

SIMPLY ... Surgery

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@OrthopodReg

#HammerItOut



Objectives

- To cover common surgical emergencies that may occur
 - During finals
 - During your life as an FY1
- To reassure you that if I can pass finals, anyone can



Following

The best thing about graduating is you can stop feeling incompetent at school and instead feel incompetent at work

RETWEETS

97

LIKES

296



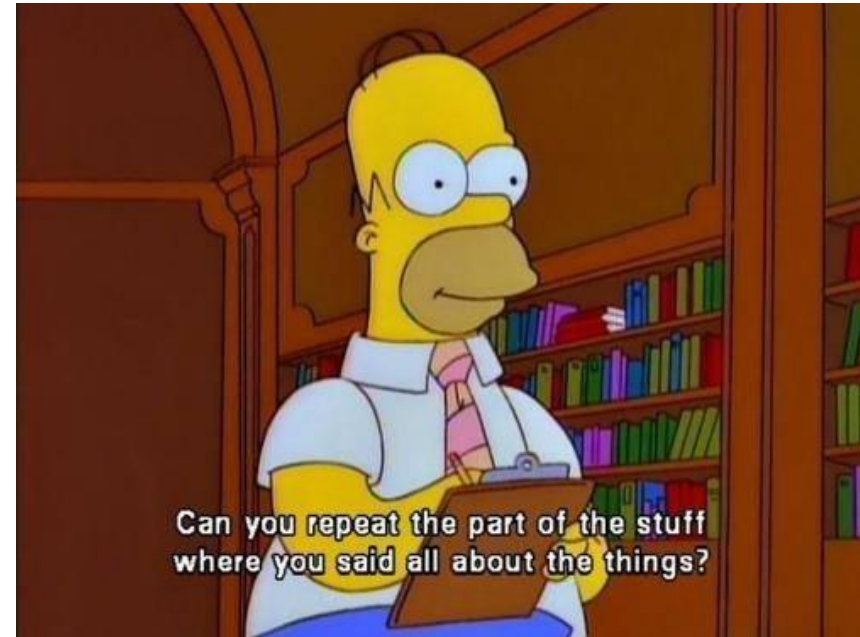
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Remember...

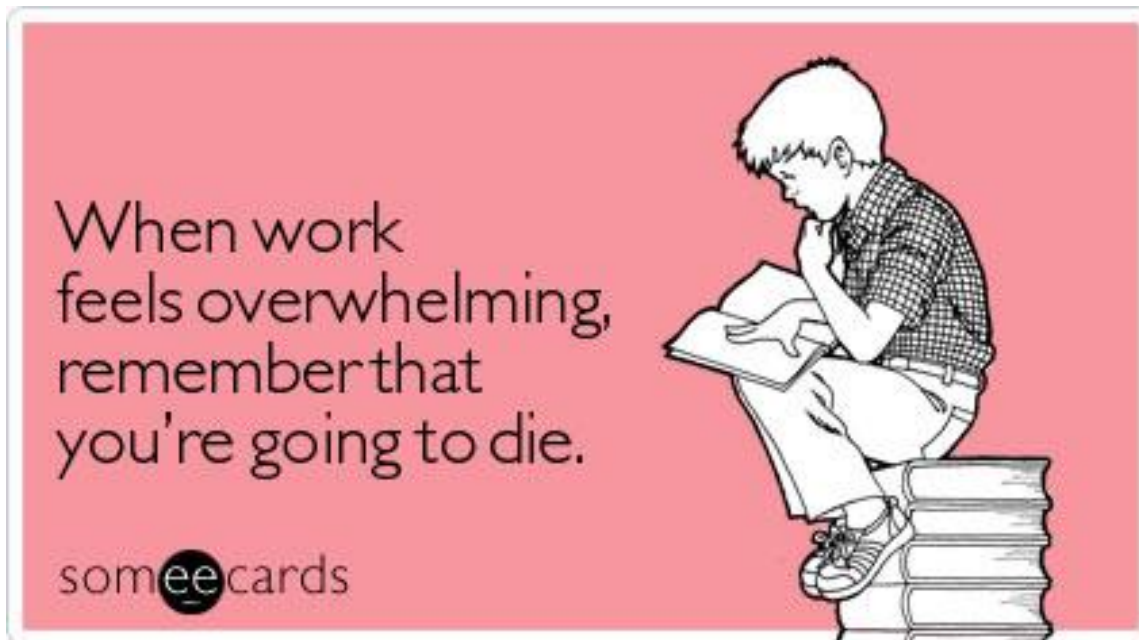
- Regardless of what kind of doctor you become, you will still have to see sick surgical patients...

...so this stuff matters



First Things First

- Don't take notes
- Ask questions – please!
- Don't...take...notes...

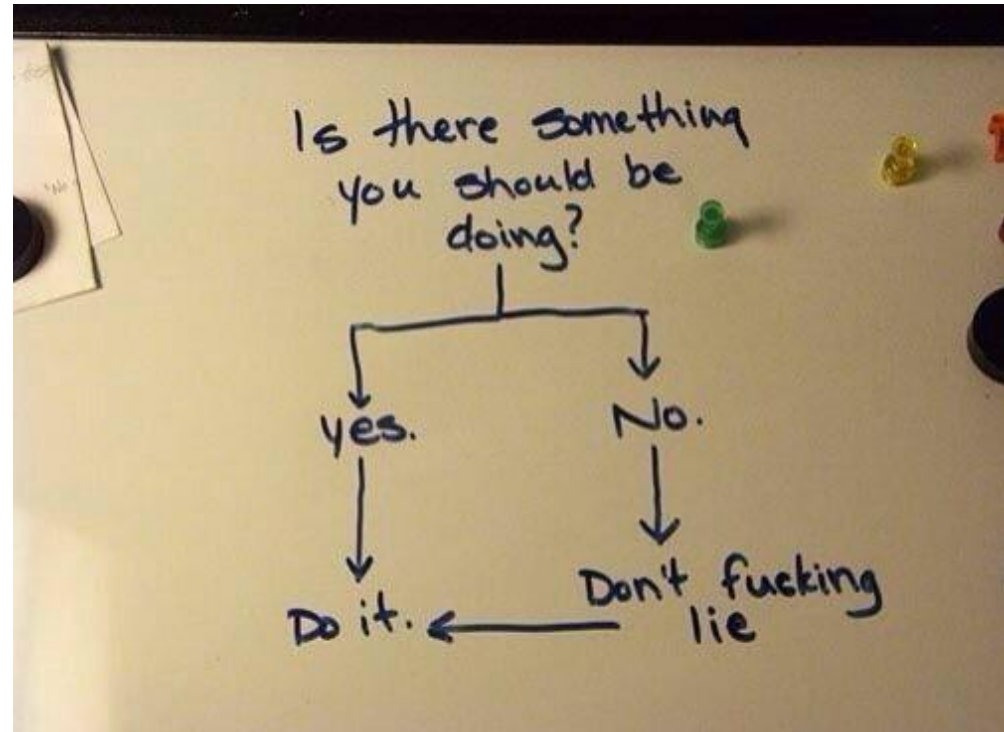
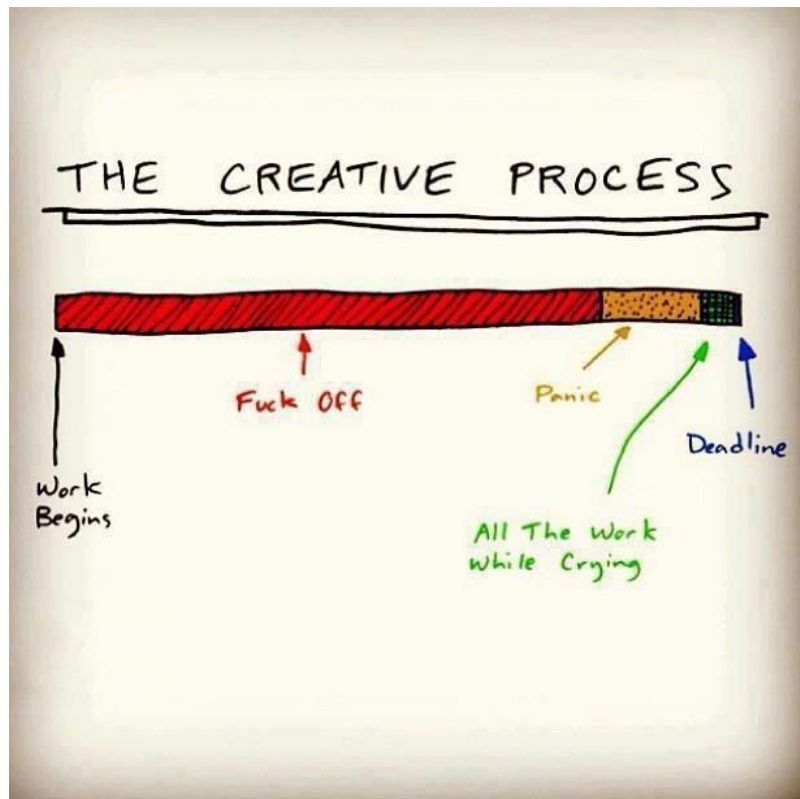


Remember, it's just a test. If you fuck up, it doesn't mean you're a fuckup. That said, try not to fuck this up. It's pretty important.

som^{ee}cards **Sh*t My
Dad Says**

 **SIMPLY**
FINALS

How NOT to Revise...



Cases

1. 68 Male; with a sore tummy
2. 42 Male; drunk off his face
3. 19 Female; rock hard abs
4. 47 Female; yellow and puking
5. 50 Male; I...can't...poo
6. 87 Female; PICKLES!
7. 19 Male; I totes have leg pain. Lol
8. 72 Male; My back hurts
9. 65 Male; cold feet



The Acute Abdomen

- **Condition**
 - Non-specific abdominal pain 35%
 - Acute appendicitis 17%
 - Intestinal obstruction 15%
 - Urological causes 6%
 - Gallstone disease 5%
 - Colonic diverticular disease 4%
 - Abdominal trauma 3%
 - Abdominal malignancy 3%
 - Perforated peptic ulcer 3%
 - Pancreatitis 2%
 - Ruptured AAA <1%
 - Inflammatory bowel disease <1%
 - Gastroenteritis <1%



The Acute Abdomen

- History
 - Site
 - Severity
- Radiation
 - RUQ → back
 - ?**biliary colic/cholecystitis**
 - RUQ → shoulder tip = diaphragmatic irritation
 - ?**cholecystitis/perf DU/subphrenic collection**
 - Central → back
 - ?**pancreatitis/aorta**
 - Central → epigastric -> RIF
 - ?**appendix**
 - Loin → groin
 - ?**renal colic/aorta**



The Acute Abdomen

- How Long Does the Pain Last?
 - Colic = “comes and goes” (spasm in a hollow viscus)
- Character
 - Pain is subjective...
- Precipitating/Relieving Factors
 - Peritonitis = lying still
 - Colic = Moving about
 - Food = ?PUD/colic
 - ETOH = ?pancreatitis/gastritis/ulcer



- Don't forget Associated Symptoms
 - Dysphagia, jaundice, urinary symptoms etc etc etc
- **ANY WOMAN OF CHILDBEARING AGE IS HAVING AN ECTOPIC TILL PROVEN OTHERWISE!**



Case 1 - 68♂ with “a sore tummy”

- 68 male
- Brought in by ambulance
- Patient complaining of
 - 7/10 abdominal pain
 - Radiates from his back, to his side, down into his groin
 - Has been there for a few hours but he is “feeling pretty rough”



History

- What else are you going to ask in the history?
- Have you got a differential in your head yet?
- If not – what else do you want to know?



