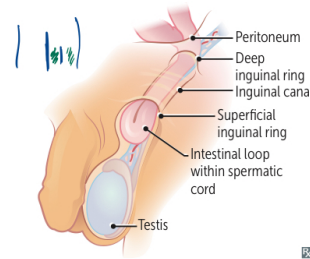


Hernias :

Indirect inguinal hernia

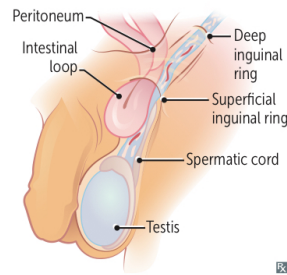


Protrudes through the internal (deep) inguinal ring, external (superficial) inguinal ring, and into the groin. Enters internal inguinal ring lateral to inferior epigastric vessels. Caused by failure of processus vaginalis to close (can form hydrocele). May be noticed in infants or discovered in adulthood. Much more common in males. Follows the pathway of testicular descent. Covered by all 3 layers of spermatic fascia.



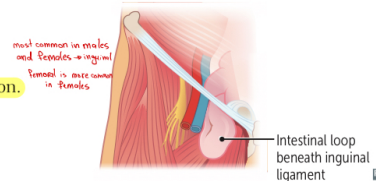
Direct inguinal hernia

Protrudes through inguinal (Hesselbach) triangle. Bulges directly through parietal peritoneum medial to the inferior epigastric vessels but lateral to the rectus abdominis. Goes through external (superficial) inguinal ring only. Covered by external spermatic fascia. Usually occurs in older males due to acquired weakness of transversalis fascia. MDs don't lie: Medial to inferior epigastric vessels = Direct hernia. Lateral to inferior epigastric vessels = indirect hernia.



Femoral hernia

Protrudes below inguinal ligament through femoral canal below and lateral to pubic tubercle. More common in females, but overall inguinal hernias are the most common. More likely to present with incarceration or strangulation (vs inguinal hernia).



True

- The mortality associated with bowel strangulation is over 10%
- Direct inguinal hernias protrude medially to the inferior epigastric vessels
- Obstruction is more common in indirect hernias
- Hernioplasty is the surgical treatment for inguinal hernia in adult men.
- The inguinal hernia appears medial and above to the pubic tubercle.
- Irreducible hernia is a risk factor for strangulation
- Chronic postoperative pain can be as high as 20 % of cases
- Is a clean operation
- Testicular atrophy is a known postoperative complication
- Are second to adhesions as a cause of intestinal obstruction

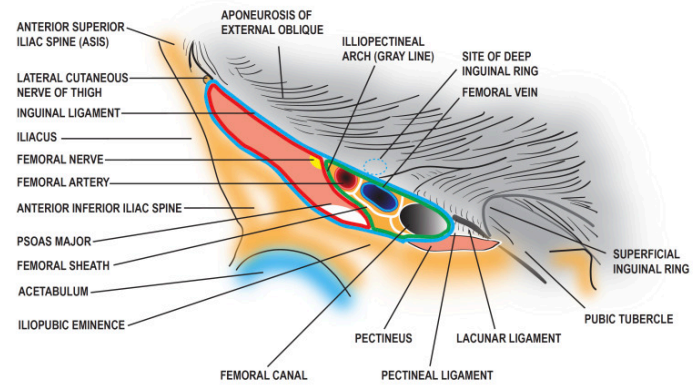
False :

- Are 2nd to adhesions as a cause of strangulated intestinal obstruction
- 20% of inguinal hernias are indirect
- In women inguinal hernias are less common than femoral hernias
- Trial reduction of pediatric inguinal hernias is not recommended
- Cannot be performed as a day case setting if it was done under local anesthesia

Femoral canal :

Borders

- The femoral canal is located in the anterior thigh, within the femoral triangle. It can be thought of as a **rectangular** shaped compartment.
- It has four borders and an opening:
 - **Medial border** – Lacunar ligament.
 - **Lateral border** – Femoral vein.
 - **Anterior border** – Inguinal ligament.
 - **Posterior border** – Pectineal ligament, superior ramus of the pubic bone, and the pectineus muscle



True :

- Lies medial to the femoral vein
- Has the inguinal ligament as its anterior border
- Has the pectineal ligament as its posterior border
- Contains the lymph node of Cloquet

False :

- Has the lacunar ligament as its lateral border (medial)

Abdominal anatomy :

True :

- The abdomen can be divided into 4 quadrants.
- The trans pyloric plane is at the level of L1
- McBurney's point is located one third distance between anterior superior iliac spine and the umbilicus
- The umbilicus is normally situated mid-way between the xyphoid process and the symphysis pubis

False :

