ferguson, Ricky Gervais and Duncan Bannatyne.⁶

CASE PRESENTATION

Patient X is an obese 48-year-old Caucasian man who presented to his GP with a 4-week history of a persistent cough.

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He had first noticed this cough about 4 weeks previously while gardening and he described it as being loud and brassy. Upon questioning, it was revealed the cough was non-productive and there was no haemoptysis or associated chest pain. He mentioned that had some dyspnoea together with the cough, but he said that was normal for him.

There was no wheeze, stridor or hoarseness alongside the cough and the patient had no history of any fever or recent foreign travel.

This patient presented with very vague symptoms—a persistent cough which he described as being loud and brassy—and maybe some associated shortness of breath.

As clinicians, we are already trying to formulate a differential diagnosis in our heads so that we can take a focused history. This is especially important in a primary care setting when there is often only 10 min available per consultation. However, based on the patient's history thus far, it is difficult to evaluate what the cause of the cough is, so we need to look into the patient's history further.

It was noted that the patient's medical history included scoliosis, ankylosing spondylitis, hypertension and asthma. The patient did not know of any family history since he was adopted and he had no previous surgical history.

He was on the full-works for his resistant hypertension and he took ramipril 2.5 mg, amlodipine 5 mg, bendroflumethiazide 2.5 mg and terazosin 1 mg.

He also took salbutamol 4 mg and beclomethasone 200 µg for his asthma and occasionally paracetamol 500 mg for his back pain. He had no known drug allergies.

His social history revealed that he lived with his wife and that he had smoked for 20 pack-years as well as had been drinking a glass or two of wine every Friday night. He had previously worked in the potteries but had now retired (meaning that he had been exposed to silica, a carcinogen). The patient denied using any illicit drugs.

Additionally, and most notably, what the patient specified was he only visited his GP on that particular day because a television advert he saw stated that anyone with a persistent cough lasting for 3 weeks or more should visit their GP. This was as a result of a television advertisement that he had seen as part of the 'Be Clear on Cancer Campaign'.

INVESTIGATIONS

Vital signs

The patient's basic observations revealed a patent airway and that the patient was slightly tachypnoeic (respiratory rate—20), although the patient's saturations were 99% on air. The patient's blood pressure (115/62 mm Hg) and pulse (72 beats/min) were both normal and the patient had no fever (temperature—36.4°C). The patient scored full marks on the Glasgow Coma Scale.

Respiratory examination

A respiratory examination showed that the patient seemed comfortable at rest and was in no apparent respiratory distress. On inspection, clubbing and nicotine staining were noted as well as a slight pallor of conjunctiva. There was no apparent lymphadenopathy in neck. Inspection and palpation of chest were both normal, however, there was dullness to percuss over left lower lobe as well as reduced air entry and diminished breath sounds over left chest on auscultation.

Figure 1 A chest x-ray showing a large speculated mass in the left lower lobe of the lung.

Plan

Based on the patient's history and examination, the plan was to send the patient for an emergency chest x-ray under the 2-week cancer referral pathway and to order blood tests.

Chest x-ray

One week later, the chest x-ray returned and this reported changes indicative of Chronic Obstructive Pulmonary Disease (COPD), pleural thickening bilaterally and scarring and calcification over the right apex. It also revealed a large speculated mass in the left lower lobe of the lung (figure 1).

Blood

At this point, the blood reports were also ready. The full blood count showed that the patient was slightly anaemic (haemoglobin—9.5 g/dl), although the patient's urea and electrolytes, liver function tests and calcium all were found to be normal.

CT thorax and abdomen with contrast and bronchoscopy

Following this, a CT of the thorax and abdomen with contrast was performed, and this again revealed an irregular solid mass in the left lower lobe (figure 2). A subsequent transbronchial lung biopsy was taken from this mass in the left lower lobe seen at bifurcation between the left B7 and B8 bronchi. The biopsy revealed a non-small-cell adenocarcinoma staged at T1aN1M0.

Figure 2 A CT of the thorax and abdomen with contrast showing the same irregular solid mass in the left lower lobe.

DIFFERENTIAL DIAGNOSIS

The differential diagnoses of a cough are wide and varied, but can include the following:²

- ▶ Asthma
- ▶ Iatrogenic—ACE inhibitors
- ▶ Cardiogenic—congestive heart failure, mitral stenosis
- ▶ Aspiration—achalasia, foreign body
- ▶ Tuberculosis
- ▶ Malignancy—lung cancer
- ▶ Pulmonary embolism
- ▶ Thyroid enlargement—goitre
- ▶ Bronchitis or pneumonia.

TREATMENT

After multidisciplinary team review, it was decided that the patient should have an elective pulmonary wedge resection via thoracotomy to remove the mass seen in the left lower lobe. This protocol was implemented as stated under the National Institute for Health and Clinical Excellence guidance.⁸

OUTCOME AND FOLLOW-UP

The patient's surgery was successful with no intraoperative complications developing. He went on to make an unremarkable recovery postoperatively.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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Learning points

The significant learning points that can be taken from this case are:

- ▶ Bronchial carcinoma can present at any age, including among those who are less than 50 years of age.
- ▶ Healthcare advertising is important in encouraging patients to identify and investigate serious illnesses at an early stage.
- ▶ A fairly innocent presentation can later turn out to be a more sinister pathology.

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