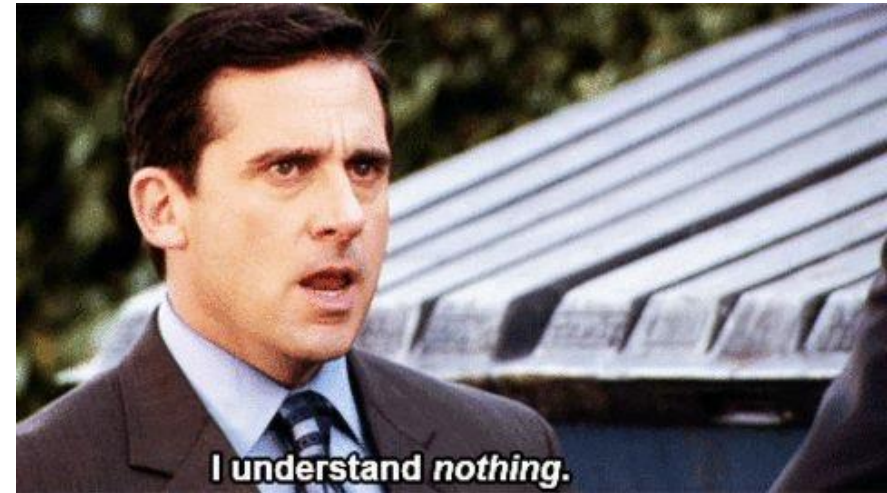
History....

-
1. Onset of pain: Gradual versus sudden onset?
 2. Location: Chest, back, abdominal, flank, buttock, groin, or leg?
 3. Duration: Brief (minutes to hours) or days to weeks? Is the pain intermittent or constant?
 4. Characteristics: How do the patients describe their pain? Sharp, pulsating, aching? Is the pain increasing in intensity?
 5. Associated symptoms: Are there associated cardiovascular, pulmonary, gastrointestinal, genitourinary, or neurological complaints?
 6. Alleviators/aggravators: Does anything make the pain or symptoms better or worse?
 7. Radiation of pain: Does the pain radiate, and to what part of the body?
 8. Therapeutics: Were any medications taken or were there any other interventions to help relieve symptoms prior to presentation?
-

Examination

- Grey
- Clammy

- ABC approach!
 - *What does this actually mean?*



Examination Cont

- A –
 - Maintaining, telling you about his lovely grandchildren and the war and bloody new age music
- B –
 - Sats; 90% **on air**
 - RR 28
 - Lung fields - clear



Examination Cont

- C –
 - HR 127
 - BP 105/70
- Abdomen
 - Painful, central and flank. RT “kidney pain”
 - Pulsatile vs expansile mass
 - Good bowel sounds

Investigations

- What do you want **and** why??
- **Least invasive → most invasive**
- **Cheapest → most expensive**
- **Dullest → most awesome and shiny**



Investigations

- Urine
 - Blood +
 - Protein +
- FBC
- U&E
- LFT
- Clotting
- G&S vs XM
- ABG



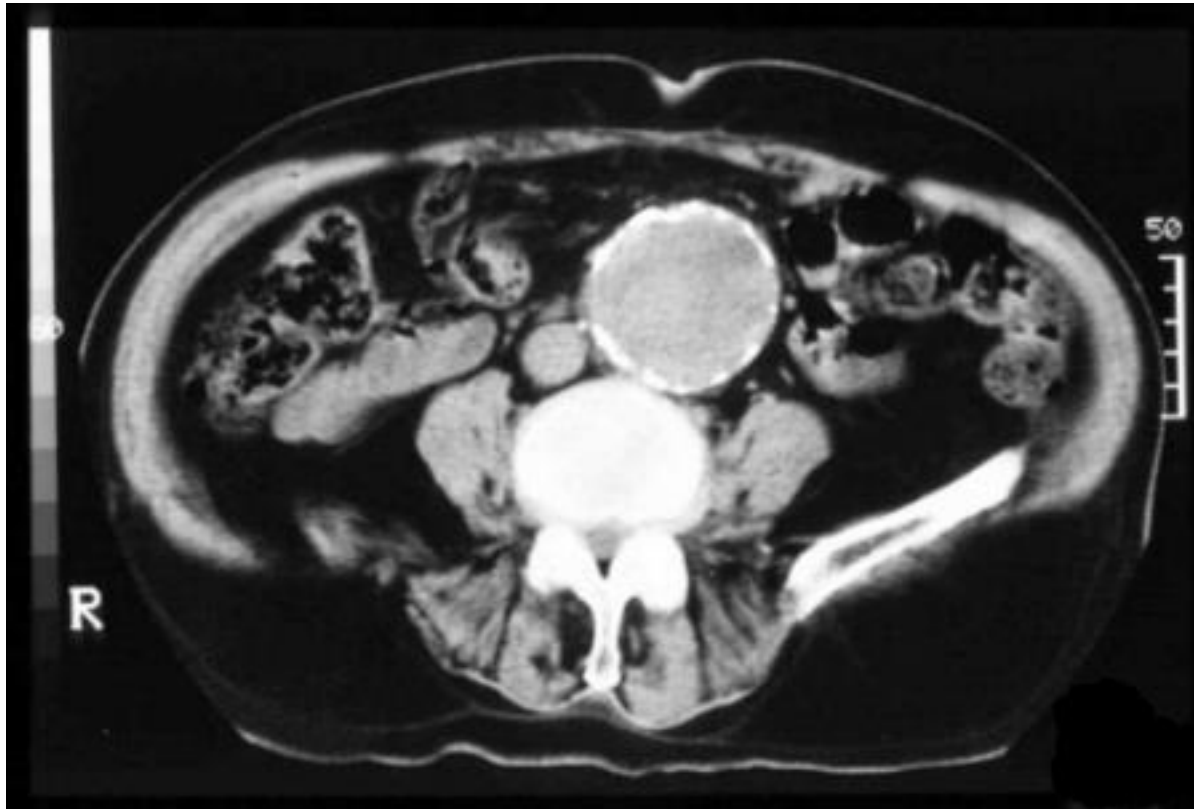
ABG – a quickie!

		<u>normal values</u>
PaO ₂	8.2 kPa (62 mmHg)	>10 kPa (75 mmHg) on air
pH	7.17	7.35 – 7.45
PaCO ₂	4.5 kPa (34 mmHg)	4.7 – 6.0 kPa (35 – 45 mmHg)
HCO ₃ ⁻	12 mmol l ⁻¹	22 – 26 mmol l ⁻¹
BE	- 15 mmol l ⁻¹	+/- 2 mmol l ⁻¹

WHAT NOW??



CT Scan vs USS



So what has he got then???



Now what....

- Access
- Fluids — “*permissive hypotension*”
- Call. For. Help
 - Who? When?

Ruptured Abdominal Aortic Aneurysm (AAA)



Sometimes referred to as “the only true surgical emergency”

100% mortality in 3 days

AAA

- An AAA is an increase in aortic diameter by greater than 50% of normal
- Usually regarded as aortic diameter of greater than 3 cm diameter
- More prevalent in elderly men
- Male : female ratio is 4:1
- Mortality of emergency operation is greater than 50%
- Mortality of elective surgery is less than 5%



AAA

- 5 year risk of rupture:
 - 5.0 – 5.9 cm = 25%
 - 6.0 – 6.9 cm = 35%
 - More than 7 cm = 75%
- Overall only 15% aneurysms ever rupture

AAA

- **History/Examination**

75% ASYMPTOMATIC!!! Bugger!

- **Classical Triad**

1. Shock
2. Pulsatile abdominal mass
3. Mild/severe abdominal pain

Can radiate to back, flank, groin.

Remember – an old man with his first presentation of ‘renal colic’ ain’t got renal colic!



AAA

- **Management**

- ABCDE
- If you think you are looking at a AAA
Call. For. Help.
- “Make a decision, make an incision”

