Educational tales from the ED…

CPD whilst having a wee: print off & pop on back of the toilet door!

the unstable spinal fracture we sent home

featuring guest educator Mr Gareth Dwyer (the patient)

This is a story of a patient in whom we missed the same diagnosis twice, four years apart. The first occasion (prior to his diagnosis of ankylosing spondylitis) was understandable. The second was not.

As a result of this case, we have changed our x-ray policy for non-traumatic back pain. But we also want to share our key learning points (the majority of which were due to lack of awareness about a relatively rare condition and its complications) as widely as possible, to help others avoid the same errors.

This is our first #FOAMed educational "co-production" with the patient concerned: we are immensely grateful to Gareth for so generously participating, even though we let him down. We hope you find it useful and would welcome your feedback.

Gareth, a chef in his late 30s, is known to have Ankylosing Spondylitis (AS). His AS was first discovered when he was 33 and attended ED following a minor fall: he'd slipped over and experienced back pain, but was thought to have a soft tissue injury. A week later, with escalating lumbar pain, an x-ray showed an unstable L3# and he was diagnosed with Ankylosing Spondylitis. Fast forward four years**:** Gareth lives with pain every day, but takes analgesia and gets on with life. Last August, he'd had some increase in pain & stiffness. Then, one evening when he went to sit on the bed, *"the pain was shooting… it felt like the first time I fractured my spine"*. He tried self-medicating with analgesics and diazepam, but *"the time of night and the [severity of] pain I was in made it a very easy decision [to go to ED]"*.

Patients may have serious diagnoses they don't know about yet: do you ever take a systematic enquiry when seeing minor injuries?

Ankylosing Spondylitis is a cause of osteoporosis: pathological # may occur with minimal or no trauma.

"I've learned that people will forget what you said, people will forget what you did, but people will never forget how you made them feel" - Maya Angelou

On arrival in the ED *"I felt I was spoken to like a silly little waste of time. The triage nurse was very condescending and said on more than one occasion, 'I have been doing this job for years: bones don't just break'"*. The triage nurse (who typed "patient wants x-rays and back problem sorted tonight") was also dismissive of Gareth's National Ankylosing Spondylitis Society (NASS) card, which highlights the need for caution when moving the neck or back of an AS patient. Gareth was given a dose of oramorph and *"pushed back into the waiting room"*.

We are, needless to say, deeply embarrassed by this description of one of our team's attitude in triage.

But people in glass houses can't throw stones. If you are *completely* honest with yourself, do you *always* approach *every* non-traumatic back pain in ED with a truly open mind? Even in patients taking a "cocktail" of pain meds? Do you *always* stop to listen to what the patient is asking for, or does it annoy you when patients ask/expect a particular course of action?

They may be right: Gareth was.

Gareth was then seen by one of our middle-grade doctors, who undertook a textbook assessment/examination. Unfortunately, our doctor didn't suspect the diagnosis of a spontaneous vertebral fracture either, due to the lack of trauma and absence of point tenderness on palpation of the spine, so no imaging was performed, as per our guidelines at the time. Gareth was discharged from the ED, by which time morning had come: he headed straight for his GP, *"not happy with the ED assessment and needing better pain relief"*. Topped up with extra analgesics, Gareth even made it back to work, trying to keep moving, "*although I was slow and unsteady, and the pain was through the roof.*"

The classic fracture associated with AS is the "chalkstick" fracture, often through ossified vertebral disks, which can be highly unstable, and occur with minimal or no trauma.

The biomechanics of AS spines are totally different to normal: fused "runs" of vertebrae act as lever arms. These spines really can, *and sometimes do*, "just break" - badly.

A week later, Gareth saw his GP again. With the pain no better, Gareth was sent for plain films which revealed unstable, acute "chalkstick" spinal fractures at L3 & L4: he was swiftly recalled and admitted. Thankfully, there was no neurological injury and the fractures were treated conservatively. After a very uncomfortable few months, Gareth is now back at work.

