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PICTURE QUIZ

A 79 year old man with a lesion on his cheek



A 79 year old man was referred to the plastic surgery outpatients department because he was worried about a 7 mm diameter lesion on his right cheek (figure).

He first noted this lesion a year earlier, and it had slowly grown in size since. It crusts over occasionally, but it does not bleed. He had spent most of his adult life in Africa. His medical history includes hypertension, for which he takes atenolol and ramipril. He has no drug allergies and is a non-smoker.

- 1 What is the most likely diagnosis?
- 2 Is this a benign or malignant lesion?
- 3 What are the risk factors for developing this lesion?
- 4 Is this a "high risk" or "low risk" lesion?
- 5 What treatment options are available?

Submitted by A W N Reid and O P Shelley

Cite this as: *BMJ* 2012;344:e482

CASE REPORT

A woman with ketoacidosis but not diabetes

A 41 year old woman presented with a one day history of abdominal pain and vomiting. She had been drinking alcohol and three to four bottles of Iso-Gel (isopropanol) a day for the past two weeks. She was positive for hepatitis C and was known to have used injecting drugs and alcohol in the past.

On admission, her blood pressure was 119/72 mm Hg, pulse rate was 110 beats/min, respiratory rate was 28 breaths/min, and temperature was 36.6°C. She was dehydrated but seemed well nourished. She was alert and oriented in time and place. Her abdomen was tender in the epigastric and left upper quadrant regions, without guarding or rigidity. The rest of the physical examination was unremarkable.

Laboratory tests showed the following results: haemoglobin 154 g/L (normal range 120-160), white blood cell count $7.6 \times 10^9/L$ (4.0-10.0), platelets $82 \times 10^9/L$ (150-400), glucose 4.8 mmol/L (3.6-11.0), sodium 139 mmol/L (135-145), potassium 4.9 mmol/L (3.5-5.0), chloride 104 mmol/L (98-110), bicarbonate 12 mmol/L (22-26), anion gap 28 mmol/L (10-20), urea 4.6 mmol/L (3.0-7.1), creatinine 89 $\mu\text{mol/L}$ (60-130), alkaline phosphatase 152 U/L (40-135), alanine aminotransferase 68 U/L (4-55), total bilirubin 33 $\mu\text{mol/L}$ (2-20), albumin 42 g/L (35-50), amylase 276 U/L (20-110), and lactate 1.4 mmol/L (0.7-2.1). Arterial blood pH was 7.27 (7.35-7.45); her partial pressure of carbon dioxide was 22 mm Hg (33-45) and partial pressure of oxygen was 126 mm Hg (75-100) while inhaling 1 L of oxygen per minute.

A pregnancy test was negative. Small amounts of ketones were found in the venous blood. Plasma β -hydroxybutyric acid was 7.9 mmol/L (0.02-0.29). Serum osmolality was 304 mmol/kg (280-305). Ethanol and salicylates were not detected in the blood and paracetamol concentrations were less than 20 $\mu\text{mol/L}$. Concentrations of ethylene glycol, isopropanol, and methanol were all less than 2 mmol/L. A computerised scan of the abdomen showed fatty infiltration of the liver with no other abnormalities.

- 1 What is the diagnosis?
- 2 What other causes of metabolic acidosis or ketosis are suggested by the history?
- 3 How would you treat this patient?

Submitted by H U Rehman

Cite this as: *BMJ* 2012;344:e1535

STATISTICAL QUESTION Confidence intervals and statistical significance

Researchers evaluated the effect of percentage compliance with the Surviving Sepsis Campaign's resuscitation and management bundles on mortality in patients admitted with severe sepsis to intensive care units in Asia. The resuscitation bundle delivered within six hours includes early blood cultures and antibiotics plus various aspects of early goal directed treatment for haemodynamic derangements. The management bundle delivered within 24 hours includes low dose steroids, drotrecogin alfa (activated), glucose control, and guidelines on ventilator support.

In total, 1285 adult patients with severe sepsis were admitted to 150 intensive care units in July 2009. There were 713 survivors and 572 deaths. Compliance with the resuscitation bundle (six hours) was lower for non-survivors (4.2% (95% confidence interval 2.6% to 5.8%) v 10.4% (8.1% to 12.6%)). Compliance with the management bundle (24 hours) was also lower for non-survivors (2.1% (0.9% to 3.3%) v 4.6% (3.1% to 6.2%)).

Which of the following statements, if any, regarding the comparison of non-survivors with survivors are true?

- a) The difference in percentage compliance with the management bundle (24 hours) was not significant at the 5% level because the 95% confidence intervals for the two groups overlapped
- b) The difference in percentage compliance with the resuscitation bundle (six hours) was significant at the 5% level because the 95% confidence intervals for the two groups did not overlap.

Submitted by Philip Sedgwick

Cite this as: *BMJ* 2012;344:e2238