Open Vs EVAR

- **Endovascular aneurysm repair**

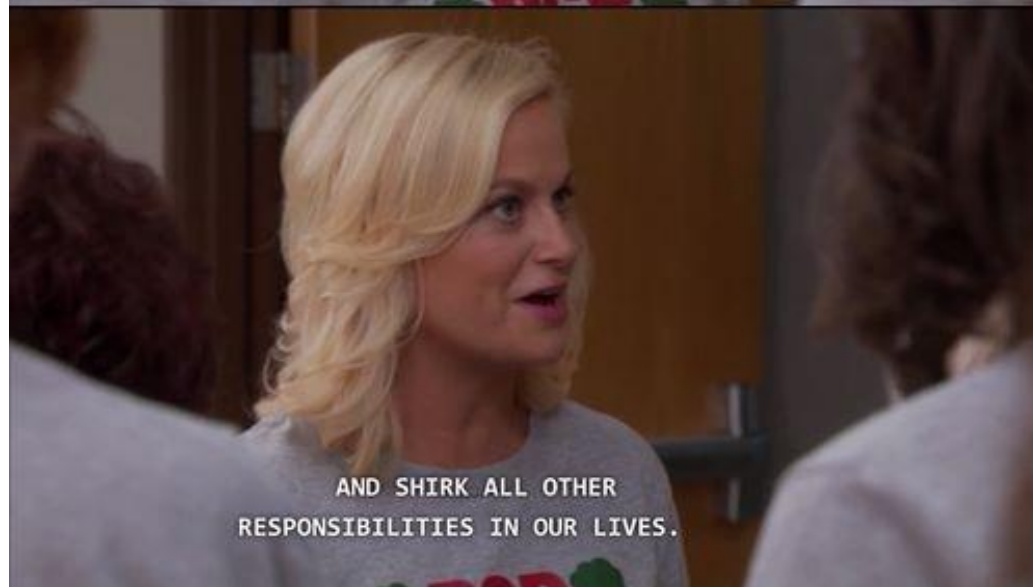
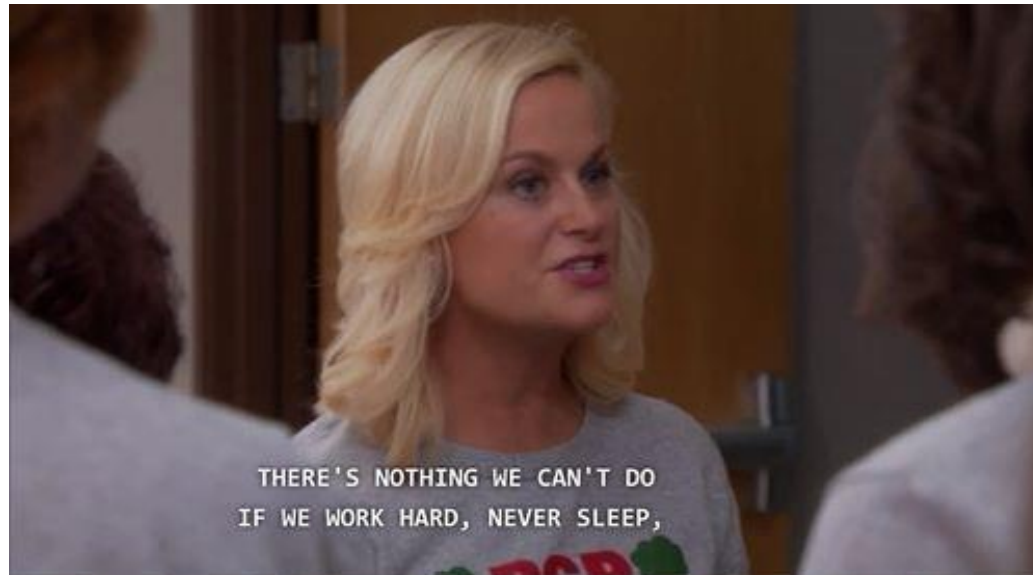
- Introduced into clinical practice with few clinical trials over the past 10 years
- Exact role unclear and medium and late-complications only recently recognised
- Endovascular repair may be associated with:
 - Reduced physiological stress
 - Reduced morbidity
 - Reduced mortality

Medical Management of AAA

- Smoking Cessation- Single most important modifiable risk factor
- Exercise Therapy- Evidence suggests may benefit small aneurysms
- Beta Blockers- May decrease the rate of expansion? Important cardiovascular effects thus use advocated.
- ACE inhibitors- Evidence is mixed, however, implicated in less aneurysm rupture.
- Statins - associated with reduced aneurysm expansion rates.



1 Down...



 **SIMPLY**
FINALS

Case 2 - 42♂ drunk off his face

- 42 year old male
- Brought himself into A&E
- Smells strongly of alcohol
- Is also completely battered



History

- Not great. Something about “cider” and “stealing his beer”
- You catch a bit about “bloody sore gut”
- Your spidey sense tingles and...



Examination

- Jaundice
- Distended abdomen ?discriminate between ascites and fat?
- ABC approach...

Examination Cont

- A –
 - Maintaining, just.
- B –
 - Sats; 99% **on air**
 - RR 30
 - Lung fields – wheeze throughout



Examination Cont

- C –
 - HR 135
 - BP 90/55
 - Abdomen
 - Painful. Mostly in the epigastrium.
 - Guarding
 - Hypoactive bowel sounds
- D –
 - AVPU vs GCS
- E –
 - T 39.2
 - BM 14



On closer look....



Cullen's



Grey Turner's sign

Investigations

- What do you want **and** why??
 - Least invasive → most invasive
 - Cheapest → most expensive
 - Dullest → most awesome



Investigations

- FBC, U&E, LFT, albumin, magnesium, glucose
- CRP
- Amylase
- G&S vs XM
- ABG
- Erect CXR/AXR
- ECG
- Urine dip

- ?USS
- ?Contrast enhanced CT

Blood tests

- Amylase and lipase
- Plasma level peak within 24 hours
- $t_{1/2}$ of amylase \ll lipase

	Sensitivity	Specificity
Amylase	67-100	85-98
Lipase	82-100	86-100

Investigation Results

- WCC - 14
- Serum amylase – 5000
- CRP – 245
- LFTs – all raised, inc ALT (203)
- ABG – lactate 5.2. Metabolic acidosis picture.

Diagnosis?

- Acute Pancreatitis
- Chronic Pancreatitis
- Necrotising Pancreatitis
-not pancreatitis?

Management

- Pain control – opioids?
- Bowel rest and fluid resus
- Nutritional support
- Antibiotics
- ?Surgery
- ?ERCP



Pancreatitis

- **History;**

Establish the (likely) Cause! (**GET SMASH' D**)

G - Gallstones. (more likely in women)

E - Ethanol (more likely in men)

T - Trauma

S - Steroids

M - Mumps (and other viruses like EBV, CMV))

A - Autoimmune (SLE, PAN)

S - Scorpion sting and Snake bites

H - Hypercalcaemia, hypothermia, hyperlipidaemia

E - ERCP

D - Drugs (NSAIDs, diuretics, azathioprine)



Trivia

- What is the name of the scorpion that causes pancreatitis?
 - *Tityus Trinitatis*
 - (Found in Central/ South America and the Caribbean)



Pancreatitis

- **Examination**
- Signs and Symptoms
 - Local
 - Epigastric pain -> back
 - Acute abdomen
 - Jaundice
 - Ascites
 - Grey Turners/Cullen's sign
 - Systemic
 - Shock
 - Respiratory/Renal failure



Cullen's and Grey Turner's respectively

Pancreatitis

- **Investigations**

- FBC, U&E, LFT, albumin, magnesium, glucose
- Amylase
- ABG
- Erect CXR/AXR
- ECG
- Urine dip
- USS

- ?Contrast enhanced CT



Pancreatitis Scoring Systems

Modified Glasgow Score

P O ₂	<8kPa
A ge	>55
N eutrophils	>15x10 ⁹
C a	<2mmol/L
R aised Ur	>16mmol/L
E nzymes(LDH)	>600IU/L
A lbumin	<32g/L
S ugars	>10mmol/L

A score more than 3 = SEVERE

Ransons Criteria

On admission

Age > 55
WCC > 16
LDH > 600 U/l
AST >120 U/l
Glucose > 10 mmol/l

Within 48 hours

Haematocrit fall >10%
Urea rise >0.9 mmol/l
Calcium < 2 mmol
pO₂ < 60 mmHg
Base deficit > 4mmol/L
Fluid sequestration > 6L = 1 point

Mortality; <3 risk <1%, >3 = 18%, >5 = 40%, >7 = ~100%



Pancreatitis Scoring

- APACHE II
 - **A**cute **P**hysiology and **C**hronic **H**ealth **E**valuation
 - Multivariate scoring system
 - Measure objective parameters - vital signs and biochemical analysis
 - Accounts for pre-morbid state and age
 - Can be used throughout course of illness
- **as good as Ranson or Glasgow at 24 and 48 hours**

Score of >8 = severe!



Pancreatitis

- **Management**
- ABCDE
 - Fluid resuscitation with both colloid and crystalloid
 - Correction of hypoxia with an increased inspired oxygen or ventilation
 - Adequate analgesia - opiate or epidural
- Requires full supportive therapy – often on ITU or HDU
- Urinary catheter, CVP line (possibly arterial line)

Pancreatitis

Management Cont

- Regular assessment of bloods
- Conflicting evidence that antibiotics useful in severe pancreatitis
 - *IV Cefuroxime 750mg TDS.*
- *“Urgent therapeutic ERCP should be performed in patients with acute pancreatitis of suspected or proven gall stone aetiology who satisfy the criteria for predicted or actual severe pancreatitis, or when there is cholangitis, jaundice, or a dilated common bile duct.”*
- <http://www.bsg.org.uk/images/stories/docs/clinical/guidelines/pancreatic/pancreatic.pdf>





ACE THOSE FINALS!

With these tips, you'll be testing happy!



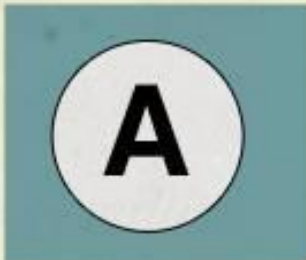
Have A Study Buddy

The more incorrect information you give your buddy, the easier the curve will be. Encourage him/her to take lots of naps.



Fill Up A Notecard

Many professors will let you bring in a notecard, so fill yours with blackmail about your professor.



The "A" Strategy

Answer "A," no matter what. It's easy to study for and, statistically, it has to work eventually.



Case 3 - 19 ♀ with rock hard abs

- 19 year old female
- University student
- Self presented to A&E with abdominal pain
- Says her stomach feels sore around her belly button piercing
- Is pretty pleased because she hasn't eaten in a day or so...



History cont...

- Normally fit and well
- Any other questions ?
- What are your concerns?



Examination

- Seems to be doing her best to stay still
- Intermittently retching
- ABC approach...



Examination Cont

- A –
 - Maintaining.
- B –
 - Sats; 97% **on air**
 - RR 22
 - Lung fields clear



Examination Cont

- C –
 - HR 140
 - BP 105/60
 - Abdomen
 - Central abdominal pain.
 - Specifically tender over the right iliac fossa
 - Percussion vs rebound?
 - ?Rovsing's sign
 - pain in right iliac fossa on palpation of the left iliac fossa
- D –
 - Alert
- E –
 - T 37.8
 - BM 8



Investigations

- What do you want **and** why??
 - Least invasive → most invasive
 - Cheapest → most expensive
 - Dullest → most awesome



Investigations

- FBC, U&E, LFT, albumin, magnesium, glucose
- CRP
- ?Amylase
- G&S vs XM
- ABG
- ?Erect CXR/AXR
- ECG
- Urine dip
- ?USS

Management

- Intravenous fluids and analgesia should be given. **NBM**
- **Do opioids mask peritonitis?**
- In cases of diagnostic doubt a period of 'active observation' is useful
- Antibiotics – pre or post op?
- ‘Diagnostic’ laparoscopy should be considered particularly in young women
- When to operate?