- The deep inguinal ring is 1.25cm below the mid inguinal point (above)

Sepsis

■ Systemic Inflammatory Response Syndrome (SIRS)	
■ Temp > 38 or < 36	
■ HR > 90	
■ RR > 20 or PaCO ₂ < 32	
■ WBC > 12 or < 4 or Bands > 10%	
	TWO out of four criteria acute change from baseline
■ Sepsis	
■ The systemic inflammatory response to infection.	
■ Severe Sepsis	
■ Organ dysfunction secondary to Sepsis.	
■ e.g. hypoperfusion, hypotension, acute lung injury, encephalopathy, acute kidney injury, coagulopathy.	
■ Septic Shock	
■ Hypotension secondary to Sepsis that is resistant to adequate fluid administration and associated with hypoperfusion.	

True :

- Sepsis is a clinical syndrome of life-threatening organ dysfunction caused by a dysregulated response to infection.
- IV fluids challenge with 20-30 ml/kg is the first method used to restore perfusion.
- The source of infection should be controlled as early as possible.
- Estimates of successful reperfusion include ScvO₂ (Central Venous saturation) and lactate clearance.
- Sepsis is defined as life-threatening organ dysfunction caused by a dysregulated host response to infection.
- The baseline SOFA score can be assumed to be zero in patients not known to have pre-existing organ dysfunction.
- Management with Broad spectrum Antibiotic should be done within one hour of diagnosis.
- SOFA score ≥ 2 reflects an overall mortality risk of approximately 10% in a general hospital

False :

- Intra-venous antibiotics could be delayed up to 6 hours until specimens of blood, have been taken for Gram stain and culture. (1-3 hours)
- Organ dysfunction can be identified as an acute change in total SOFA (sequential organ failure assessment score) score ≥ 4 points consequent to the infection. (≥ 2)

Cellulitis :

True :

- Penicillin is an effective treatment
- Blood culture is often negative
- It can be caused by clostridium perfringens.
- It is poorly localized.
- This is non-suppurative invasive infection of tissue.

False :

- This is non-suppurative spreading infection of the skin.
- It is rarely caused by wounds.
- It is commonly caused by staphylococci.
- Gram negative organisms do not cause cellulitis.
- Systemic signs are not present

Erysipelas

True :

- caused by group A Strep
- Painful
- Face is common site
- Treated with penicillin

False :

- Red, flat, skin lesions (not flat)

(Erysipelas)


Definition: skin infection, Affects the **upper dermis**

Organism: B-hemolytic streptococci (A) or S.pyogens

Important characteristics:

- Red, tender, **demarcated** and painful plaque
- Occur in infant and young children

Treatment:
Penicillin (IV or Oral)



Nonpurulent skin and soft tissue infections

Definitions [3][4]

- **Erysipelas:** superficial skin infection involving the **upper dermis**
- **Cellulitis:** local infection of the **deep dermis and subcutaneous tissue**

Clinical features [3][4]

- Local signs: erythema, edema, warmth, tenderness
 - Specific to erysipelas: raised, **sharply demarcated** lesion
 - ✗ ◦ Specific to cellulitis: **poorly defined** lesion with induration
- Cutaneous lymphatic edema (historically referred to as "peau d'orange")
- Common locations: **lower limbs**, face
- Possible additional features
 - **Lymphangitis:** red streaks radiating from the skin lesion and following the direction of the lymphatic vessels
 - Lymphadenitis: swollen, tender, regional lymph nodes
 - Bullae
 - Purulent exudate
- Systemic symptoms (in moderate/severe infections): fever, chills, confusion, nausea, headache, muscle and joint pain

Notes :

