

# ENDGAMES

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## PICTURE QUIZ

### Painful blisters on the hand

A 74 year old previously healthy man presented to the emergency department with acute onset of pain and swelling in the right hand. Earlier that evening he had played a game of recreational ice hockey. He did not have a fever and was otherwise well. He had not experienced trauma during the game and his medical history was unremarkable. Physical examination showed large lesions on the right hand (figs 1 and 2).

- 1 What do the images show?
- 2 What is the diagnosis and what differential diagnoses should be considered?
- 3 What are the most likely organisms responsible for the condition?
- 4 What is the appropriate management?

Submitted by Yuliya Velykoredko and David N Adam

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Fig 1



Fig 2

## CASE REPORT

### Recurrent hypoglycaemia in a young man without diabetes

A 37 year old man presented with a sensation of weakness, irritability, and poor concentration. His blood glucose was 2.4 mmol/L (reference range 3.6-11; 1 mmol/L=18.02 mg/dL). Three months earlier he had noticed a craving for sweets and episodes of weakness, sometimes associated with foggy sensorium. He felt cold, clammy, and fatigued during these episodes and his wife noticed that he acted strangely and had no memory for long periods. After drinking large amounts of cola he felt better and had gained 30 lb (13 kg) in weight during this time. His symptoms recurred when he had not eaten for several hours, particularly at night and in the early morning.

Several days before his current presentation, he had presented to another hospital with similar symptoms and was found to have a blood glucose of 2.6 mmol/L. He responded well to dextrose infusion and was discharged home.

His medical history was unremarkable except for an umbilical hernia repair and back surgery 10 years earlier. He was taking no prescription or over the counter drugs. He did not smoke and drank beer socially. He denied taking illicit drugs. His family history was positive for diabetes but he had not been diagnosed as having diabetes.

On arrival his blood pressure was 124/76 mm Hg, pulse was 94 beats/min, and respiratory rate was 18 breaths/min. He was confused, cold, and clammy. Examination of the rest of the neurological system; skin; joints; and cardiovascular, respiratory, and abdominal systems was unremarkable. His haemoglobin, white blood cell count, and platelet count were in the normal range. Sodium, potassium, urea, creatinine, and liver panel results were normal. Glycated haemoglobin was 5% (31 mmol/mol). He responded to a dextrose infusion and was admitted for further investigations.

- 1 What is the differential diagnosis?
- 2 What initial investigations are warranted?
- 3 What further investigations would you do if the above investigations suggested functioning islet cell tumour?

Submitted by H U Rehman

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## STATISTICAL QUESTION

### Units of analysis

Researchers assessed the effectiveness of a physical activity programme during one school year on the physical and psychological health of young schoolchildren. A cluster randomised controlled trial design was used. The physical activity programme consisted of three existing physical education lessons each week supplemented by a further two lessons, daily short activity breaks, and physical activity homework. Children in the control group received only the three existing physical education lessons each week.

In total, 28 classes at 15 elementary schools in Switzerland were recruited. Classes were randomly assigned to treatment in a 4:3 ratio; 16 classes at nine schools were assigned to the intervention and 12 classes at six schools were assigned to the

control. There were 297 children allocated to intervention and 205 to control.

Primary outcome measures included for each child the change between baseline and follow-up in body fat, aerobic fitness, physical activity, and quality of life measures. The researchers reported that the school based multicomponent physical activity intervention improved physical activity and fitness and reduced adiposity in children.

**Which one of the following was the unit of analysis?**

- a) Child
- b) Class
- c) School

Submitted by Philip Sedgwick

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