Appendicitis

- Right iliac fossa pain accounts for about half of all cases of acute abdominal pain
- **Causes of right iliac fossa pain**
 - Appendicitis
 - Urinary tract infection
 - Non-specific abdominal pain
 - Pelvic inflammatory disease
 - Renal colic
 - Ectopic pregnancy
 - Constipation



Appendicitis

- About 10% of the population will develop acute appendicitis
- Appendicitis is more common in men
- Appendicectomy is performed more often in women
- At 10-20% appendicectomies a normal appendix is removed
- The risk of perforation is:
 - Less than 10 years old = 50%
 - 10-50 years old = 10%
 - Over 50 years old = 30%



Scoring System

		Value
Symptoms	Migration	1
	Anorexia-acetone (in the urine)	1
	Nausea-vomiting	1
Signs	Tenderness in right lower quadrant	2
	Rebound pain	1
	Elevation of temperature ($>37.3^{\circ}\text{C}$ measured orally)	1
Laboratory	Leukocytosis ($>10,000/\text{mm}^3$)	2
	Shift to the left ($>75\%$ neutrophils)	1
Total score		10
Score		
1-4	Appendicitis unlikely	
5-6	Appendicitis possible	
7-8	Appendicitis probable	
9-10	Appendicitis very probable	

Adapted from Alvarado A. A practical score for the early diagnosis of acute appendicitis. *Ann Emerg Med.* 1986;15:557-564 with permission from Elsevier.



Appendicitis

- Appendicitis is essentially a clinical diagnosis
- The following may be useful:
 -
 - Urinalysis may exclude urinary tract infection
 - Pregnancy test to exclude ectopic pregnancy
 - A normal white cell count does not exclude appendicitis
 - Ultrasound may be helpful in the assessment of an appendix mass or abscess
 - Scoring systems and computer-aided diagnosis may be helpful



A HAIKU ABOUT FINALS

I AM REALLY FUCKED
WHERE DID THE SEMESTER GO
FUCK FUCK FUCK FUCK FUCK

 **SIMPLY**
FINALS

Case 4 – 47 ♀ yellow and puking

- 47 year old female
- Self presented to A&E with “I’m a bit...yellow” and constant abdominal pain
- Feels generally unwell.

History

- Sudden epigastric pain, radiating to back.
- This lasted for a day or so, nearly continuously
- Vomited a lot.
- Now feeling feverish, with much worse abdominal pain



Examination

- Fat
 - Says she has lost weight since “her band”
- Clammy
- Yellow sclera
- ABC approach



Examination Cont

- A –
 - Maintaining.
- B –
 - Sats; 94% **on air**
 - RR 24
 - Lung fields clear



Examination Cont

- C –
 - HR 140
 - BP 105/60
 - Abdomen
 - Central and RUQ abdominal pain.
 - Percussion vs rebound?
 - ?Murphy's sign
 - inspiration is inhibited by pain on palpitation
- D –
 - AVPU vs GCS
- E –
 - T 38.2
 - BM 19



Investigations

- What do you want **and** why??
 - Least invasive → most invasive
 - Cheapest → most expensive
 - Dullest → most awesome



Investigations

- FBC, U&E, LFT
- CRP
- ?Amylase
- G&S vs XM
- ABG
- ?Erect CXR/AXR
- ECG
- Urine dip
- ?USS

Ultrasound



Management

- Intravenous fluids and analgesia should be given. **NBM**
- PR NSAIDs?
- Antibiotics – pre or post op? PO or IV?
- When to operate?
- Which operation?



Biliary Colic \pm Cholecystitis

- Three types of stones
 - Cholesterol stones (15%)
 - Mixed stones (80%)
 - Pigment stones (5%)
- A stone can cause distention of the gallbladder outlet/duct system.
- *This is biliary colic*



Biliary Colic \pm Cholecystitis

- Biliary colic can resolve
 - when the stone is passed,
 - or falls back into the gallbladder.
- May lead to a chemical or bacterial inflammation of the gallbladder...
- *This is acute cholecystitis*



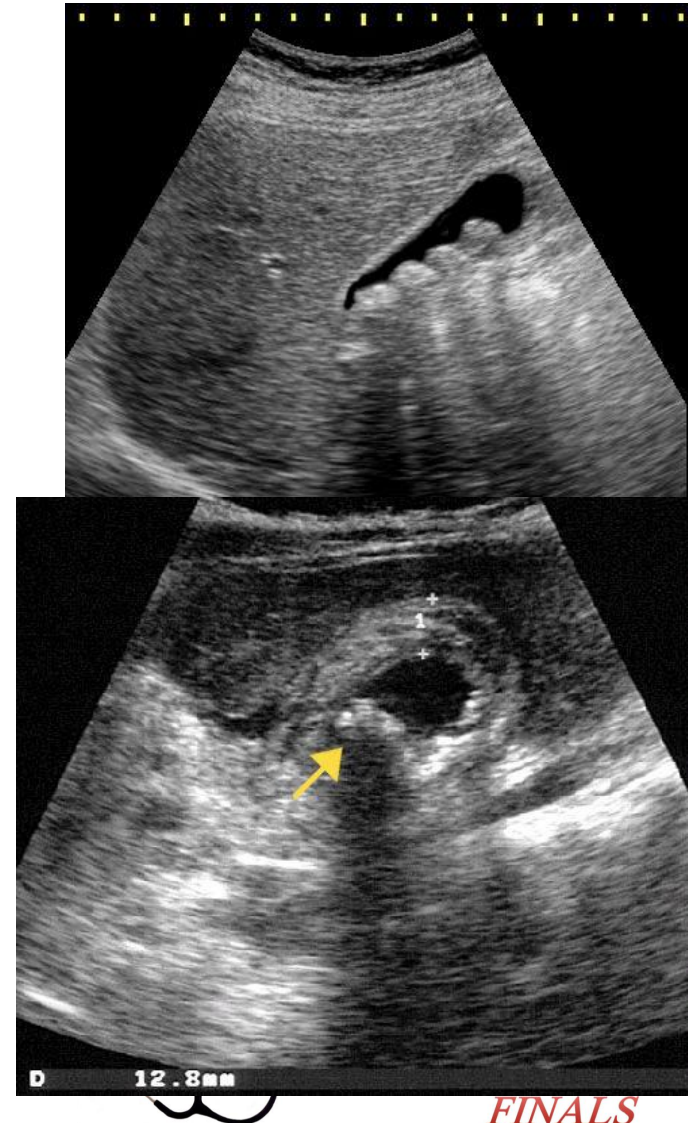
Cholecystitis

- **History and Clinical Features**
- **Biliary colic**
- Constant pain (usually greater than 12 hours duration) in right upper quadrant
- Dyspepsia, fat intolerance
- Fever, tachycardia, rigors
- Tenderness in right upper quadrant
- **Murphy's sign** - guarding in right upper quadrant on deep inspiration



Cholecystitis

- **Investigations**
- FBC, U&E, LFT, clotting, CRP
- 10% of gallstones are radio-opaque, so AXR may not be helpful
- Ultrasound is the initial investigation of choice
- Diagnostic features on ultrasound include
 - Presence of gallstones
 - Distended thick-walled gallbladder
 - Pericholecystic fluid
 - Murphy's sign demonstrated with ultrasound probe



Cholecystitis

- **Initial Management**
- **ABCDE**
- Pain relief is very important!
- Patients can have clear fluids only until the USS is done. No milky drinks at all
- Patients with suspected cholecystitis need IV antibiotics.
- Patients with biliary colic DO NOT.



- **Continuing Management**

- Fat free diet can be introduced after the USS. Go back to fluids if the pain is worse.
- Controversy;
 - Day-case laparoscopic cholecystectomy for elective planned procedure
 - Early laparoscopic cholecystectomy (to be carried out within 1 week of diagnosis) with acute cholecystitis.
- If there is a hx of pancreatitis then lap chole within 3 weeks

<http://www.nice.org.uk/guidance/cg188/resources/gallstone-disease-diagnosis-and-initial-management-35109819418309>

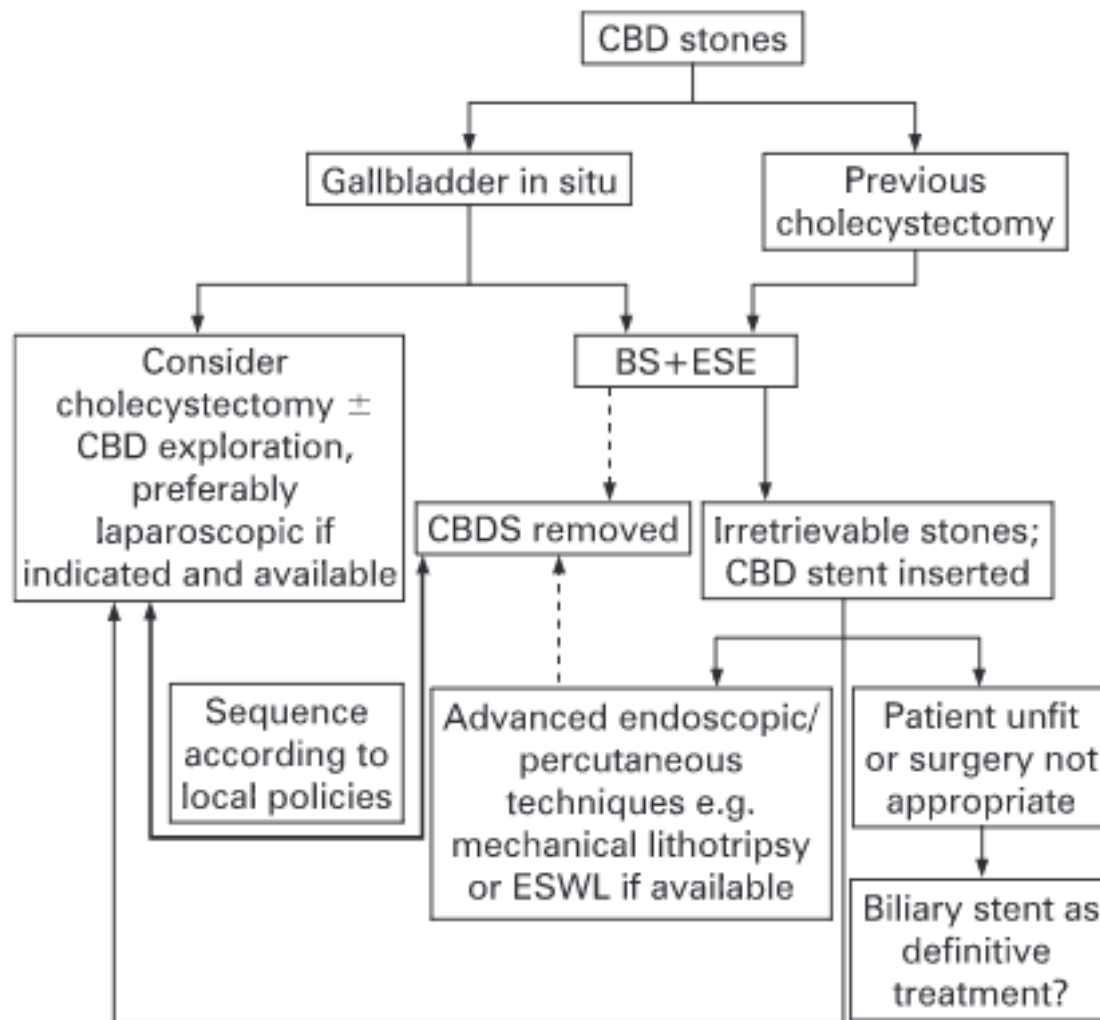


Surgery

- *Laparoscopic cholecystectomy* is the preferred procedure.
- *Early surgery* (within seven days of the onset of symptoms) appears to be safe and shortens hospital stay.
- *Postoperative complications* are rare but do occur.
 - Most significant is injury to the bile duct
 - 0.2% in both open and laparoscopic surgery.
- *Percutaneous cholecystotomy* is useful for patients who are unfit for cholecystectomy



Algorithm for management of common bile duct stones.



