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CASE REPORT

Headache and drowsiness in a 22 year old student

A 22 year old female medical student presented as an emergency with headache and drowsiness. She shared a flat with three other students, all of whom were well, and who found her in bed after she failed to turn up for lectures. She had no relevant medical history and was well the day before. The only drug she was taking was the oral contraceptive pill.

On examination she was flushed and drowsy, afebrile, and had no skin rash. Her pulse was 100 (sinus rhythm), blood pressure was 120/80 mm Hg, the Glasgow coma score was 11/15 (localising pain, inappropriate speech, eye opening in response to speech), and pulse oximetry showed an oxygen saturation on air of 98%. Her blood gases were as follows:

- arterial blood gas on air pH 7.35 (normal range 7.35-7.45)
- partial pressure of oxygen (pO₂) 8.2 kPa (>10.6 kPa)
- partial pressure of carbon dioxide (pCO₂) 5.8 kPa (4.7-6 kPa)
- bicarbonate ions 24 mmol/l (24-28 mmol/l).

The rest of the examination, including a detailed neurological examination and funduscopy, was normal.

1 What is the diagnosis?

2 How is the diagnosis confirmed?

3 What is the treatment?

Submitted by Hon Man Jori, Harry R Dalton

Cite this as: *BMJ* 2008;337:a1481

STATISTICAL QUESTION

P values

Which one statement is true of the P value?

- It is the probability that the null hypothesis is true
- It is the probability that the alternative hypothesis is true
- It is the probability that the null hypothesis is false
- It is the probability that the alternative hypothesis is false
- It is the probability of the given result or more extreme results if the null hypothesis were true.

Submitted by John Fletcher

Cite this as: *BMJ* 2008;337:a201

PICTURE QUIZ

An interesting chest radiograph



Patient's posteroanterior radiograph (left) and lateral chest radiograph (right)

A 63 year old man presented with a two week history of shortness of breath, fatigue, and cough. He had a 20 pack year ((number of cigarettes smoked each day times number of years smoked)/20) smoking history and no appreciable occupational exposure to dusts such as asbestos or coal. On examination his trachea was slightly deviated to the left with slightly diminished breath sounds over the left lung.

1 What does the figure show?

2 What is the luftsichel (air sickle) sign?

3 What disease processes can cause this finding?

4 What further investigations are needed?

Submitted by Sylvia A O'Keefe, Andrew McGrath, Graham Wilson

Cite this as: *BMJ* 2008;337:a1505

The winner of the prize quiz on hernias was Christopher Ho

PRIZE QUIZ: Men's health

Each week we offer a prize of a *BMJ* memory stick to the person who answers correctly, in the quickest time, a set of examination questions taken from OnExamination. To enter the quiz, go to www.onexamination.com/endgames. The competition closes at midnight on Wednesday, and the winner will be announced in the print *BMJ*.

Here's one question from this week's quiz on men's health from the postgraduate GP examination.

Describe these statements—true or false.

After vasectomy:

- Epididymo-orchitis is the most common immediate side effect
- Plasma testosterone concentration shows a significant decline in the first 6 months
- Sperm autoantibodies develop in at least 40% of patients
- The failure rate is approximately 1/2000
- There is a positive correlation with subsequent gall bladder disease

Once the competition closes answers to this question can be viewed at www.onexamination.com/Endgames/LastEndgame.aspx.