YLLSoM Seniors Teaching Initiative
M3 Programmes AY14/15

CASE-BASED SESSION 3

CASE 1: 70 YEAR-OLD GENTLEMAN WITH POST-OPERATIVE FEVER

Mr Lee is a 70 year old gentleman with poorly controlled diabetes mellitus, peripheral vascular disease and history of diverticular disease. He was admitted 1 week ago with severe abdominal pain and underwent an emergency laparotomy. Intra-operatively, a perforation of the sigmoid colon was found and he underwent a recto-sigmoid resection and a Hartman's procedure.

Post-operatively, he was transferred to the surgical high dependancy unit with continuous hemodynamic monitoring via central venous pressure catheter monitoring and urinary catheter for monitoring of urinary output. He was placed on intravenous ceftriaxone and metronidazole.

Today is post-operative day 7 and the nurse informs you that the patient spiked a fever of 38.5 degrees celsius overnight.

Q1) What are broad etiologic categories of fever in a patient?

Q2) What aspects of the history will you take to ascertain the causes of fever in this patient?

The patient mentions that this is his first episode of high fever since the operation and he is feeling especially lethargic today. There is still pain at his operative site but there is no abdominal pain or suprapubic pain otherwise. He does not have any per-rectal bleeding. He mentions that he is feeling more breathless, though unable to cough or breathe deeply due to the significant pain from his laparotomy wound. There is no chest pain. There is no leg swelling and he does not have any pain in his calves. Otherwise, he has just begun to tolerate small feeds without any vomiting.

Q3) What are your differential diagnoses for his chief complaint at this point?

Q4) How would you assess the patient to make a diagnosis and assess the complications?

Mr Lee appears lethargic with a heart rate of 98 bpm, BP of 115/90, respiratory rate of 26 and saturation of 99% on room air. There is conjunctival pallor and he is not jaundiced. Respiratory examination reveals dullness to percussion, reduced breath sounds and crepitations over the right lung base. Heart sounds are S1 S2 with no additional heart sounds or murmurs. Abdominal examination reveals no guarding on deep palpation or rebound tenderness, and the laparotomy wound is clean with presence of granulation tissue and no discharge of pus. There is no tenderness or blood on PR examination. There is no blood in the In-dwelling catheter bag. The calves are supple, there is no pedal edema and there are no ulcers on the feet.

Q5) List and explain the rationale for the investigations that you will carry out for this patient.

Q6) What are your initial steps of management and your plan for definitive management?

CASE 2A: 50 YEAR-OLD WOMAN WITH JOINT PAIN

A 50 year old woman comes to see you for longstanding pain in her hands and wrists and knees for the past year. On examination, they are painful, swollen, warm and red. She says they are stiff in the morning.

Q1) What are some possible differential diagnoses?

Q2) What are some essential elements in a rheumatological history?

Her daughter is accompanying her. She tells you that "old folks always complain of aches and pains, probably it is just bone degeneration like osteoarthritis".

Q3) What features distinguish rheumatoid arthritis from osteoarthritis?

You have examined the patient's arms and hands.

Q4) What do you expect to see if there is rheumatoid arthritis? How would you distinguish from the other causes you have listed above?

As a thorough physician, you also examine the rest of the patient.

Q5) What other signs are you looking out for?

After a thorough history and physical examination, you proceed to order some investigations to confirm your working diagnosis of rheumatoid arthritis.

Q6) What are some investigations you will order? What is your rationale?

The investigation results are out.

Investigation	Value	Reference*
Rheumatoid Factor	30 IU/mL	<15 IU/mL
Anti-citrullinated protein antibodies (ACP antibodies)	15 EU/mL	< 20 EU/mL

* http://emedicine.medscape.com/article/2087091-overview

Q7) Your medical student looks at the results (without correlating with the history) and concludes that the patient has rheumatoid arthritis. Do you agree?

Q8) What is the difference in terms of specificity between rheumatoid factor and ACP antibodies? What is the advantage of ACP antibodies?

Q9) What is the diagnostic criteria for rheumatoid arthritis (ACR 2013)? What are some key principles behind the formulation of diagnostic criteria?

Q10) What are some of the management options? What are the adverse effects?

CASE 2B: 52 YEAR-OLD MAN WITH JOINT PAIN

This lady's 50 year old husband presents to you some months later with acute onset of pain and swelling in his left 1st metatarsophalangeal joint lasting over the past few hours. There was no trauma to the foot, but the pain is so severe that he cannot walk. He says that he had a previous episode while he was on holiday recently on a luxury wine and dine cruise, but that it resolved within a few days.

Q1) What is your differential diagnosis?

You suspect that he has gout and send him for a joint aspirate.

Q2) What do you expect to see?

Your suspicions of gout are confirmed.