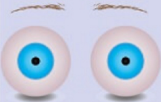


- Sequence of return of gastrointestinal motility after abdominal surgery is intestine, stomach, colon
- For a 70 kg man, the minimum acceptable urine output is 35 ml/hour
- 45-year-old male, non-diabetic scheduled for laparoscopic cholecystectomy, the best antimicrobial prophylaxis that have significantly lower overall infectious complications is Cephazolin
- first step in treating Ludwig's angina is Secure airway
- Lymphocytes are not phagocytic
- The majority of the blood volume at rest is contained within the venous system
- The principal types of proliferating cells in granulation tissue are Fibroblasts and endothelial cells
- Deficiency of vitamin c influence wound healing
- most important factor for wound healing is balanced diet
- Enteral nutrition -> diarrhea , parenteral -> no diarrhea
- Thyroid surgery for multinodular goitre is clean , no prophylactic antibiotic
- Vaccine should be given 1-2 weeks after splenectomy
- The most common cause of secondary bleeding that happens several days postoperatively is Infection
- If appropriately utilized, supervised exercise programs for patients with peripheral vascular disease can help in Increasing walking distance
- Transposition of the Great vessels is a cyanotic congenital heart disease in the newborn
- Pre renal acute renal failure -> $FeNa < 1$
- Body mass index is calculated By dividing body weight in kilograms by the square of body height in meters.
- Antibiotic use after surgery shouldn't exceed 24 hours (48 for cardiac surgery)
- Life threatening organ dysfunction caused by a dysregulated host response to infection is the definition of sepsis
- necrotizing fasciitis is a polymicrobial infection
- indication for FFP -> patient who is on warfarin with a high INR
- Drug of choice for hydatid cyst -> albendazole
- Sepsis with organ failure and persistent hypotension is the definition of Septic shock
- esophageal stricture is not absolute contraindications to insert NGT
- steroids are not given for treatment of pseudo membranous colitis
- Hypermagnesemia is associated with ECG changes consistent with hyperkalemia , Deep tendon reflexes are lost , Levels are parallel with potassium levels
- Source of protein in pts with trauma is liver
- SSI, usually occurs 4-5 days post op
- Prophylactic antibiotic not indicated in Herniorrhaphy (indicated in hernioplasty)
- Initial resuscitation with crystalloids
- the protein will start to be metabolized at 7th day post-op

- tetanus is caused by gram positive obligate anaerobes, majority of cases are due to endogenous infection, Tetanolysin is the most important neurotoxin responsible for the disease, The disease is characterized by episodes of convulsions with short period of muscle relaxation in between, E. Penicillin and metronidazole are used to treat an established infection.
 - In minor SSI -> no systemic signs
 - A major disadvantage of the peripheral technique in intravenous nutritional support is limited caloric delivery
 - atelectasis is the most common cause of postoperative fever that starts on postoperative day two.
 - The most commonly involved organ in penetrating abdominal trauma is Small bowel and in blunt trauma is spleen
 - Re-feeding syndrome is characterized by Hypokalemia, hypomagnesemia, hypophosphatemia
 - Not seen in hypovolemic shock -> distended neck veins
 - Energy expenditure to achieve mobility is higher (not lower) following above knee amputation compared to
 - below knee amputation
-
- Not to do in sepsis? Infection source control During 1st hour, stabilize the patient first
 - Wrong about fluids: 130mml/L of Cl in ringer lactate
 - Regarding wounds Which is true? Diverticulitis stage 2 is considered a contaminated wound
 - 1st in hemostasis >>> Vasoconstriction
 - Vit. C.>>> Hydroxylation of procollagen
 - True about abx: carbapenems have good coverage for gram +ve and anaerobes
 - True about gas gangrene?? pain, crepitus and toxemia
 - True>>> Canal of Nuck opens in labia majora
 - true about hypovolemic shock? Increased SVR
 - MCC in septic shock? staph/ pseudomonas/ Ecoli
 - true about septic shock: persisting hypotension requiring vasopressors to maintain a MAP of 65
 - Management of gastric outlet obstruction with hypochloremic hypokalemic metabolic alkalosis? 0.9 NS infusion with KCl
 - Most common cause of death after blood transfusion? - TRALI
 - Which of the following is true about body fluids? ± It might be affected by wide range of physiological variation
-
- Which of the following is true about body fluids? ± The concentration of sodium in the intravascular and the interstitial compartment is almost equal.
 - Amino acid most important in improving immunity: glutamine

- limit for K in peripheral line: 20 mEq
- Pt with crush injury, in respiratory distress, multiple rib fractures, life saving measure is: intubation and mechanical ventilation
- Plain AXR in SBO, what is the finding? Valvulae conniventes (plica circularis)
- Not complication of TPN: - Hypoglycemia (mentioned in past papers, but both HYPO/ HYPER glycemia are possible complications of TPN)

This ratio can provide valuable information regarding the primary energy substrate being utilized.

- **RQ of 1** indicates glucose oxidation
- **0.8** indicates protein utilization,
- **0.7** indicates fat metabolism.

