FOR SHORT ANSWERS
See p 1406

FOR LONG ANSWERS
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ENDGAMES

We welcome contributions that would help doctors with postgraduate examinations
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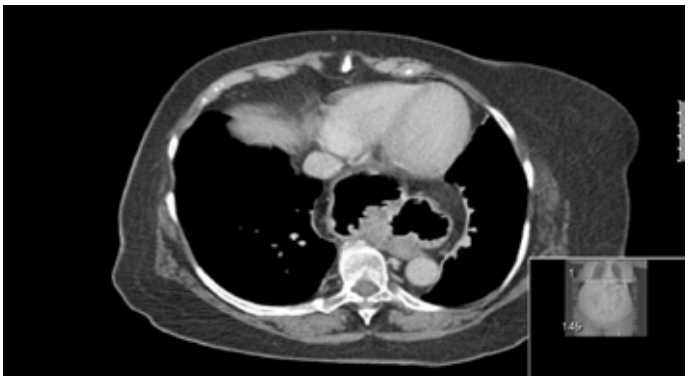
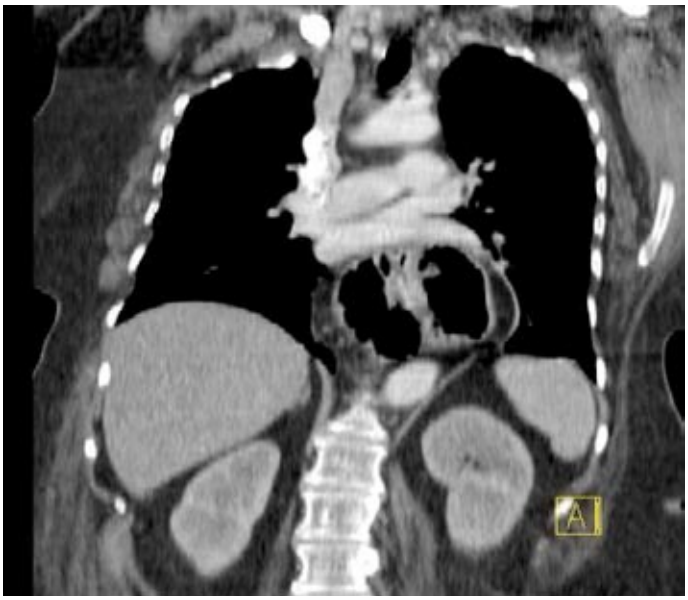


PICTURE QUIZ
Nausea with a twist

An 81 year old woman presented to our department with a two day history of nausea and retching but was unable to vomit. For the past three weeks she had been experiencing dysphagia with only small amounts of liquid tolerated, excessive belching, and weight loss. She had no abdominal pain and her bowels were opening normally. She had a known hiatus hernia and previous oesophagitis for which she was taking regular omeprazole.

On examination she did not have a fever but she was dehydrated and tachycardic. Her abdomen was soft and non-tender and a cardiorespiratory examination showed no abnormalities. She underwent chest radiography and computed tomography of her chest and abdomen (figs 1 and 2). She was treated successfully for her condition and discharged home.



1 What are the differential diagnoses for this patient?
2 What is the abnormality on computed tomography?
3 What is the most likely diagnosis?
4 How can this condition be treated?

Submitted by Kenneth J Porter, Daniel Thomas, Pajab Kerwat, and Sumantra Kumar
Cite this as: *BMJ* 2010;340:c2955

STATISTICAL QUESTION
Sample size calculations II

A randomised controlled trial investigated whether a computerised feedback device modified eating behaviour and resulted in weight loss in obese adolescents. The primary outcome was change in body mass index (BMI) from recruitment to 12 months. BMI was calculated as weight (kg)/[height (m)]^2, adjusted for age and sex. The control intervention was standard lifestyle modification therapy.

The optimal sample size to compare the computerised device with standard care was calculated for the primary outcome. Using data from a previous study, the researchers predicted that the mean change in BMI at 12 months with standard therapy would be a reduction of 0.17 (SD=0.267) kg/m^2. For the computerised device to be considered effective, it should double this mean reduction and achieve a decrease in BMI of 0.34 kg/m^2 (the smallest effect of clinical interest). A total sample size of 80 children (40 in each treatment arm) at baseline was required to achieve 80% power using a two sided hypothesis test and critical level of significance of 0.05. A total of 106 individuals were randomly allocated to each study arm, but by 12 months some participants in each arm had withdrawn.

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

a) A decrease in the magnitude of the smallest effect of clinical interest would require a larger sample size

b) The power of the study was increased as a result of the withdrawal of participants

c) The sample size should have been adjusted at baseline for possible withdrawals in order to maintain power of 80%

d) The above trial was a parallel study design

Submitted by Philip Sedgwick
Cite this as: *BMJ* 2010;340:c3299

ON EXAMINATION QUIZ
Paediatric trauma

This week's quiz is on paediatric trauma and is taken from the OnExamination revision questions for the MRCS part 1 exam.

A 10 year old boy falls while running in the school playground, injuring his right forearm. He is tender over his distal radius. A radiograph shows a displaced fracture through the distal epiphysis, with a fragment of metaphyseal bone also broken.

How would you classify this injury in the commonly used Salter-Harris classification?

A Salter-Harris type 1
B Salter-Harris type 2
C Salter-Harris type 3
D Salter-Harris type 4
E Salter-Harris type 5