Q3) What are some risk factors for this condition? What are some of the complications?

Q4) How will you investigate this patient? Describe your rationale.

The serum uric acid was normal.

Q5) Will you still treat this patient for gout? Explain your reasoning.

Q6) What are some principles of management of this patient?

Q7) Are there any medications this patient should be careful of?

CASE 3: 54 YEAR-OLD WOMAN WITH BACK PAIN

Mdm Tan is a 54 year old Chinese lady who is a housewife. She comes to your clinic complaining of back pain, saying that the past week of packing the house and moving boxes around has probably strained her back severely.

Q1) What are possible causes of back pain? What are the different ways of classifying them?

Q2) Can you explain how each of these aetiologies lead to back pain?

Q3) What are the different types of pain and what are their characteristic features?

Q4) How would you take a history from Mdm Tan?

She tells you that she has been having severe back pain over the past 1 week. She denied any trauma to her back or fall recently.

Her pain is in the midline. She describes it as a persistent burning pain that occurs at rest and is not relieved or exacerbated by movement or lack thereof. The pain wakes her up in the middle of the night and she rates it as 8/10. Taking paracetamol and diclofenac has not helped the pain.

She has not experienced any numbness or weakness of her limbs and has not had any change in urinary and bowel habits recently . She also tells you that she has lost about 8 kg of weight in the recent 3 months. Her appetite has not been as good as before. She does not have any fever or night sweats.The systemic review reveals no headache, blurring of vision, nausea or vomiting, no cough or breathlessness, no abdominal pain.

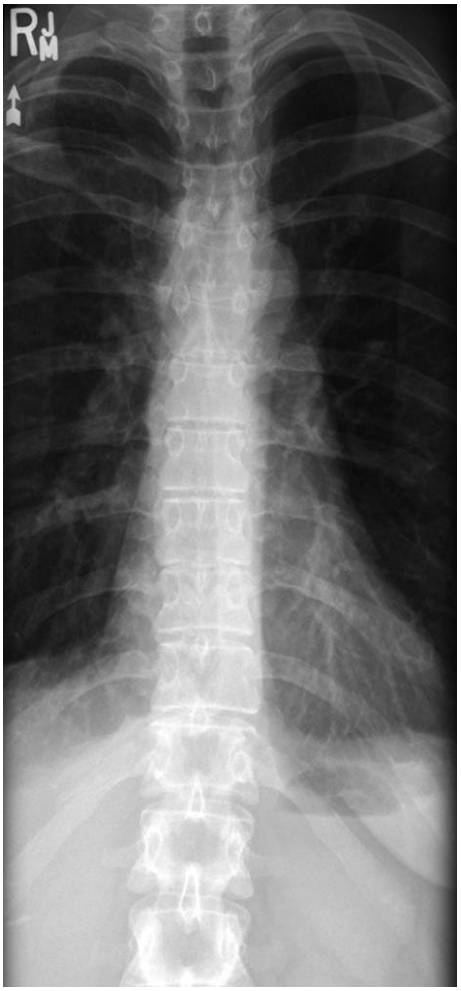
She has no past medical history of Hypertension & Hyperlipidemia, cancer or other systemic illness. She is not on any regular medication and does not have any drug allergies. She does not smoke or drink. She is ADL independent, community ambulant and does not use any walking aids.

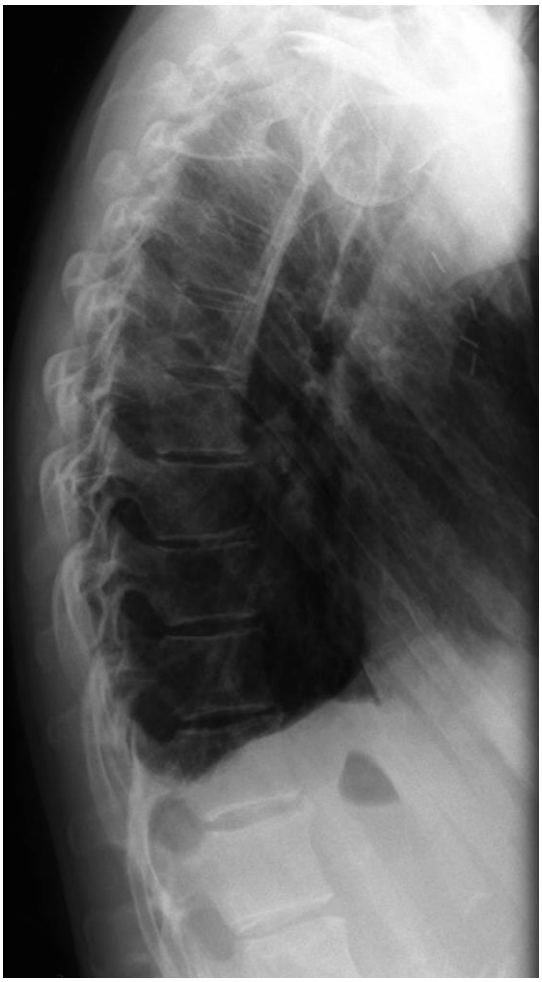
Q5) How will you examine her?

