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PICTURE QUIZ

An unusual case of quadriplegia

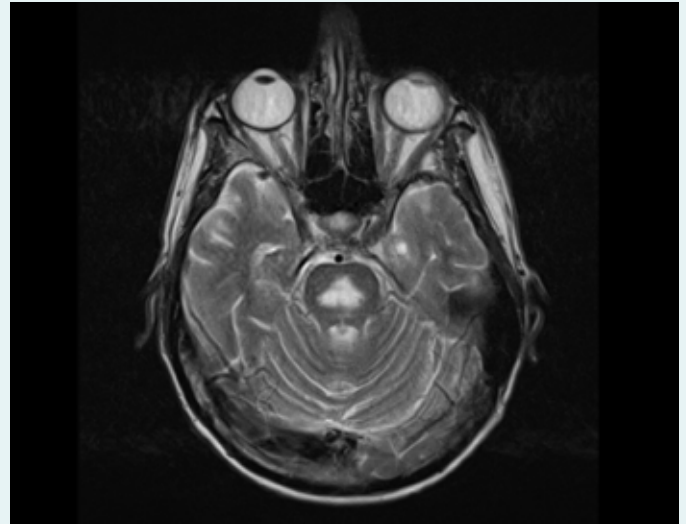
A 48 year old man presented with a four day history of lethargy, dizziness, and an unsteady gait with recurrent falls, on a background of chronic alcohol misuse. The patient was taking desmopressin for nocturnal enuresis and bendroflumethiazide for hypertension, which were both stopped on admission.

On physical examination he appeared clinically euvolaemic and he had no focal neurological deficit. Vital signs were within normal limits. Serum biochemistry showed sodium of 110 mmol/L (normal range 137-145; 1 mmol/L=1 mEq/L) and potassium of 2.6 mmol/L (normal range 3.5-5.5 mmol/L). A computed tomogram of the brain was performed to rule out traumatic brain injury was unremarkable.

Fluids were subsequently restricted and he was started on parenteral thiamine, oral chlorthalidoxime, and intravenous 0.9% sodium chloride with potassium supplementation. Twenty four hours later, serum sodium was 119 mmol/L and serum potassium was 3.3 mmol/L. Serum sodium eventually reached 130 mmol/L on day 4.

Seven days after admission he developed delirium and on examination had bilateral pyramidal weakness, more pronounced on the right. Reflexes were generally brisk, with bilateral extensor plantar responses. He also developed mild dysarthria but there was no dysphagia.

A repeat computed tomogram of the brain was normal. Magnetic resonance imaging of the brain was subsequently performed to obtain better images of the brainstem and posterior fossa (figure).



Axial T2 weighted magnetic resonance imaging of the head

- 1 What does the magnetic resonance imaging scan show and what is the most likely diagnosis?
- 2 What are the predisposing factors to the condition?
- 3 How is the condition managed?
- 4 How can the condition be prevented?
- 5 What is the prognosis of the condition?

Submitted by Gulraiz Ahmad, Joseph Vassallo, Jawad Naqvi, and Navin Khanna

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STATISTICAL QUESTION

Convenience sampling

Researchers assessed the efficacy, acceptability, and safety of a topical alkane vapocoolant spray in reducing pain during intravenous cannulation in adults. A randomised double blind placebo controlled trial study design was used. The intervention was a blend of propane, butane, and pentane, which was sprayed less than 15 seconds before cannulation on to the relevant area of skin from a distance of 12 cm for two seconds. The control treatment was a water spray. The primary outcome measure was pain during cannulation, measured with a 100 mm visual analogue scale. Secondary outcome measures included discomfort during administration of the spray, success rate of cannulation, and side effects of treatment.

Participants were adults who required intravenous cannulation in the emergency department of a metropolitan teaching hospital. In total, 201 adult patients were recruited using

convenience sampling. The intervention group consisted of 109 (54%) men, who had a mean (standard deviation) age of 58.2 (19.5) years. The researchers concluded that topical alkane vapocoolant spray was effective, acceptable, and safe in reducing pain during peripheral intravenous cannulation in adults in the emergency department.

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

- a) Convenience sampling constitutes probability sampling
- b) Convenience sampling promotes external validity
- c) Convenience sampling threatens internal validity in a clinical trial

Submitted by Philip Sedgwick

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PICTURE QUIZ
Objective jaundice and pancreatic disease

STATISTICAL QUESTION
Convenience sampling

Author's design

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