ENDGAMES

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PICTURE QUIZ A congenital anomaly in a preterm newborn

A boy was born by spontaneous preterm delivery at 33 weeks' gestation (birth weight 1340 g). The pregnancy had been uneventful and no abnormalities had been noticed during regular obstetric checkups, including ultrasonographic evaluation.

On delivery, the infant had no respiratory drive and a pulse of around 80 beats a minute. After proper positioning to open the airway, his breathing was briefly supported by bag and mask. A heart rate above 100 beats/min was maintained throughout resuscitation. The one minute and five minute Apgar scores were 5 and 8, respectively.

The newborn was transferred from the delivery suite to the neonatal intensive care unit. Shortly after admission, an umbilical catheter was inserted for administration of parenteral nutrition. A nasogastric tube was passed to start enteral feeding. A chest and abdomen radiograph, obtained to verify proper positioning of the umbilical catheter, revealed an unanticipated congenital anomaly.

1 The Apgar score is composed of five items. What are they?
2 Which congenital anomaly of the internal organs is seen on the chest and abdomen radiograph?
3 What are the immediate and subsequent management priorities?
4 Which sequence of malformations is most frequently associated with this anomaly?
5 Given the appearance of the radiograph, is the intravascular catheter inserted in the umbilical vein or in an umbilical artery?

Submitted by Marijn J Schuurman, Simon G Robben, Jasper V Been
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STATISTICAL QUESTION
Sampling III

The prevalence, awareness, treatment, and control of hypertension in the general adult population of China were investigated. To ensure a representative sample of the population, the country was listed by locality (rural v urban communities) and then region (north v south). Twenty naturally occurring communities (clusters) were randomly selected, equally distributed between streets in urban areas and townships in rural areas for both the north and south. Within each cluster, equal numbers of men and women were randomly selected for each 10 year age range between 35 and 74 years.

Which one of the following best describes the sampling method used in the above study?

a) Cluster sampling
b) Snowball sampling
c) Stratified cluster random sampling
d) Quasi-random sampling

Submitted by Philip Sedgwick
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CASE REPORT Diagnostic difficulties with a lipaemic blood sample

A 38 year old woman with type 2 diabetes controlled by her diet was referred for emergency assessment in hospital by her general practitioner after complaining of epigastric pain radiating to her back.

The patient was tachycardic and had epigastric tenderness. A diagnosis of acute pancreatitis was suspected, but the patient's serum amylase concentration was normal at 52 U/l (normal range 28-100 U/l) so alternative diagnoses were considered. The blood sample was noted to be lipaemic and a lipid profile was requested: serum cholesterol level was 27.9 mmol/l (1078.9 mg/dl) and serum triglyceride concentration was found to be greater than 100 mmol/l (8900 mg/dl). Chest radiograph did not show any gas under the diaphragm.

The patient was prescribed simvastatin 40 mg once a day and commenced on an insulin infusion to decrease her serum triglyceride levels. She was also treated with intravenous fluids, but her abdominal pain worsened during the first 24 hours of hospital admission despite analgesia.

1) What is the suspected diagnosis and what is the likely cause?
2) Why might the serum amylase result be unreliable in these circumstances?
3) Is there another way to measure amylase levels?
4) What further investigation would be most appropriate to establish the diagnosis?

Submitted by Augustin M S Brooks, Richard B Paisey, Michael J Waterson, Jamie C Smith
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ON EXAMINATION QUIZ Chronic obstructive pulmonary disease

The answers to this question, and more questions on this topic, are available from www.onexamination.com/endgames until midnight on Wednesday This week's quiz is on chronic obstructive pulmonary disease and is taken from the OnExamination revision questions for the MRCP parts 1 and 2 exams.

Which one of the following statements is true of chronic obstructive pulmonary disease?

A Patients show at least a 15% improvement in forced expiratory volume in one second (FEV_1) after nebulised bronchodilator
B Inhaled corticosteroid usage does not improve long term prognosis
C Breathlessness is uncommon until the FEV_1 falls to around 50% of that predicted
D Emphysema is associated with increased transfer factor
E In advanced cases there is reduced pulmonary vascular resistance