



General Complications of Surgery

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● Important

● Doctor's Notes

● Extra

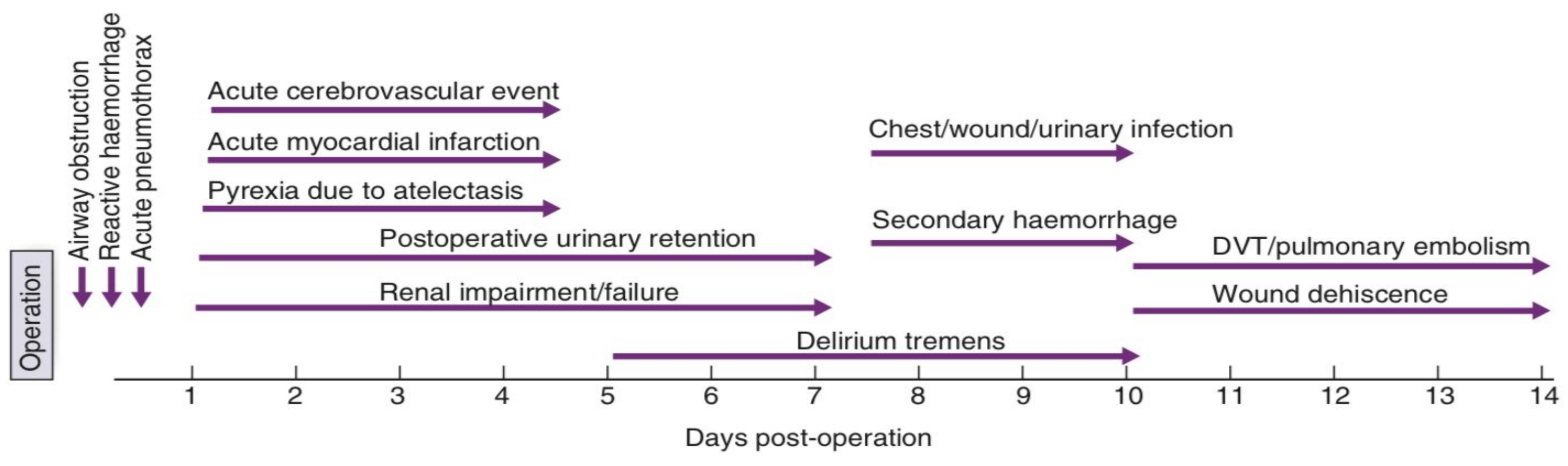
● Davidson's

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Introduction

- Following an operation, there are three phases of patient care. After a short period of immediate postoperative care in a recovery room to ensure the full return of consciousness, the patient is returned to surgical ward care, unless there are indications for transfer to a high-dependency unit or intensive therapy unit. On discharge from ward care, patients may still require rehabilitation and convalescence before they are ready to resume domestic or other activities.
- The major life-threatening complications that may arise in the recovery room are: Airway obstruction, myocardial infarction, cardiac arrest, haemorrhage, and respiratory failure.

