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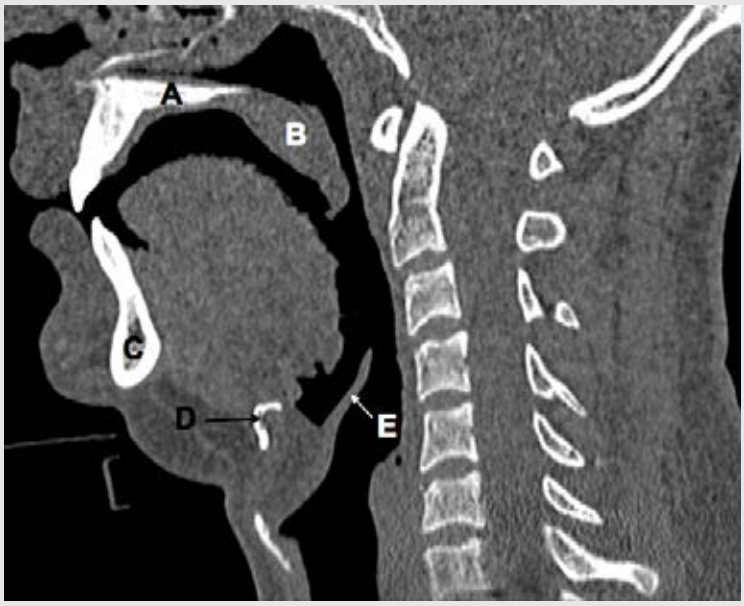
ANATOMY QUIZ

Sagittal computed tomogram of the neck with bone windows



Identify the structures labelled A, B, C, D, and E on this sagittal computed tomogram of the neck with bone windows.

Submitted by Lorna Mary Gibson and Tom Nicholas Blankenstein

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CASE REPORT

A patient with type 2 diabetes and a burning sensation in his feet

A 64 year old man with type 2 diabetes diagnosed nine years earlier attended the outpatient diabetes clinic because of suboptimal diabetes control. His glycated haemoglobin over the past five years had been 64-77 mmol/mol (8-9.2%; optimal value <53 mmol/mol (7%)). He was being treated for diabetes with gliclazide and metformin. He also received simvastatin and enalapril for dyslipidaemia and hypertension, respectively, and 75 mg acetylsalicylic acid daily for the prevention of primary cardiovascular disease.

He had painful symptoms in his legs, which he described as a burning sensation, with tingling in the feet. He had been experiencing the burning pain for the past six months, especially during the night, and he had to walk about or put his feet in water to find relief. He thought that the symptoms may be related to poor circulation in his legs and he was worried that he might need an amputation.

On examination he could not feel the 128 Hz tuning fork up to his knees bilaterally or the 10 g Semmes-Weinstein monofilaments on two out of three sites on the plantar surface of his feet. Pedal pulses, however, were palpable in both feet.

1. What is the diagnosis?
2. How would you manage this patient?
3. What are the long term complications?

Submitted by Ioanna Eleftheriadou, Nicholas Tentolouris, and Edward B Jude

Patient consent obtained.

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STATISTICAL QUESTION

Before and after study designs

Legislation to prohibit smoking in most enclosed public places was implemented in Scotland in March 2006. It has been suggested that an unintended consequence of such legislation is the displacement of adult smoking from public places into the home. Researchers investigated whether exposure to secondhand smoke in primary schoolchildren changed after the implementation of the legislation. A before and after study design was used. Participants were children in their final year of primary school, aged 10-11 years at the start of the school year. Two representative class based surveys of children were undertaken in the same schools one year apart, with one before the legislation and the other after. The surveys included different children. Of 170 schools approached, 116 agreed to take part in the study before the legislation (January 2006) and 111 of these schools also participated in the follow-up survey (January 2007). Each school selected one class to participate in each survey. A total of 2559 primary schoolchildren were surveyed in January 2006 and a further 2424 children in January 2007.

The outcome measures included salivary cotinine concentrations and reported exposure to parental smoking in the home or car. The researchers found that salivary cotinine concentrations were significantly lower after the legislation. Reports of exposure to parental smoking did not differ significantly before and after the legislation. It was concluded that the legislation reduced exposure to secondhand smoke in schoolchildren and that there was no evidence of displacement of parental smoking from public places into the home or car. The legislation had a positive short term impact on schoolchildren's health.

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

a) The before and after study is experimental by design

b) The study used a controlled before and after study design

c) The results of the study were prone to confounding

Submitted by Philip Sedgwick

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