

Discussant: *Associate Professor Andrew Miller*

The first image has my attention! I already have a major differential diagnosis, and it needs to be excluded immediately. In oncological medicine there are several conditions which carry dire consequences if not recognised by the first doctor – either GP or ED. These include tumour lysis syndrome (*renal failure*), neutropaenic sepsis (*septicaemic shock*), retinal metastasis (*blindness*) and this one – spinal cord compression.

Spinal Cord Compression (SpCC) is classically taught as something like a complete neurological failure in the legs (*flaccid paralysis, faecal incontinence, anaesthesia*), commensurate with the vertebral level of involvement. Unfortunately, this is SpCC, but it's also IRRETRIEVABLE SpCC! What should be taught is how to pick the EARLY SpCC when the cord is lightly compressed and function is still retrievable.

This presentation as described on the radiology request form fits the bill perfectly. Acute back pain with constipation in a cancer patient! The TRIFECTA! You can't get it any clearer than that.

So it is with some shock that I read the radiology report and find no mention of the vertebral column. The job of the radiologist is difficult. The rooms are dark and they approximate the medical mushroom. The expectation that a radiologist can report a scan accurately in the absence of the clinical history is ludicrous. More than that this represents a clear failure of understanding of how we think about and reach diagnoses. Diagnosis requires "straw men". Straw men are set up to be knocked down, so the doctor has to provide a provisional diagnosis against which to view the results of the investigation.

We do, sorry, you are being taught to do this at medical school. We group historical features and ask additional questions looking for patterns that correspond to diagnostic possibilities, then we look for signs that refute or corroborate. Each test has a pre- and post-test likelihood of being correct and this modulates the probability of diagnosis. In this case the absence of the words "spinal cord compression" indicates a failure of recognition, a failure of belief ("*I'm an intern, what would I know?*") or a failure of training ("*I wasn't taught to make a diagnosis*"). The radiologist needed those words.

As I read the radiologist's report, I am waiting to hear about the vertebral column and the condition of the spinal cord. But lacking the provisional diagnosis, he has not been forced to answer the question - **is there a spinal cord compression?** It is an easy out to blame the radiologist, but the swiss cheese model of stuff ups says that the resident has some responsibility here also.

So now I shall turn my attention to the CT slices provided. These are abnormal images, and they are obviously abnormal. But this unmasks more errors. Sure the radiologist got it wrong, BUT who ordered the test? While we can only conjecture about what was in the mind of the resident, I feel that he was somehow focussing on the back. Maybe he just filled out the form for the boss as a bit of an automaton? But did they look at the test? Or did they take the radiologist's word as gospel?

T10 vertebra shows almost complete replacement of the marrow cavity with a homogeneous soft tissue mass, that fortunately is not compressing the spinal cord. In terms of diagnostic possibilities I am think metastatic carcinoma (*previous cancer history?*) or myeloma (*no osteoblastic reaction*)

T12 vertebra shows the same pattern of marrow replacement in the left hemivertebra. In addition there are a couple of breaches of the cortex, and you would be justified calling this a pathological fracture. So there is no evidence of SpCC, the pain is probably related to the fractures and the constipation to the opiate-based pain relief given.

Both vertebrae, but T10 more than T12, are at risk of collapse, and if there is sudden escalation in her pain or neurological signs in the legs, a consultation should be sought from the neurosurgical team for urgent decompression. Either way, palliative radiotherapy to these vertebrae is required to eradicate the myeloma and allow bone healing.

# Pain in the Abdomen

- **WARNING, WILL ROBINSON!!!**

- **DANGER! DANGER! DANGER!**

University of Wollongong  
Graduate School of Medicine  
Phase 2 : Oncology Topics

**IAHS DEPARTMENT OF MEDICAL IMAGING REQUEST FORM**

<b>WARD PATIENT TRANSPORT</b> <input type="checkbox"/> WALK <input type="checkbox"/> BED <input type="checkbox"/> CHAIR <input type="checkbox"/> WARD MOBILE <input type="checkbox"/> TROLLEY <input type="checkbox"/> VIA TRANSIT LOUNGE	<b>MRN:</b> Wollongong Hospital [REDACTED]
<b>PREVIOUS RADIOLOGY AT THIS HOSPITAL</b> <input type="checkbox"/> <input type="checkbox"/>	<b>SEX:</b> H.M.O
<b>RADIOLOGICAL EXAMINATION REQUESTED</b> CT ← Chest Abdomen / Pelvis	
<b>PREVIOUS REACTION TO CONTRAST MEDIA</b> <input type="checkbox"/> YES <input type="checkbox"/> NO	<b>RELEVANT HISTORY:</b> - Acute lower back pain - Constipation - <del>History of hysterectomy</del> / History of hysterectomy ? Ca
<b>CURRENT ANTICOAGULANTS</b> <input type="checkbox"/> YES <input type="checkbox"/> NO	
<b>HYPERTENSION</b> <input type="checkbox"/> YES <input type="checkbox"/> NO	
<small>REQUIRES THAT IRRADIATION OF THE LOWER ABDOMEN AND PELVIS OF WOMEN OF REPRODUCTIVE AGE SHOULD BE CONFINED TO THE TEN DAYS FOLLOWING THE FIRST DAY OF THE LAST MENSTRUAL PERIOD</small>	
<b>COULD PATIENT BE PREGNANT</b> <input type="checkbox"/> YES <input type="checkbox"/> NO	

SOUTH EASTERN SYDNEY  
ILLAWARRA  
NSW HEALTH

University of Wollongong



# Pain in the Abdomen

---

- status of an Investigation report?
  - <> than one question in the story
  - Is it all there? **What am I expecting?**
- ***“No abnormality is seen in the lung fields or mediastinum.***