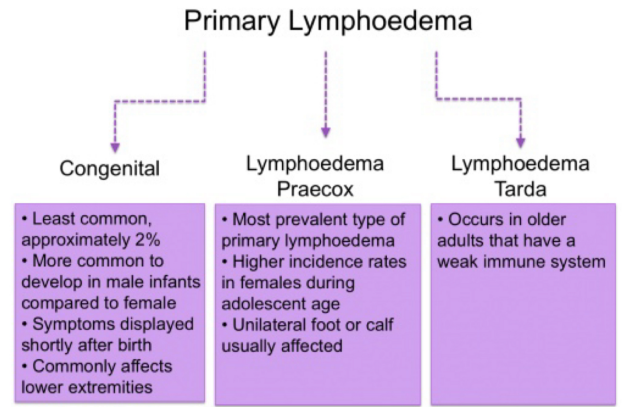
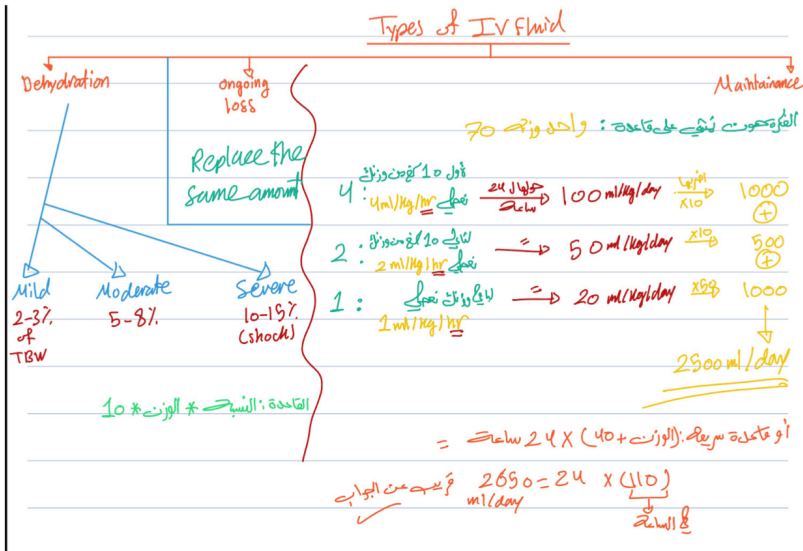
Behaviour	Response
 Eye Opening Response	4. Spontaneously 3. To speech 2. To pain 1. No response
 Verbal Response	5. Oriented to time, person and place 4. Confused 3. Inappropriate words 2. Incomprehensible sounds 1. No response
 Motor Response	6. Obeys command 5. Moves to localised pain 4. Flex to withdraw from pain 3. Abnormal flexion 2. Abnormal extension 1. No response

Types of Surgery		
Clean	Hernia repair breast biopsy	1.5%
Clean-Contaminated	Cholecystectomy Elective bowel resection	2-5%
Contaminated	Emergency bowel resection	5-30%
Dirty/infected	Perforation, abscess	5-30%

Massive transfusion

Definition

- The replacement of a large volume of blood in response to massive hemorrhage
- There is no universal threshold for a massive transfusion; proposed values include: ^{[54][55]}
 - Complete replacement of a patient's blood volume (~ 10 units of RBCs) within 24 hours
 - Replacement of ≥ 50% of a patient's blood volume (~ 5 units of RBCs) within 3 hours
 - Blood loss replacement at a rate of > 150 mL/minute
 - Transfusion of ≥ 3 units of pRBCs within 1 hour



SSI – Risk Factors Patient Characteristics

- Age
- Diabetes
 - HbA_{1c} and SSI
 - Glucose > 200 mg/dL postoperative period (<48 hours)
- Nicotine use: delays primary wound healing
- Steroid use: controversial
- Malnutrition: no epidemiological association
- Obesity: 20% over ideal body weight
- Prolonged preoperative stay: surrogate of the severity of illness and comorbid conditions
- Preoperative nares colonization with *Staphylococcus aureus*: significant association
- Perioperative transfusion: controversial
- Coexistent infections at a remote body site
- Altered immune response

Wound Infection

- Group A β-hemolytic streptococcal gangrene – following penetrating wounds
- Clostridial myonecrosis – postoperative abdominal wound
 - Presentation: sudden onset of pain at the surgical site following abdominal surgery, crepitus → edema, tense skin, bullae = EMERGENCY
- Necrotizing fasciitis – associated with strep, Polymicrobial, associated with DM and PVD

Management: aggressive early debridement, IV antibiotics

SAPHENA VARIX.

- saccular enlargement of the termination of the long saphenous vein.
- usually accompanied by other signs of varicose veins.
- disappears when the patient lies flat.
- In both, there is an impulse on coughing
- a venous hum can be heard when a stethoscope is applied over a saphena varix.



SPERMATIC CORD CONTENTS

"PILES DON'T CONTRIBUTE TO A GOOD STYLISH LIFE"

- Pampiniform plexus
- Ductus deferens
- Cremasteric artery
- Testicular artery
- Artery of the ductus deferens
- Genital branch of the genitofemoral nerve
- Sympathetic nerve fibers
- Lymphatic vessels

Indication for RBC

- a. Symptomatic anemia, bleeding patient.
- b. Hb < 7 g/dl.
- c. Hb < 10g/dl in acute MI, congestive heart failure, angina, transient ischemic attack, syncope.
- d. Hb < 8 g/dl in thalassemia.