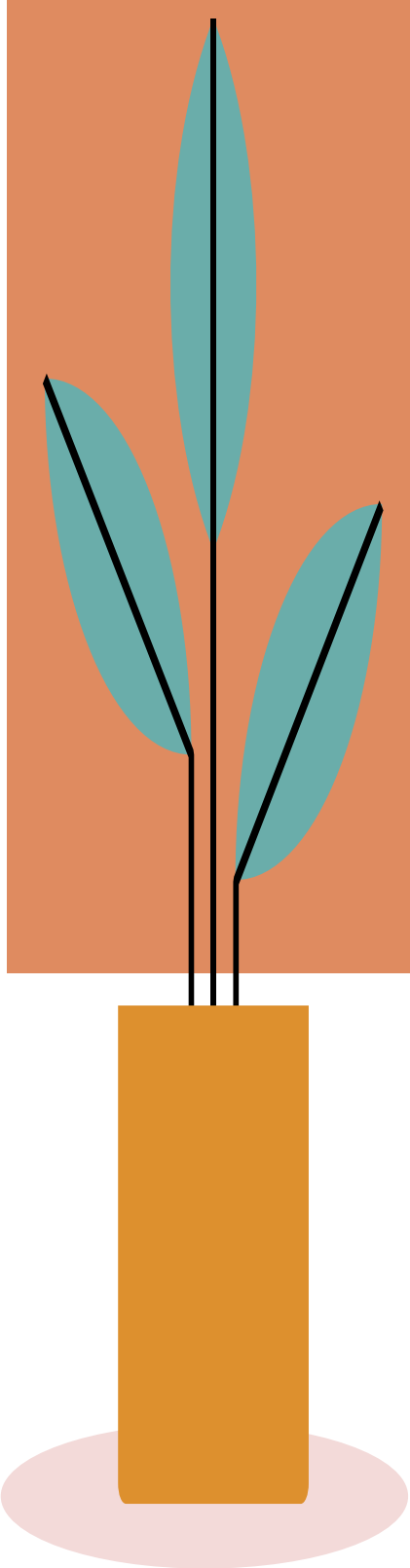


Airway Obstruction

Obstruction by the tongue (may occur with a depressed level of consciousness)	Loss of muscle tone causes the tongue to fall back against the posterior pharyngeal wall, and may be aggravated by masseter spasm during emergence from anaesthesia Bleeding into the tongue or soft tissues of the mouth or pharynx may be a complicating factor after operations involving these areas.
Laryngeal spasm	can occur at light levels of unconsciousness & aggravated by stimulation
Laryngeal oedema	may occur in small children after traumatic attempts at intubation , or when there is infection (epiglottitis)
Tracheal compression	may follow operations in the neck & compression by haemorrhage as after thyroidectomy
By foreign body	Such as dentures, crowns & loose teeth. Dentures must be removed before operation & precautions taken to guard against displacement of crowns or teeth
Bronchospasm	may follow inhalation of a foreign body or the aspiration of irritant material, such as gastric contents. It may occur as an idiosyncratic reaction to drugs and as a complication of asthma.

Hemorrhage

1. Primary	Occur during surgery
2. Reactionary or Reactive bleeding	Usually caused by a slipped ligature or dislodgement of a diathermy coagulum as the blood pressure recovers from the operation.
3. Secondary bleeding	Typically occurs 7-10 days after an operation and is due to infection eroding a blood vessel. Rigid drain tubes may also occasionally erode a large vessel and cause dramatic late postoperative bleeding. - If there's a leak during any colon surgery → collection → abscess → if not drain it will lead to erosion of the vessels



General Complications

Nausea and vomiting



- can be caused by surgery and/or anaesthesia, and an antiemetic can prove useful

hiccups



- Transient in the first few postoperative days are usually subsiding (happens w/ endoscopy bc of midazolam)
- Persistent¹ can be a serious complication, exhausting the patient and interfering with sleep, and may be due to diaphragmatic irritation² gastric distension (after gastric bypass or sleeve surgery) or metabolic causes, such as renal failure.

IV line Complications



- administration of irritant drugs or solutions can cause bruising, haematoma, phlebitis, venous thrombosis, fistula, & true or pseudo aneurysm
- Sites of cannula insertion should be checked regularly for signs of infection & the cannula replaced if necessary (in ICU)
- Arterial cannulae and needle punctures are the most common cause of arterial injury & may rarely lead to arterial occlusion and gangrene (clot obstructing the vessels)