***In the abdomen no abnormality is seen in the liver pancreas spleen or suprarenal glands. The kidneys are unremarkable.***

***The small bowel is normal in calibre throughout. There is a little gaseous distension of the large bowel but gas and faecal material are present all way to the rectum. There are no pelvic masses or lymphadenopathy. There is no free fluid or any other abnormality in the abdomen.”***

University of Wollongong  
Graduate School of Medicine  
Phase 2 : Oncology Topics

SOUTH EASTERN SYDNEY  
ILLAWARRA  
NSW HEALTH

University of Wollongong



# Pain in the Abdomen

- CT @ T10



University of Wollongong  
Graduate School of Medicine  
Phase 2 : Oncology Topics

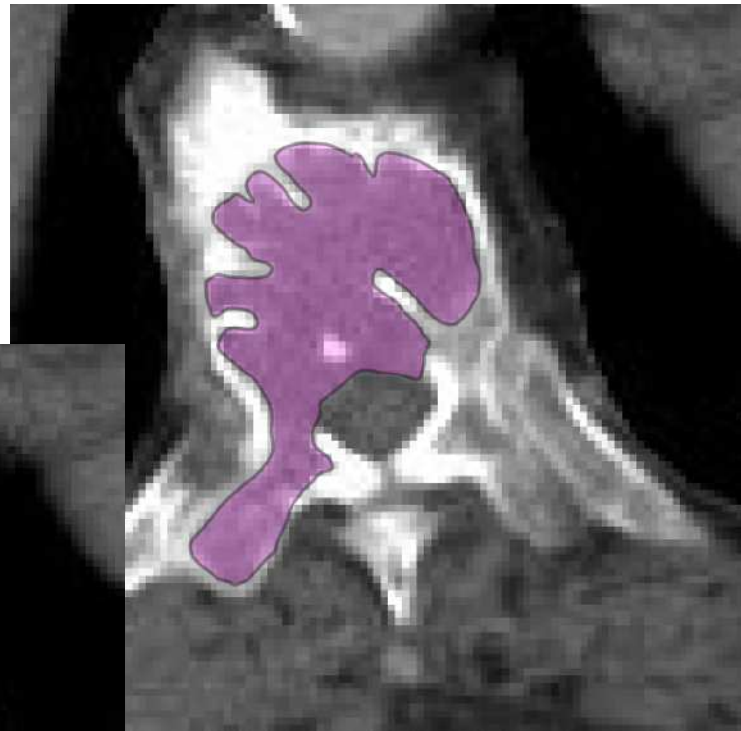
SOUTH EASTERN SYDNEY  
ILLAWARRA  
NSW HEALTH

University of Wollongong



# Pain in the Abdomen

- CT @ T10



University of Wollongong  
Graduate School of Medicine  
Phase 2 : Oncology Topics

SOUTH EASTERN SYDNEY  
ILLAWARRA  
NSW HEALTH

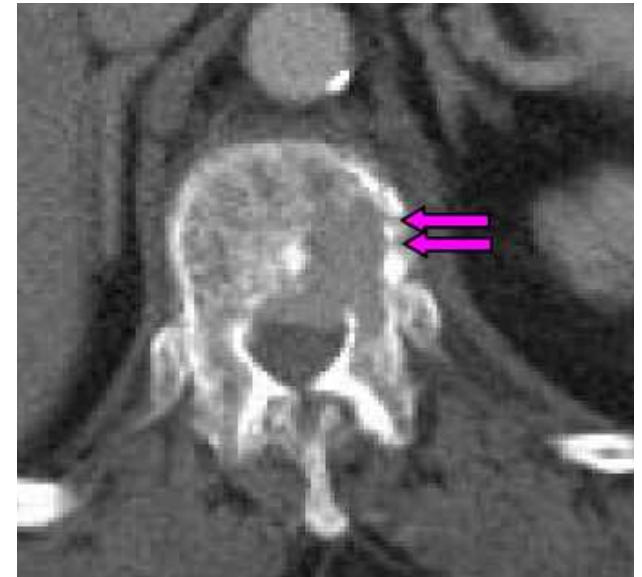
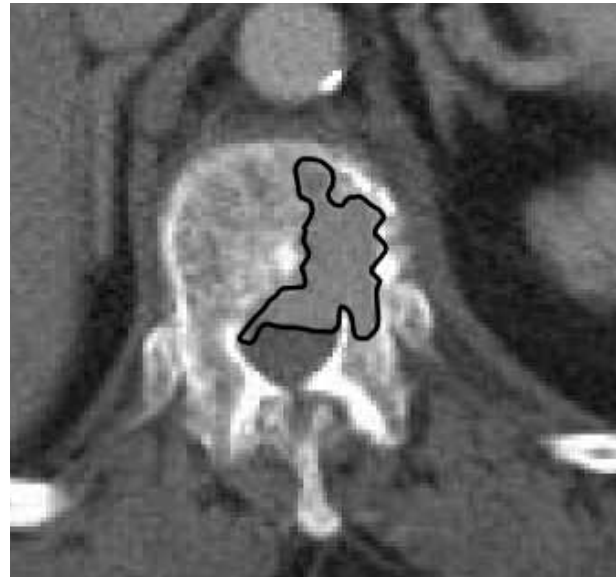
University of Wollongong



# Pain in the Abdomen

- CT @ T12

University of Wollongong  
Graduate School of Medicine  
Phase 2 : Oncology Topics



SOUTH EASTERN SYDNEY  
ILLAWARRA  
NSW HEALTH

University of Wollongong