BS, biliary sphincterotomy;
CBD, common bile duct;
CBDS, common bile
duct stones;
ESE, endoscopic stone extraction;
ESWL, extra-corporeal
shock wave lithotripsy.

May your finals be as
easy as you are.

somee_cards



 **SIMPLY**
FINALS

Case 5 - 50♂ I...cant...poo...

- 50 year old male
- Intermittent abdominal pain
- Has been sick a few times
- BNO for 5 days
- Has a history of previous hernia repair

Examination

- Distended abdomen
- Looks pretty uncomfortable
- ABC approach...

Examination Cont

- A –
 - Maintaining.
- B –
 - Sats; 98% **on air**
 - RR 26
 - Lung fields - clear



Examination Cont

- C –
 - HR 115
 - BP 115/75
 - Abdomen
 - Painful throughout abdomen.
 - Distended
 - Hyperactive bowel sounds
 - Noted to have not PUed either for ???time
 - PR empty rectum
- D –
 - AVPU vs GCS
- E –
 - T 37.2
 - BM 10



Investigations

- What do you want **and** why??
 - Least invasive → most invasive
 - Cheapest → most expensive
 - Dullest → most awesome

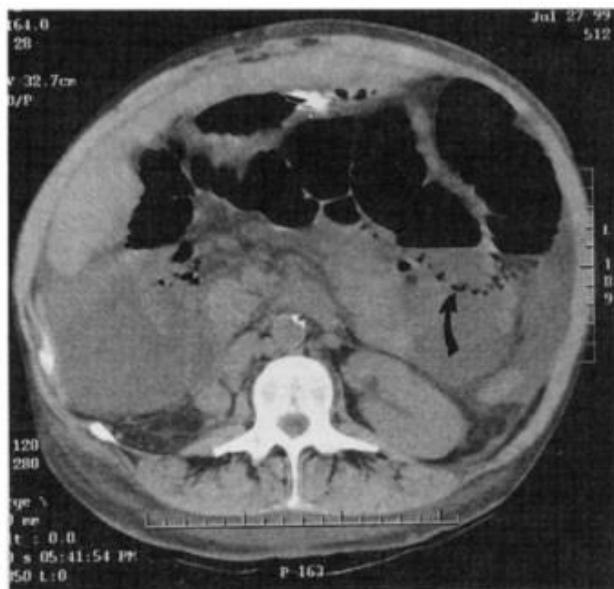


Investigations

- FBC, U&E, LFT, albumin, magnesium, glucose
- CRP
- Amylase
- G&S vs XM
- ABG
- Erect CXR/AXR
- ECG
- Urine dip
- ?USS
- ?Contrast enhanced CT



- 1) Presence of an air-fluid differential height in the same small-bowel loop
- 2) Presence of a mean level width greater than 25 mm



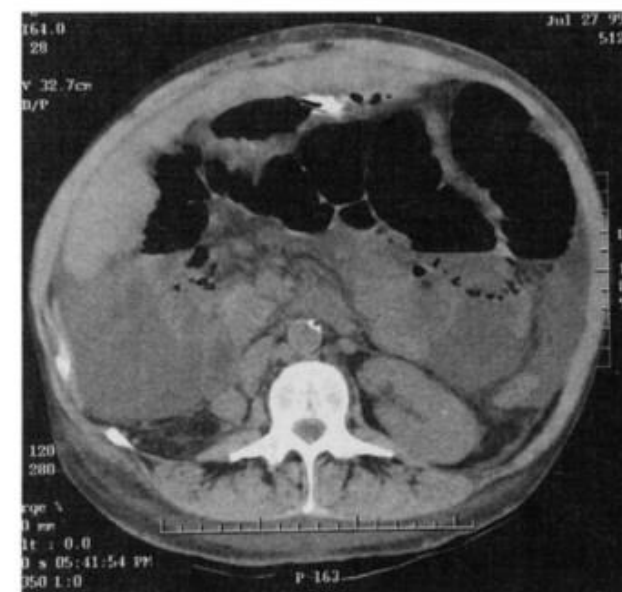
A



B



C



D

Management

- Aggressive fluid resuscitation + NBM
- Administration of analgesia and antiemetic
- Administration of antibiotics.
 - (Antibiotics are used to cover against gram-negative and anaerobic organisms.)
- Placement of a nasogastric (NG) tube for suctioning GI contents and preventing aspiration.



Small Bowel Obstruction

- Small bowel obstruction accounts for 5% of acute surgical admissions and 80% of bowel obstruction
- In UK the commonest causes are:
 - Adhesions (60%)
 - Strangulated hernia (20%)
 - Malignancy (5%)
 - Volvulus (5%)



Small Bowel Obstruction

Fluid and gas accumulate behind obstruction, causing proximal bowel to dilate



Peristaltic activity increases (COLICKY PAIN)



Inhibition of motor active (protective)



Increased intraluminal pressure/vascular occlusion leads to strangulation



Venous compromise leads to oedema, which causes arterial compression, ischaemia and necrosis, which may then perforate.

Small Bowel Obstruction

- **History**
- Colicky central abdominal pain
 - Constant sharp if strangulation, ischaemia or if bowel perforates
- Vomiting - early in high obstruction
- Diarrhea - early or post-obstruction after it has resolved
- Absolute constipation - late feature of small bowel obstruction
- Previous surgery, radiotherapy
- History of malignancy



Small Bowel Obstruction

- **Examination**
- Dehydration -> tachycardia, hypotension and oliguria
- Features of peritonism indicate strangulation or perforation
- Fever and tachycardia together - late, associated with strangulation or perforation
- Abdominal distention
- Hyperactive 'tinkling' bowel sounds- early
- Absent bowel sounds - late.
- **PR** – Helps differentiate between mechanical and functional
 - Mechanical, often empty, collapsed rectum (though masses may be palpable)



Small Bowel Obstruction

- **Investigations**
- FBC, U&E, Amylase, XM blood
- ABG
- AXR and Erect CXR

- AXR
 - Bowel loops with bands which traverse the gut
 - Central bowel loops
 - ‘Pathological’ if diameter more than 5cm
- CT
 - most cases
 - especially on first presentation with confirmed AXR finding



Small Bowel Obstruction

- **Management**
- **ABCDE**
- May require more than 5 litres of intravenous crystalloid
- Adequacy of resuscitation should be judged by urine output or central venous pressure
- Surgery in under resuscitated patient is associated with increased mortality
- NGT in all patients!
- If obstruction presumed to be due to adhesions and there are no features of peritonism
 - Conservative management (*drip and suck*) for up to 48 hours is often safe
 - Requires regular clinical review
- If features of peritonism or systemic toxicity present
 - Need to consider early operation
 - Exact procedure will depend on underlying cause

Indications for surgery

Absolute

Generalised peritonitis
Localised peritonitis
Visceral perforation
Irreducible hernia

Relative

Palpable mass lesion
'Virgin' abdomen
Failure to improve

Trial of conservatism

Incomplete obstruction
Previous surgery
Advanced malignancy
Diagnostic doubt

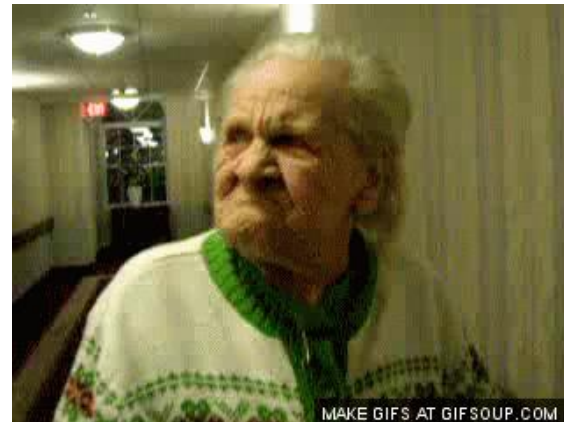




(c) Sarah Andersen

Case 6 - 87 ♀ PICKLES!

- 87 year old female
- Nursing home resident
- Found on floor; can only have been there for 3-4 mins
- Shouting PICKLES a lot
- Smells strongly of urine



History

- Ambulance crew report she was left for a few minutes and then a carer found her on the floor
- No collateral history available. Clearly demented.
- AMTS – 0/10

Examination

- Pleasantly confused
- Left leg noticeably short and externally rotated
- Patient comfortable
- ABC approach

Examination Cont

- A –
 - Maintaining.
- B –
 - Sats; 94% **on air**
 - RR 16
 - Lung fields – bibasal creps



Examination Cont

- C –
 - HR 95
 - BP 140/80
 - Abdomen
 - NAD
- D –
 - AVPU vs GCS
- E –
 - T 37.1
 - BM 10