Headache



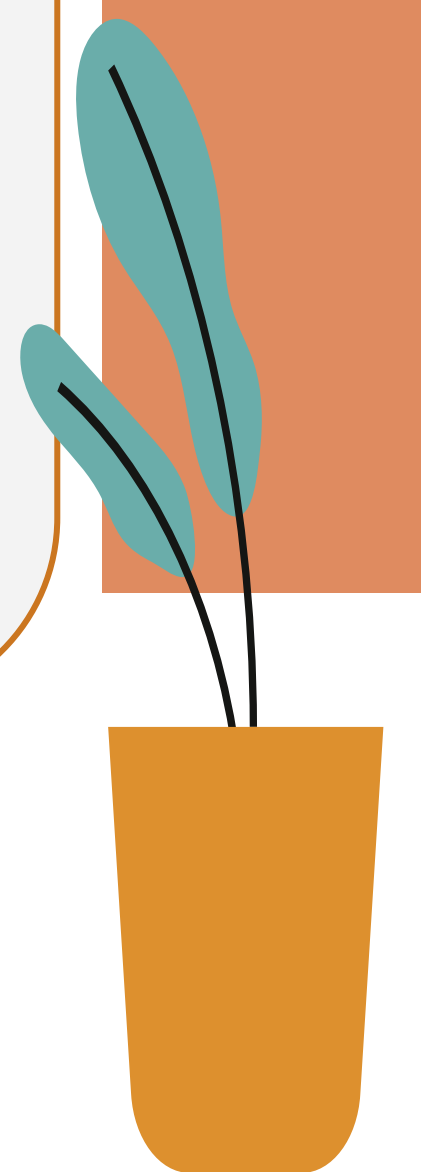
- Spinal anaesthesia may cause headache as a result of leakage of cerebrospinal fluid, and patients should remain recumbent for 12 hours after this form of anaesthesia

Pulmonary Complications

- Respiratory complications remain the largest single cause of postoperative morbidity and the second most common cause of postoperative death in patients over 60 years of age
- Pulmonary complications are more common after emergency operations
- Once a patient has fully recovered from anaesthesia, the main respiratory problems are pulmonary collapse and pulmonary infection
- Pulmonary embolism is a major complication of deep venous thrombosis.
 - a. Pelvic malignancies especially rectal, sigmoid and uterine (hypercoagulation)
 - b. Laparoscopic surgery → compression on the blood vessels → decrease venous return

¹If no precipitating cause can be found, small doses of chlorpromazine may be helpful.

²Worry about any collection under the diaphragm bc it will cause irritation which will cause contraction & eventually lead to hiccups.



Pulmonary Complications

Atelectasis & Pneumonia

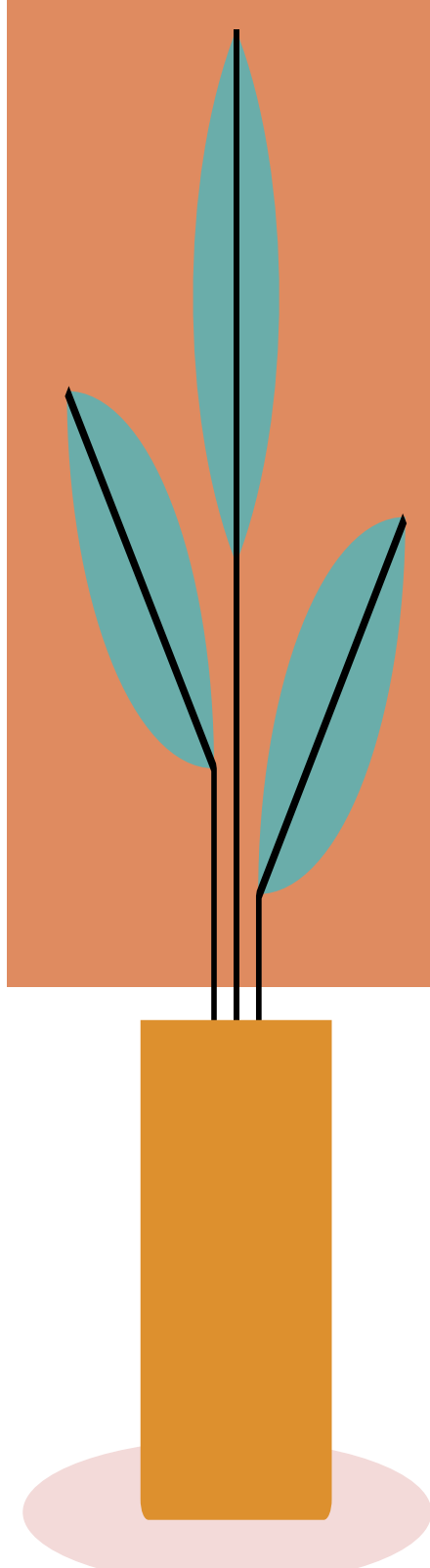
- Inability to breathe deeply and cough up bronchial secretions is the primary cause.
- Contributory factors include
 - Paralysis of cilia by anaesthetic agents
 - Impairment of diaphragmatic movement
 - Over-sedation
 - Abdominal distension
 - Wound pain (place an epidural catheter in patients undergoing major abdominal surgery may help alleviate the pain)
- ★ Most common complication during the first 24-48 hours after surgery? Atelectasis and pneumonia (Dr said this an exam Qs)
- When there is complete obstruction of a bronchus or bronchiole, air in the lung distal to the obstruction is absorbed, the alveolar spaces close (atelectasis) & the affected portion of the lung contracts & becomes solid.
- A common complication of surgery and usually occurs after 36 hrs
- It leads to increased work of breathing and impaired gas exchange
- The clinical signs include rapid respiration, tachycardia and mild pyrexia, with diminished breath sounds and dullness to percussion over the affected segment.
- Pulmonary infection commonly follows pulmonary collapse or the aspiration of gastric secretions. Pyrexia, tachypnoea and green sputum are typical. The chest signs are those of collapse with absent or diminished breath sounds, often in association with bronchial breathing and coarse crepitations from surrounding areas of partial bronchial occlusion. Chest x-ray usually demonstrates patchy opacities.
- Arterial PaO₂ is low and the chest x-ray shows areas of increased opacification.
- The most common cause of D 1-2 fever secondary to inflammatory mediators
- If untreated, secondary bacterial infection will supervene, causing lobar or bronchopneumonia. (treat mainly with antibiotics)
- **Treatment:** Pulmonary collapse is prevented by encouraging the patient to breathe deeply, cough and mobilise. Adequate analgesia and regular chest physiotherapy are of great importance & incentive spirometry

