

ENDGAMES

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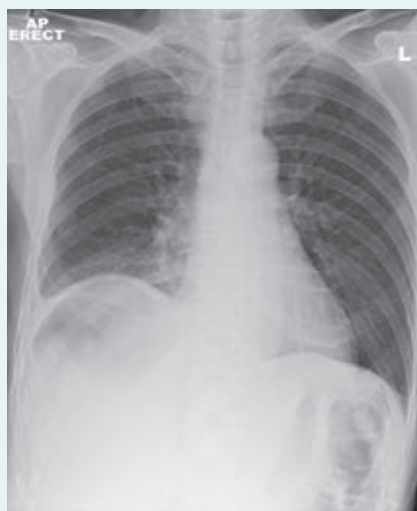
FOR LONG ANSWERS

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PICTURE QUIZ

Free air, but where?



A 62 year old fit and well Romanian man presented to our department with a two week history of worsening acute localised pain in the upper abdomen and vomiting. His surgical history included an open appendicectomy as a child and laparoscopic cholecystectomy 20 years ago. On presentation he had fever (39°C) and tachycardia (104 beats/min). His blood pressure was 125/73 mm Hg. He displayed generalised abdominal tenderness, worse in the right upper quadrant, with localised guarding in the right upper quadrant.

Blood tests showed a raised white cell count of $16 \times 10^9/L$ (reference range $4-10 \times 10^9/L$) and a C reactive protein concentration of 277 mg/L (reference value <9 mg/L; $1 \text{ mg/L} = 9.25 \text{ nmol/L}$). A frontal projection erect chest radiograph was reported as showing pneumoperitoneum (figure).

- 1 What is the differential diagnosis given the clinical features only?
- 2 What does the chest radiograph show?
- 3 What features on the chest radiograph go against this being pneumoperitoneum? What are the alternative diagnoses?
- 4 What is the next appropriate step in managing this patient?

Submitted by P Morar, J Hodgkinson, H Hirji, and S Gould

Cite this as: *BMJ* 2013;347:f5860

STATISTICAL QUESTION

Prospective cohort studies: advantages and disadvantages

Researchers investigated the association between opium use and subsequent risk of death. A prospective cohort study design was used. Participants were 50 045 people in north-eastern Iran aged 40-75 years at baseline. Recruitment took place between January 2004 and June 2008, and participants were followed until May 2011. The median length of follow-up was 4.7 years per participant. The main outcomes were death from all causes, plus all major subcategories.

Information about opium use was collected at baseline. Participants were asked their age when they started using opium and subsequent length of use, typical amount used, frequency of use, and routes of administration. Information about exposure to a wide variety of other risk factors, including tobacco smoking and alcohol consumption, was also collected at baseline. During follow-up, participants were contacted annually by telephone with detailed questions about their health status

and any hospital admissions or outpatient procedures. Opium use and exposure to other risk factors were not systematically updated.

The study concluded that opium users have an increased risk of death from multiple causes compared with non-users. Increased risks were also seen in people who had used low amounts of opium for a long period, plus those who had no major illness before use.

Which of the following statements, if any, are true?

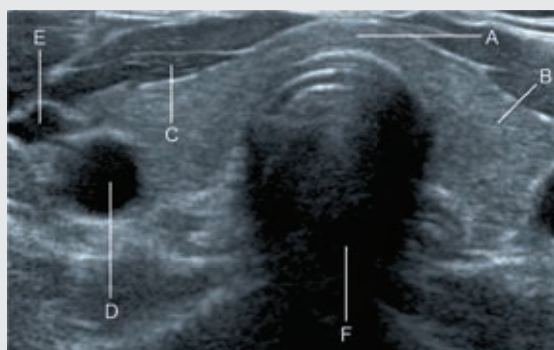
- a) Recall bias was minimised
- b) It was possible to estimate the population at risk
- c) It can be inferred that opium use causes an increased risk of death
- d) The results may be biased if a substantial number of cohort members were lost to follow-up

Submitted by Philip Sedgwick

Cite this as: *BMJ* 2013;347:f6726

ANATOMY QUIZ

Transverse ultrasound through the thyroid gland



Identify the structures labelled A-F in this transverse ultrasound through the thyroid gland.

Submitted by Sundip D Udani

Cite this as: *BMJ* 2013;347:f6182

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