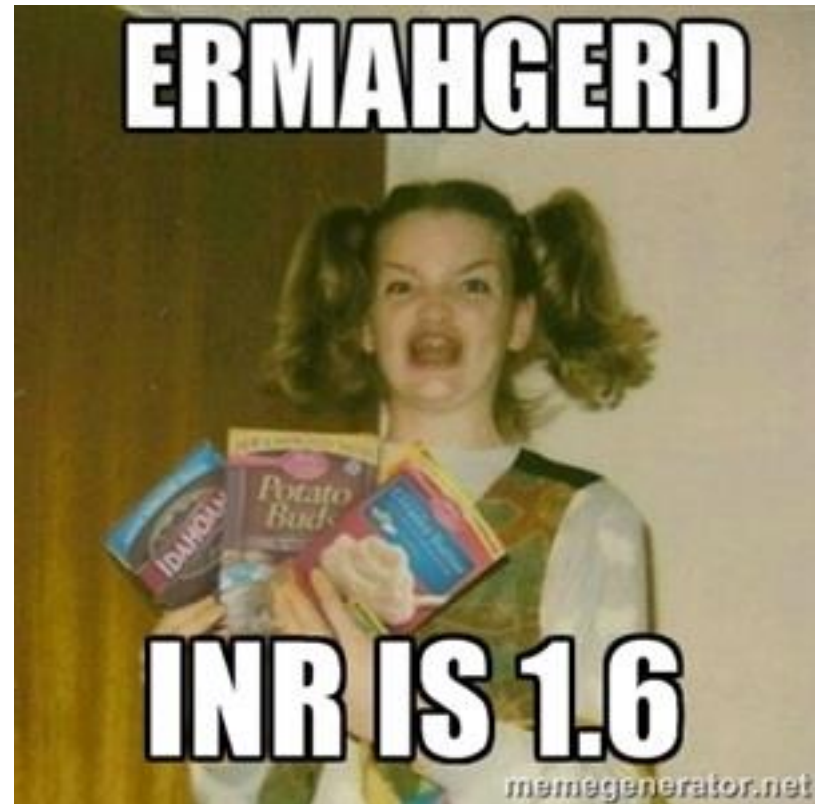
Investigations

- What do you want **and** why??
 - Least invasive → most invasive
 - Cheapest → most expensive
 - Dullest → most awesome



Investigations

- FBC, U&E, LFT, clotting
- G&S vs XM
- CXR
- Pelvic x-ray + lateral hip
- ECG
- Urine dip





Management

- IV access and commence intravenous fluids if indicated.
- Ensure analgesia (including opiates) is adequate
- NSAIDs are not recommended.
- Early assessment of treatable comorbidities
- Follow local protocol for NoF fractures
- What op? Consent?



Hemiarthroplasty

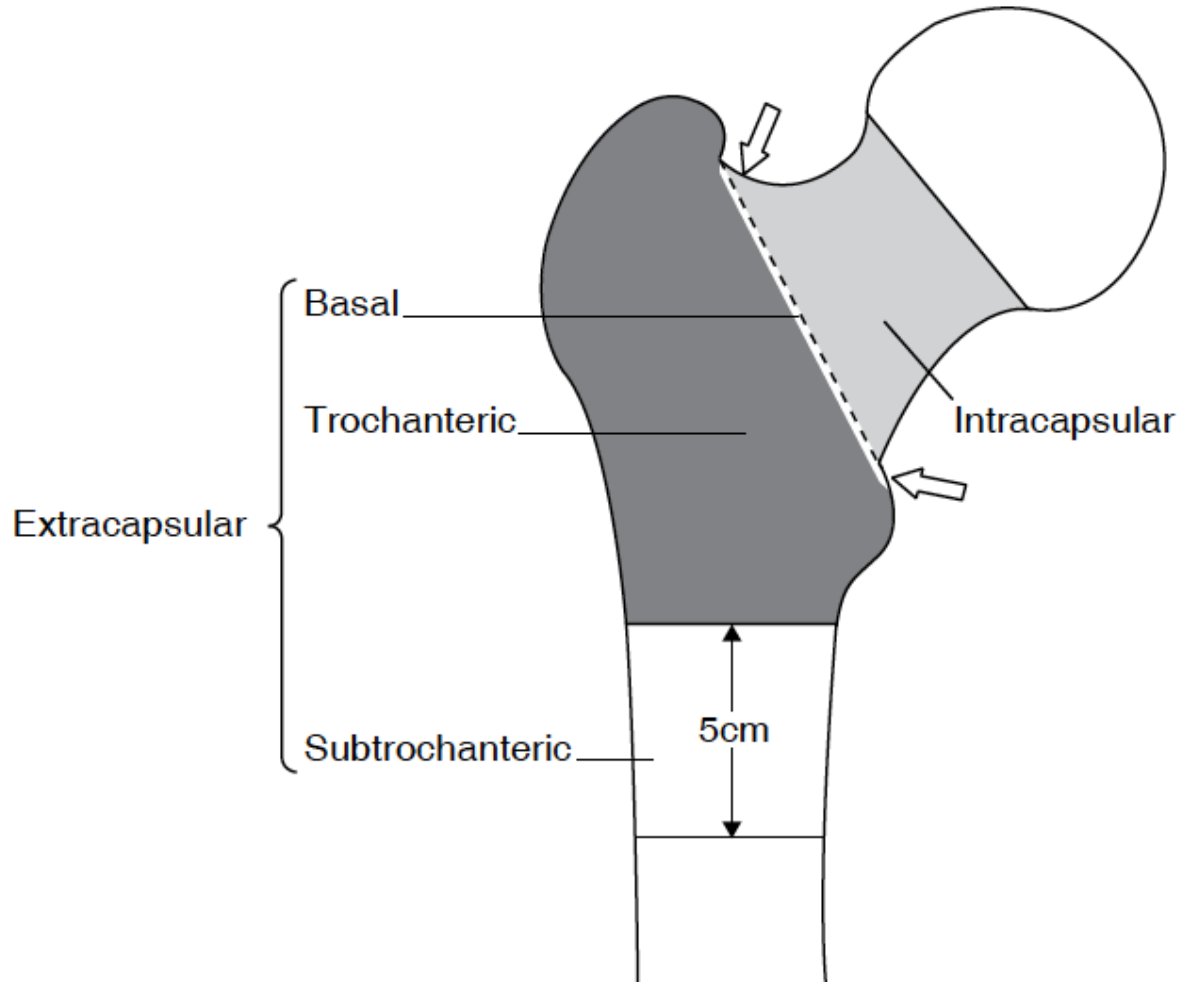


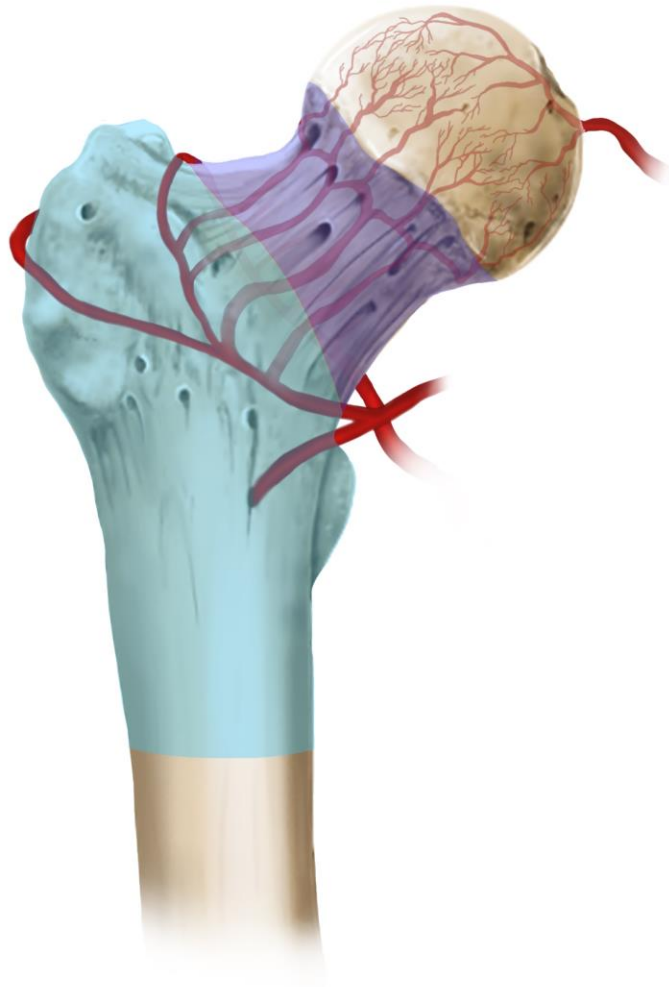
Neck of Femur Fractures

- Refers to fractures of the proximal femur
- 70,000 hip fractures occur per year in the UK
- Total cost of care is >£2billion
 - 10% mortality at 1 month
 - 40% of patients with a hip fracture die within a year
- 50% of survivors are less independent than before the injury
- Most morbidity is related to coexisting medical conditions
- Main risk factors are female sex and osteoporosis



Classify





Normal Xray



Classification

- Displaced vs undisplaced



Subcapital Fracture

Displaced



"Undisplaced"



NICE Guidance Saves Lives and Makes £

Standards for Practice

1. Secondary prevention, anti-resorptive therapy for osteoporosis and falls assessments are effective in reducing further fragility fractures and must be an integral part of the fracture care.
2. Hip fractures should be managed by a multidisciplinary team including orthogeriatricians, orthopaedic surgeons, anaesthetists, nursing and allied health professionals with expertise appropriate for these frail patients.
3. Patients who cannot weight-bear and who may have a hip fracture should be offered magnetic resonance imaging (MRI) if anteroposterior pelvis and lateral hip X-rays are negative; if MRI is not available within 24 hours or is contraindicated, consider computed tomography.
4. Assess the patient's pain and offer immediate analgesia on presentation at hospital and regularly as part of routine nursing observations throughout admission, including patients with cognitive impairment. Ensure analgesia is sufficient to allow movements necessary for investigations and for nursing care and rehabilitation.
5. Identify and treat correctable co-morbidities immediately so that surgery is not delayed. Intravenous fluids should be administered and appropriate blood tests undertaken. Preoperative assessment should follow local protocols including for those presenting on anticoagulants.
6. Perform hip fracture surgery on the day of, or the day after, admission on a planned trauma list. Consultants or senior staff should supervise trainee and junior members of the anaesthesia, surgical and theatre teams when they carry out hip fracture procedures.
7. Operate on patients with the aim to allow them to fully weight bear (without restriction) in the immediate postoperative period. Offer patients' mobilisation with a physiotherapist at least once a day and assessment on the day after surgery.
8. From admission, offer patients a formal, acute, orthogeriatric or orthopaedic ward-based Hip Fracture Programme that includes orthogeriatric assessment, rapid optimisation of fitness for surgery, early identification of individual goals for multidisciplinary rehabilitation to recover mobility and independence, and to facilitate return to pre-fracture residence and long-term wellbeing.
9. Assess patient's risk of delirium and dementia by actively looking for cognitive impairment when patients first present with hip fracture and perform regular re-assessment.
10. If a hip fracture complicates or precipitates a terminal illness, the multidisciplinary team should still consider the role of surgery as part of the palliative care.
11. Patients should be assessed and treated for their risk of venous thromboembolism and pressure sores.
12. Offer patients (or, as appropriate, their carer and/or family) verbal and printed information about treatment, care and rehabilitation.
13. Each hospital should submit data to the National Hip Fracture Database to monitor its performance against national benchmarks and quality standards.