Aspiration

- In patients having gastroscopy or if the patient wasn't prepared well for surgery e.g. not fasting before the surgery
- Usually presents with acute dyspnea and fever
- CXR might be normal initially but subsequently can demonstrate a pattern of diffuse interstitial infiltrates
- Therapy is supportive, and antibiotics are typically not given empirically

Respiratory Failure

- Respiratory failure is defined as an inability to maintain normal partial pressures of oxygen and carbon dioxide (PaO₂ and PaCO₂).
- Blood gas determinations are the key to its early recognition and should be repeated frequently in patients with previous respiratory problems.
- The normal PaO₂ is >13 kPa at the age of 20 years, falling to around 11.6 kPa at 60 years; respiratory failure is when the value is less than 6.7 kPa.
- Severe hypoxaemia may result in visible central cyanosis.
- In type 1 respiratory failure there is hypoxia and in type 2 there is hypercarbia with hypoxia.



Pulmonary Complications

Acute Respiratory Distress Syndrome (ARDS)

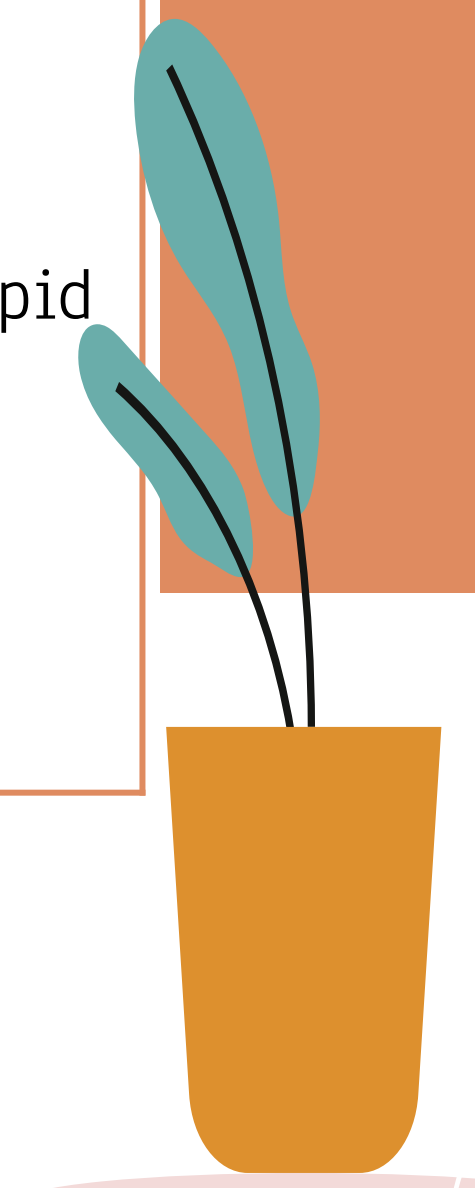
- Characterised by impaired oxygenation, diffuse lung opacification on chest x-ray and an increasing 'stiffness' of the lungs (decreased compliance). It may result from pulmonary or systemic sepsis, following massive blood transfusion, or as a consequence of aspiration of gastric contents.
- **American- European consensus conference criteria: (An exam Qs)**
 - Bilateral Chest X ray infiltrate.
 - Pulmonary artery wedge pressure ≤ 18 mmHg.
 - Ratio of PaO₂/FiO₂(partial pressure of arterial oxygen to fraction of inspired oxygen) of ≤ 200 .
 - Acute onset
 - All of the above have to be present in ARDS
- Management includes supportive measures in the form of ventilation with positive end-expiratory pressure (PEEP) and treat the underlying condition, i.e., control of infection by antibiotics, drainage of any source of pus and correction of hypovolaemia

Pleural Effusion

- **Small pleural effusion: (usually you don't have to worry about it)**
 - Small pleural effusions are not uncommon following upper abdominal surgery, but are usually of no clinical significance.
 - They may be secondary to other pulmonary pathology, such as:
 - Collapse/consolidation.
 - Pulmonary infarction or secondary tumour deposits.
 - Small effusions may be left alone to reabsorb if they do not interfere with respiration otherwise pleural aspiration is performed.
- The appearance of a pleural effusion 2-3 weeks after an abdominal operation may suggest the presence of a subphrenic abscess
