

ENDGAMES

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CASE REPORT

An adolescent with an altered state of mind

A 17 year old previously healthy adolescent presented to the emergency department with severe headache, vomiting, and an altered state of mind. His mother reported that he had returned home one hour before, looking confused and agitated; afterwards he mentioned a worsening headache and had vomited twice. On arrival at the emergency department he was conscious but drowsy and slow in answering simple questions. He reported frontal headache (8/10 on a visual analogue scale) and photophobia, and he was unable to stand unassisted. He was afebrile, his heart rate was 170 beats/min, and his blood pressure was 132/80 mm Hg. His pupils were mydriatic and poorly reactive to light. The remainder of the physical examination was unremarkable. He denied taking any drugs or medication, and a urine screen test was negative for cannabinoids, opioids, amphetamines, benzodiazepines, ethanol, and cocaine.

Computed tomography of the brain and a basic set of blood tests were performed, and all results were normal. On further questioning by his parents he admitted having smoked "herbal incense" with friends in the afternoon, after which he reported having experienced visual and auditory hallucinations.

- 1 Which diagnosis does this story suggest?
- 2 What potentially serious complications should be considered?
- 3 How could you confirm the diagnosis?
- 4 How should this patient be managed?

Submitted by Samuele Naviglio, Duccio Papanti, Valentina Moressa, and Alessandro Ventura

Patient consent obtained.

Cite this as: *BMJ* 2015;350:h299

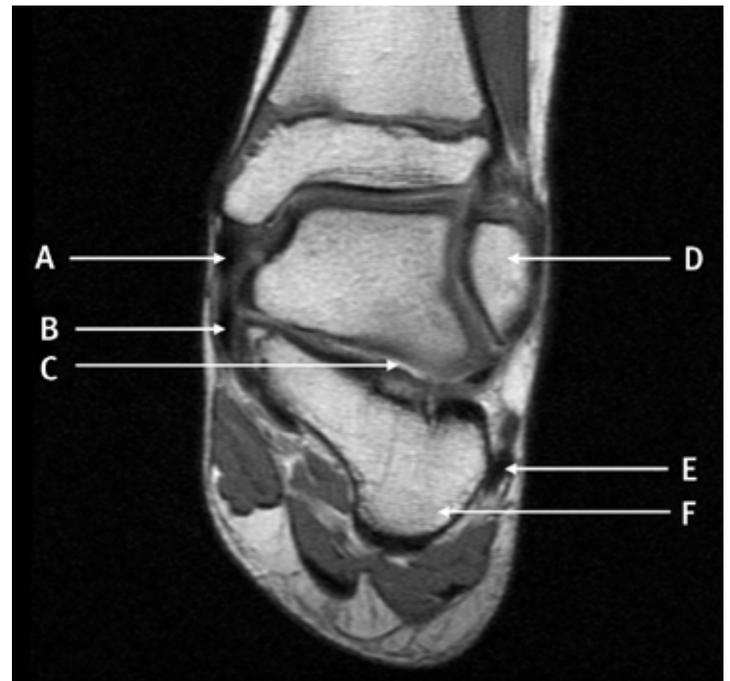
ANATOMY QUIZ

Coronal proton density weighted magnetic resonance image of a 9 year old child's left ankle and foot

Identify the structures labelled A, B, C, D, E, and F in this coronal proton density weighted magnetic resonance image of a 9 year old child's left foot.

Submitted by Oyindamola Kayode and Saman Perera

Cite this as: *BMJ* 2014;349:g7702



STATISTICAL QUESTION Intention to treat analysis versus per protocol analysis of trial data

Researchers evaluated the effectiveness of a self management programme for arthritis on the overall function of patients with osteoarthritis in primary care. A randomised controlled trial study design was used. The intervention was attendance at six sessions of self management of arthritis, plus an education booklet. The control group received the education booklet only. Participants were patients aged 50 years or more who had osteoarthritis of the hips or knees (or both) and pain or disability (or both). In total, 812 patients were recruited and randomised to the intervention (n=406) or control (n=406).

The primary outcome was quality of life, as assessed by the short form health survey (SF-36). Secondary outcomes included physical and psychosocial measures. Outcome measures were recorded by postal questionnaires,

collected at baseline and 12 months. Analysis was performed on an intention to treat approach. The researchers reported that the intervention group showed a significant reduction on the anxiety subscore of the hospital anxiety and depression scale at 12 months (mean difference 0.62, 95% confidence interval 0.16 to 1.08). The intervention group also showed a significant improvement on the arthritis self efficacy scale for pain (0.98, 0.07 to 1.89) and self efficacy for other aspects of management (1.58, 0.25 to 2.90). Per protocol analysis produced similar results to the intention to treat analysis with respect to significant findings. It was concluded that the self management of arthritis programme reduced anxiety and improved participants' perceived self efficacy to manage symptoms, although it had no significant effect on pain,

physical functioning, or contact with primary care.

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

- a) Trial participants who did not start their allocated treatment were excluded from the intention to treat analysis
- b) Intention to treat analysis maintained the original group composition achieved by randomisation
- c) Intention to treat analysis provides a pragmatic estimate of the benefit of intervention
- d) The per protocol analysis included only those participants who completed the protocol for their allocated treatment.

Submitted by Philip Sedgwick

Cite this as: *BMJ* 2015;350:h681