Severe new or increased back pain in patients at risk of pathological fracture (e.g. AS, osteoporosis & patients on long-term steroids, as well as patients at risk of bony mets) is an indication for x-ray, *even in the absence of trauma or bony tenderness.*

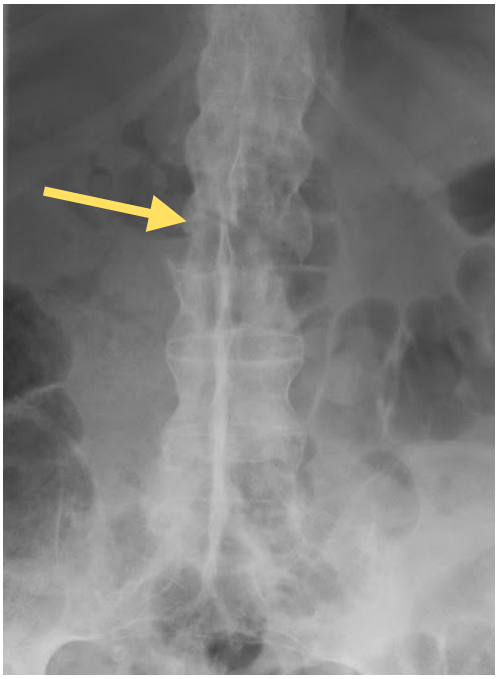
Does your local radiology policy reflect this? Ours didn't: it does now! In our quest to reduce unnecessary radiation exposure via spinal x-rays, we'd ended up following a mantra of "no trauma = no x-ray".

This is a #FOAMed personal production by Dr Linda Dykes, independent from my employers.
I would like to thank our patient, Gareth Dwyer, for being willing to tell his story, and my metabolic bone consultant and radiology colleagues for their swift, helpful and extremely productive response to it.

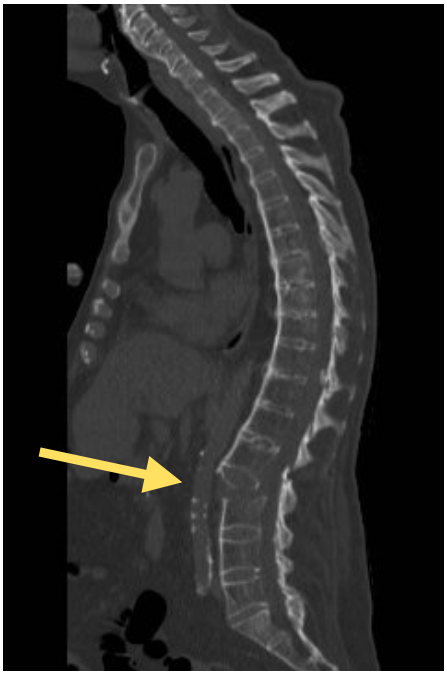
By very kind permission of Dr Vikas Shah of www.thexraydoctor.co.uk

these images & much fuller explanations appeared in a blog post 22/10/2015
(Xray of the Week 42: a classic spine x-ray)

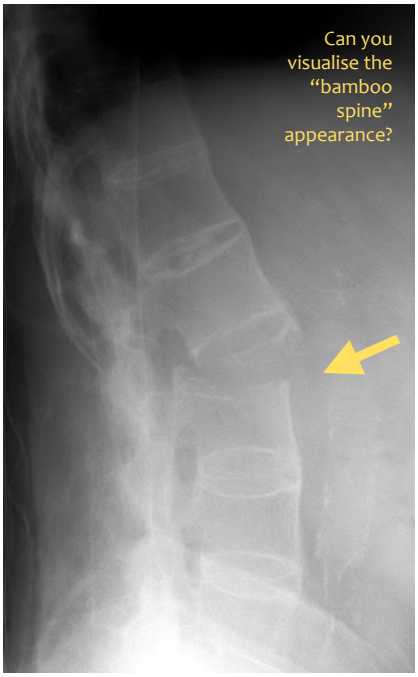
Chalk-stick fracture in Ankylosing Spondylitis



Note the fused SI joints, and the ossified superspinous/ interspinous ligaments giving a continuous vertical dense line - the "dagger spine". The arrow indicates where the line is broken - suspicious for a #



Saggital CT showing 3-column fracture and other changes of AS



Lateral view shows a fracture across L3 vertebral body with marked acute kyphosis and a break in the otherwise-continuous ossification of anterior longitudinal ligament