 - Subphrenic abscess will lead to diaphragm infection → deposition of inflammatory modulators → pleural fluid accumulation
- If the pleural effusion becomes bigger (You need to do a chest tube)

Pneumothorax

- The most common cause of postoperative pneumothorax is the insertion of a central venous line, and **a chest X-ray is necessary after this procedure to exclude this potential complication.**
- There is also an enhanced risk of pneumothorax in patients on positive-pressure ventilation, presumably owing to rupture of pre-existing bullae.
- Trauma.
- **Treatment:**
 - The insertion of an underwater seal drain is usually followed by rapid expansion of the lung.
 - Chest tube followed by X-ray.
 - Needle decompression in the 2nd intercostal space for tension pneumothorax



Cardiac Complications

<p>Myocardial Infarction (MI)</p>	<ul style="list-style-type: none"> • The presentation of myocardial ischemia in the postoperative patient is often subtle, as incisional pain may be difficult to differentiate from chest pain. • Frequently, perioperative MI is silent or presents with dyspnea, hypotension, or atypical pain. • DDx of postoperative chest pain include: <ul style="list-style-type: none"> ○ Myocardial ischemia or infarction ○ Pulmonary embolism ○ Pneumonia • And less commonly: <ul style="list-style-type: none"> ○ Pericarditis ○ Aortic dissection ○ Pneumothorax • If ischaemia is suspected, an ECG is performed urgently and arrangements are made for cardiac monitoring. A sample of blood is withdrawn to estimate concentrations of cardiac enzymes.
<p>Heart Failure</p>	<ul style="list-style-type: none"> • Clinical manifestations are progressive dyspnoea, hypoxaemia and diffuse congestion on chest X-ray. • Excessive administration of fluid in the early postoperative period in patients with limited myocardial reserve is a common cause, which can be avoided by monitoring CVP (Central venous pressure). • Treatment consists of avoiding further fluid overload, and the administration of diuretics and cardiac inotropes.
<p>Arrhythmia</p>	<ul style="list-style-type: none"> • Sinus tachycardia is the most common and may be a physiological response to hypovolemia or hypotension (could also be due to the pain) • It is also caused by pain, fever, shivering or restlessness. • Tachycardia increases myocardial oxygen consumption and may decrease coronary artery perfusion. • Sinus bradycardia may be due to: <ul style="list-style-type: none"> ○ Vagal stimulation by neostigmine. ○ Pharyngeal irritation during suction. ○ Residual effects of anaesthetic agents. • Atrial fibrillation is the most common postoperative arrhythmia.