Take home Message for NoFs

- MDT inc Ortho-Geri, Ortho etc
- X-ray → CT → MRI
- Painkillers; reassess need
- Do not delay surgery
- Get them walking
- Don't give them a DVT



Good luck at your new job
convincing people you're
only incompetent
because you're
new.



someecards

 **SIMPLY**
FINALS

Case 7 – 19♂ I totes have leg pain bruv. Lolz

19 year old male

Tells you he “fell” jumping a
2m high fence...taking
kittens...to the orphange...

Leg is excutiatingly painful

Demanding morphine

Keeps swearing at everyone.



History

- Normally fit and well
- Smokes marijuana, cigarettes and drinks “socially”
- Unemployed



Examination

- Loud. Angry. Swearing
- Leg noticeably deformed
- Closed, neurovascularly intact
- ABC approach

Examination Cont

- A –
 - Maintaining.
- B –
 - Sats; 99% **on air**
 - RR 16
 - Lung fields – clear



Examination Cont

- C –
 - HR 70
 - BP 125/80
 - Abdomen
 - NAD
- D –
 - AVPU vs GCS
- E –
 - T 37.1
 - BM 5



Investigations

- What do you want **and** why??
 - Least invasive → most invasive
 - Cheapest → most expensive
 - Dullest → most awesome



X-ray



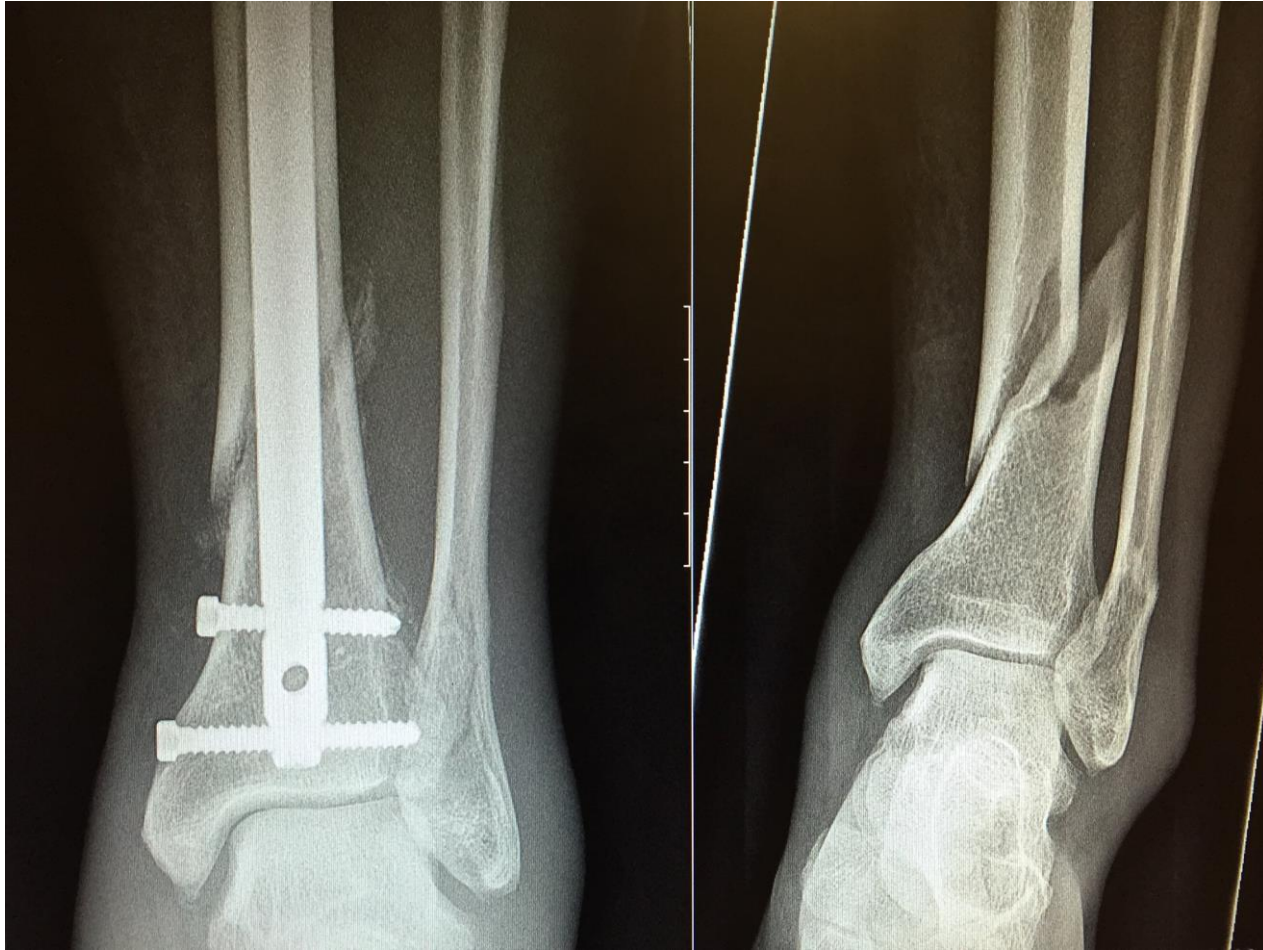
Investigations

- Do you need bloods?
- Do you need any other x-rays

Management

- Analgesia
- Immobilisation
- NBM

The next day...





 **SIMPLY**
FINALS

The next night...

- Patient is screaming
- Demanding morphine
- Threatening to leave



What are you worried about?



Examination and Management

- Cast/dressings off
- Pain +++
- Pain on passive stretch
- A lot more screaming



What now?

- You are the FY1
- What do you do?





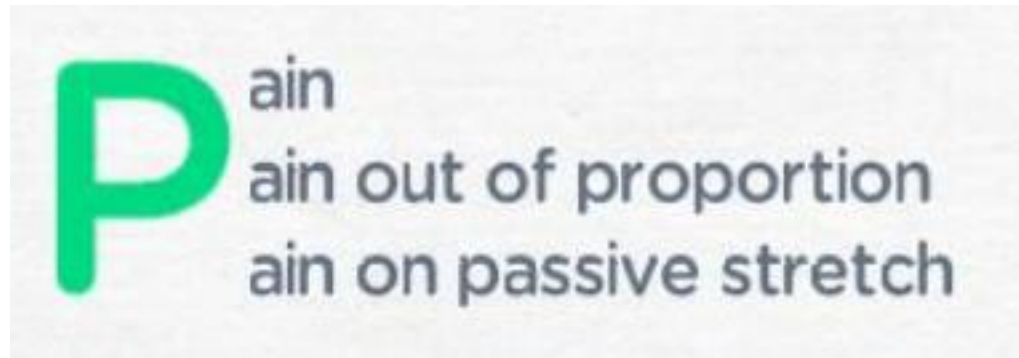
Compartment Syndrome

- Elevated tissue pressure within a closed fascial space
- Reduces tissue perfusion
- Results in cell death
- Pathogenesis
 - Too much inflow (edema, hemorrhage)
 - Decreased outflow (venous obstruction, tight dressing/cast)



Compartment Syndrome

- Pain out of proportion
- Palpably tense compartment
- Pain with passive stretch
- Paresthesia/hypoesthesia
- Paralysis
- Pulselessness/pallor
- Perishing cold



Compartment Syndrome

- Remove cast or dressing
- Place at level of heart
(DO NOT ELEVATE to optimize perfusion)
- Call for help
- Role of bedside pressure measurements



Case 8 - 72 ♂ I have back pain!

- 72 year old male
- Retired lawyer (he made sure you knew that)
- Comes into A&E with back pain
- Unhappy because GP is shut and over the counter meds don't work and he can't wee
- Smells slightly of urine.



History

- Hurts all the time but wakes him up at night
- Hasn't been to the toilet in 18 hours. Keeps mentioning this
- Any other questions you want to ask?
 - Pain
 - Urology



History – Red flags

- Weight loss
- Pain at rest
- Fever/rigor
- Bladder/bowel dysfunction
- Any others?



Examination

- Can't get comfy
- Distended abdomen



Examination Cont

- A –
 - Maintaining.
- B –
 - Sats; 99% **on air**
 - RR 16
 - Lung fields – clear



Examination Cont

- C –
 - HR 99
 - BP 120/80
 - Abdomen
 - Distended.
 - PR ???
- D –
 - Neuro exam...
- E –
 - T 37.1
 - BM 4



A Terrifying Diagram!

ASIA

AMERICAN SPINAL INJURY ASSOCIATION

INTERNATIONAL STANDARDS FOR NEUROLOGICAL CLASSIFICATION OF SPINAL CORD INJURY (ISNCSCI)

ISCOS

INTERNATIONAL SPINAL CORD SOCIETY

Patient Name

Date/Time of Exam

Examiner Name

Signature

RIGHT

MOTOR KEY MUSCLES

UEL (Upper Extremity Right)

LER (Lower Extremity Right)

(VAC) Voluntary Anal Contraction (Yes/No)

RIGHT TOTALS (MAXIMUM)

MOTOR SUBSCORES

UEL + UEL = UEMS TOTAL

LER + LEL = LEMS TOTAL

SENSORY KEY SENSORY POINTS

Light Touch (LTR)

Pin Prick (PPR)

Comments (Non-key Muscle? Reason for NT? Pain?):

RIGHT TOTALS (MAXIMUM)

MOTOR SUBSCORES

UETR + UETR = UETR TOTAL

LETR + LETR = LETR TOTAL

KEY SENSORY POINTS

Light Touch (LTR)

Pin Prick (PPR)

Key Sensory Points

RIGHT TOTALS (MAXIMUM)

MOTOR SUBSCORES

UETR + UETR = UETR TOTAL

LETR + LETR = LETR TOTAL

SENSORY KEY SENSORY POINTS

Light Touch (LTL)

Pin Prick (PPL)

Left Total

MOTOR SUBSCORES

UETR + UETR = UETR TOTAL

LETR + LETR = LETR TOTAL

MOTOR KEY MUSCLES

UEL (Upper Extremity Left)

LER (Lower Extremity Left)

(DAP) Deep Anal Pressure (Yes/No)

LEFT TOTALS (MAXIMUM)