Her physical examination had the following significant findings. There was pain on palpation of the spinous processes along the thoracic region, no step deformities noted. Range of motion limited, pain in all directions of movement. Lower limb neurological examination normal, anal tone intact.

Vitals were stable, she was not febrile. However you took a closer look at her and noticed that she had a lump in the right supraclavicular region.

Q6) How will you investigate her?





Case courtesy of Dr Frank Gaillard, radiopaedia.org

Q7) Describe the X-ray. Name your top three differential diagnosis.

Q8) How will you manage her pain before any definitive management is instituted?

Q9) What are the principles of management of her condition?

CASE 4: 32 YEAR-OLD WOMAN WITH OBESITY

You are an MO in the outpatient medical clinic.

Ms TK is an obese 32-year old Chinese lady, referred to you from an aesthetic physician. Ms TK has unfortunately misplaced the referral letter, but you gather that a month ago, she had visited the aesthetic physician seeking liposuction to decrease her large abdominal girth. However, the aesthetic physician declined to perform liposuction and instead suggested that she see you. Ms TK has always been on the plump side, and has had impaired fasting glucose since 25 years of age. She presents now because has noticed increased weight gain in the past 6 months despite restricting her food intake and signing up for a gym membership. You note that her weight was 75kg when she visited the aesthetic practitioner a month ago, and it has since increased to 78kg. Her height is 1.60m.

Q1) What history would you take?

Q2) What signs would you look for on physical examination?

Physical examination indeed reveals central obesity, facial plethora, severe acne, supraclavicular fat pads, abdominal striae, and thin skin She has no goitre, no pedal edema, elevated jugular venous pressure, or basal lung crepitations. Muscle power is 5/5. Clinic blood pressure is 145/90.

Q3) What is the most likely diagnosis?

As you examine her, she shares with you that liposuction was her mother's idea. She explains that she is under pressure from traditional Chinese parents to find a boyfriend, and thinks that she has not been successful thus far because she is too plump, 'unattractive' and 'too manly'. She has had recurrent problems with acne, for which she has seen multiple dermatologists over many years, been treated with doxycycline and isotretinoin, which have failed to fully resolve the acne. She is also concerned that she has thick axillary hair and has to shave regularly. Her parents have also commented on her deep voice as 'not feminine'. Due to all this, she has felt sad, and was prescribed an antidepressant by her GP.

Q4) Comment on her concerns.

You explain that to confirm your diagnosis, you would like her to take 1mg of methasone at 11pm tonight, and return at 8am tomorrow morning for a blood test. Ms TK complains, 'this is so troublesome, can I just do the blood test now'? The 8am blood test confirms your diagnosis. You explain to Ms TK that this is necessary, and in fact, she will still require further investigation to determine the cause of her diagnosis.

Q5) How would you answer Ms TK's concern?

Q6) Are there any alternative tests to confirm your diagnosis?

Q7) What are the possible sites of overproduction of cortisol?

Q8) How would you distinguish between these sites? Hence or otherwise, what further workup would you order for Ms TK?

The first test results to return reveal:

Na	143	mmol/L	8am cortisol	1047 nmol/L	(<50)
K	3.3	mmol/L	ACTH	10 pmol/L	(0-10.2)
Urea	4.4	mmol/L	Testosterone	2 nmol/L	(0.22-2.90
Cr	50	mmol/L	DHEA-SO4	5 umol/L	(2.66-8.55)

Fasting blood glucose: 9.0 mmol/L

Adrenal CT: no adrenal mass detected

Chest X-ray: normal

Q9) Please interpret the results above.

Ms TK is instructed to take 2mg of dexamethasone 6-hourly for 2 days, and return for a blood test at 8am on the third day. This time, cortisol is 260 nmol/L (reference range: <50% of original result).

Q10) Please interpret this result.

Pituitary MRI finds a small mass lesion in the pituitary. There is no headache, visual field defect, or cranial nerve impairment. Thyroid function test, FSH and LH is normal. Ms TK receives further tests and undergoes trans-sphenoidal resection of pituitary.

Post-operatively, the ICU nurses notice that she has been passing large quantities of dilute urine for the past 4 hours. A renal panel shows:

Serum	Na	152	mmol/L	Urine Na16 mmol/L
	K	5.0	mmol/L	
	Urea	8.4	mmol/L	
	Cr	61	mmol/L	

Q11) What has happened post-operatively? How would you manage this?