MOTOR SUBSCORES

UETR + UETR = UETR TOTAL

LETR + LETR = LETR TOTAL

1. SENSORY

2. MOTOR

3. NEUROLOGICAL LEVEL OF INJURY (NLI)

4. COMPLETE OR INCOMPLETE?

5. ASIA IMPAIRMENT SCALE (AIS)

6. ZONE OF PARTIAL PRESERVATION

7. SENSORY

8. MOTOR

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REV 04/15

Investigations

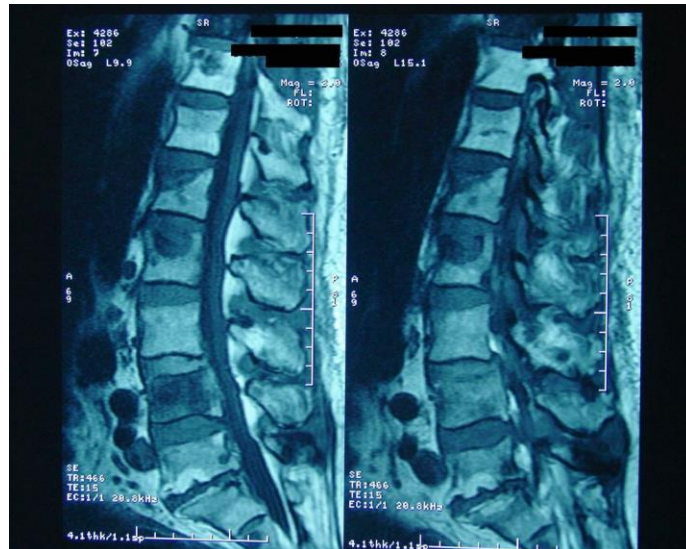
- What do you want **and** why??
 - Least invasive → most invasive
 - Cheapest → most expensive
 - Dullest → most awesome



Investigations

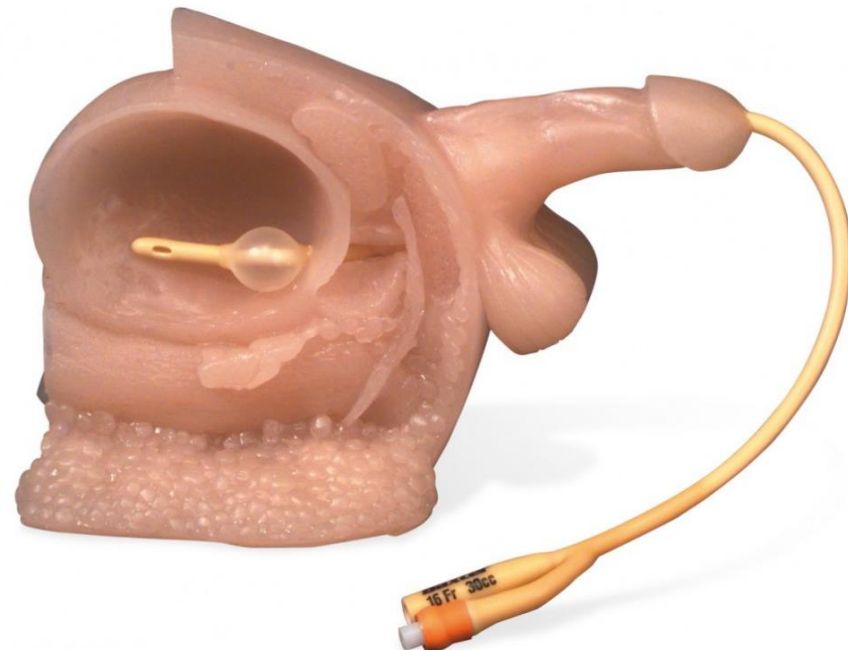
- FBC, U&E, LFT, clotting, PSA
- G&S
- CXR
- Do you x-ray the spine?
- ECG
- Urine dip +/- bladder scan
- What other imaging?

- Radiographic
 - AP and lateral of involved area off spine
- CT scan
 - helpful to identify metastatic lesions to the spine
- MRI
 - useful to show neurologic compromise of the spine



Management

- IV access and commence intravenous fluids if indicated.
- Ensure analgesia (including opiates) is adequate
- Who else needs to see him?
- What might be going on?

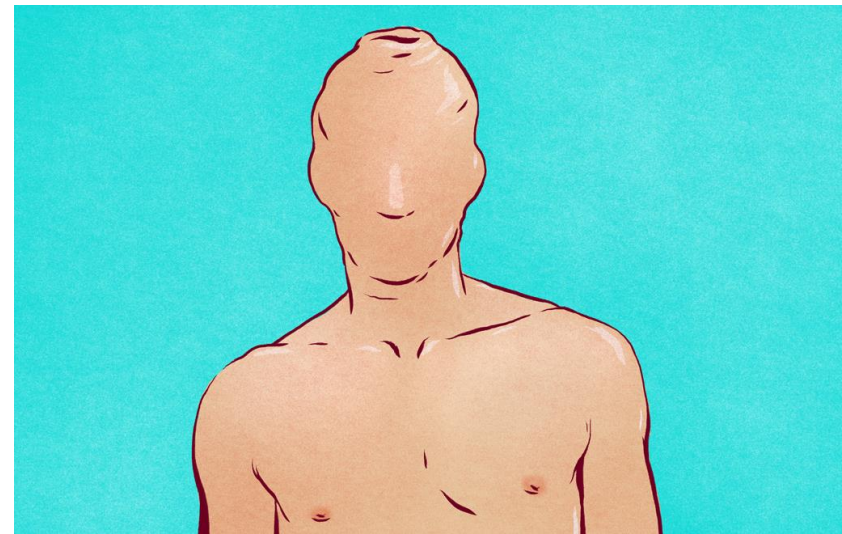
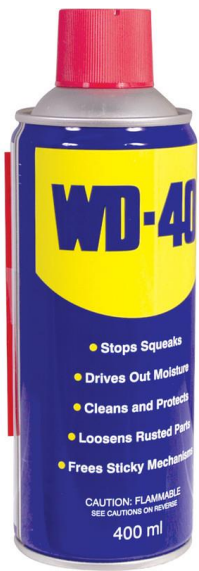


Prognosis

- thyroid: 48 months
- prostate: 40 months
- breast: 24 months
- kidney: variable but may be as short as 6 months
- lung: 6 months

Quick Catheter Chat

- Sterile technique
- Lubricant in urethra and on catheter
- “Penis up to the sky” + cough
- DO NOT INFLATE UNTIL URINE SEEN



Case 9 - 65 ♂ Cold feet

- 65 year old male
- Sudden onset left foot pain
- Walks with stick
- You saw them smoking outside the hospital when you came into work



History

- 1hr history – severe pain on movement
- Normally only walk 100yards before pain
- MI, HTN, Chole, diabetes
- Anything else?



Examination

- Cold
- Mottled & blanching
- Absent pulses distal to popliteal
- Painful ++++
- Motor and sensation intact

Examination Cont

- A –
 - Maintaining.
- B –
 - Sats; 89% **on air**
 - RR 16
 - Lung fields – bibasal creps



Examination Cont

- C –
 - HR 116
 - BP 165/90
 - Abdomen
 - NAD
- D –
 - alert
- E –
 - T 37.1
 - BM 10



Investigations

- What do you want **and** why??
 - Least invasive → most invasive
 - Cheapest → most expensive
 - Dullest → most awesome



Investigations

- Hand-held Doppler ultrasound
- FBC
- U&E/LFT/Clotting
- ESR
- Glucose
- Lipids.
- Thrombophilia screen.
- ECG

Management

- IV access and commence intravenous fluids if indicated.
- Ensure analgesia (including opiates) is adequate
- Embolic vs Thrombotic
- Revascularise
- Reconstruct
- Remove



Embolic vs Thrombotic

- **Embolic**
 - surgical embolectomy or local intra-arterial thrombolysis:
 - If embolectomy fails
 - on-table angiogram + bypass graft or intraoperative thrombolysis
 - If successful, anticoagulation with heparin
- **Thrombotic**
 - intra-arterial thrombolysis, angioplasty or bypass surgery
 - If acute arterial emboli or thrombosis, immediate unfractionated heparin
 - Followed by long-term warfarin for embolism.



Limb ischaemia

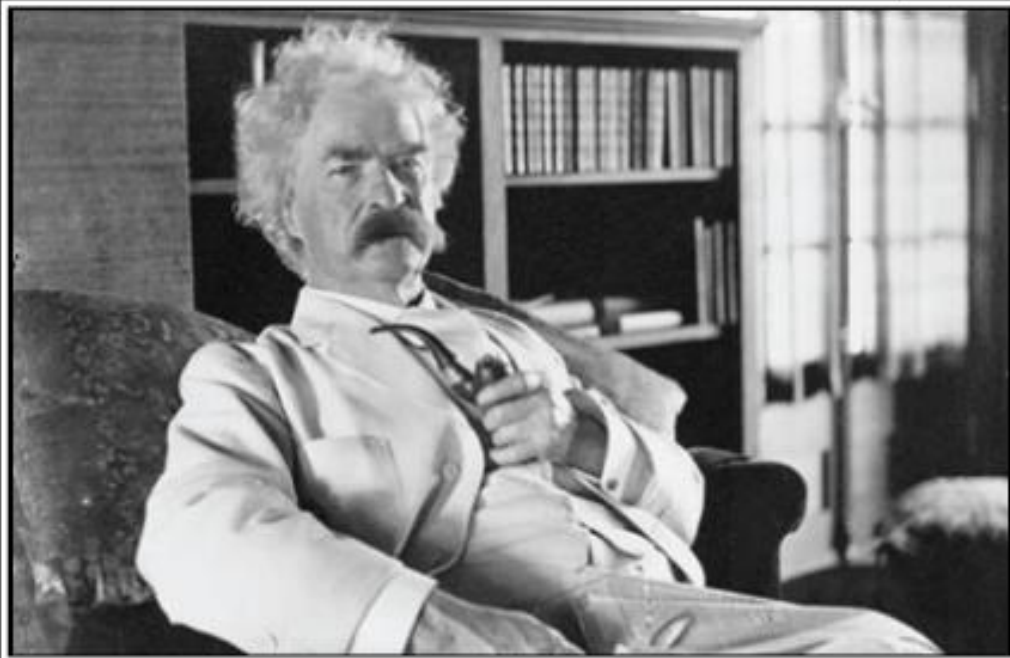
- **Acute (on chronic)**
 - **Emobilic (thrombotic)**
 - No claudication
 - Sudden onset (sec/min)
 - Recent MI/AF/AAA
 - Embolectomy
 - Thrombolysis
 - Emergency recon
 - Amputation (10-20% mort)
- **Chronic**
 - **Thrombotic**
 - Claudication
 - Gradual onset (hrs)
 - Chronic vascular disease
 - Thrombolysis
 - Angioplasty
 - Emergency recon
 - Amputation

Good Luck!



#HammerItOut
BULLYING, HARASSMENT AND UNDERMINING

sloshspot.com



ATTRIBUTES

“All you need in this life is ignorance
and confidence; then success is sure.”

simonsfleming@doctors.org.uk

@OrthopodReg