Hematology

<p>Deep Vein Thrombosis (DVT)</p>	<p>Pulmonary Embolism (PE)</p>
<ul style="list-style-type: none"> - Virchow's triad: stasis, increased blood coagulability & damage to the blood vessel wall - Risk factors: increasing age, obesity, prolonged operations, pelvic & hip surgery, malignant disease, previous DVT or PE, varicose veins, pregnancy & oral contraceptive pill. - Clinical: frequently asymptomatic, but may present with a painful, tender swollen calf. It may be the cause of a postoperative fever. - Diagnosis: Duplex ultrasonography - Treatment: low-molecular- weight heparin injected subcutaneously once daily Heparin therapy is stopped once the patient is fully anticoagulated with warfarin, 	<ul style="list-style-type: none"> - Massive pulmonary embolus with severe chest pain, pallor and shock demands immediate cardiopulmonary resuscitation, heparinization and urgent CT pulmonary angiography. Treatment: <ul style="list-style-type: none"> - Fibrinolytic agents, such as streptokinase or urokinase, can be infused intravenously to encourage clot lysis if it is at least 6 days after surgical intervention, or in extreme cases embolectomy - Warfarin therapy is recommended in all patients who have sustained a pulmonary embolus

Urinary Complications

Urinary Retention

- Inability to void postoperatively is common, especially after groin, pelvic or perineal operations, or operations under spinal/epidural anaesthesia. Bc it irritates the nerves in the pelvic area
- Postoperative pain, the effects of anaesthesia and drugs, and difficulties in initiating micturition while lying or sitting in bed may all contribute.
- Males tend to be more commonly affected than females.
- When its normal capacity of approximately 500 ml is exceeded, the bladder may be unable to contract and empty itself.
- Frequent dribbling or the passage of small volumes of urine may indicate overflow incontinence, and examination may reveal a distended bladder.
- The management of acute urinary retention is catheterization of the bladder, with removal of the catheter after 2-3 days.
- ★ Case: a patient underwent a hemorrhoids surgery and was sent home right after the surgery, he presented to ER later complaining of inability to urinate.

Urinary Tract Infections

- UTIs are most common after urological or gynaecological operations.
- Pre-existing contamination of the urinary tract, urinary retention and instrumentation are the principal factors contributing to postoperative urinary infection. Ex. unsterile technique
- **Cystitis: is manifested by:**
 - Frequency
 - Dysuria
 - **Mild** fever
- **Pyelonephritis: is manifested by:**
 - **High** fever
 - Flank tenderness
- Treatment involves adequate hydration, proper drainage of the bladder and appropriate antibiotics.

Renal Failure

- Acute renal failure after surgery results from protracted inadequate perfusion of the kidneys.
- The most common cause of postoperative oliguria is prerenal vascular insufficiency from hypovolaemia, water depletion or extracellular fluid depletion.
- The complication can largely be prevented by adequate fluid replacement before, during and after surgery, so that urine output is maintained at 0.5 mL/kg/h or more. The importance of monitoring hourly urine output means that bladder catheterisation is needed in all patients undergoing major surgery, and in those at risk of renal failure.



Surgical Site Infections



1. Wound Infection:

● Incidence

- the most common complication in surgery.
- The incidence varies from less than 1% in clean operations to 20–30% in dirty cases.
- Subcutaneous haematoma is a common prelude to a wound infection, and large haematomas may require evacuation.

● Signs include

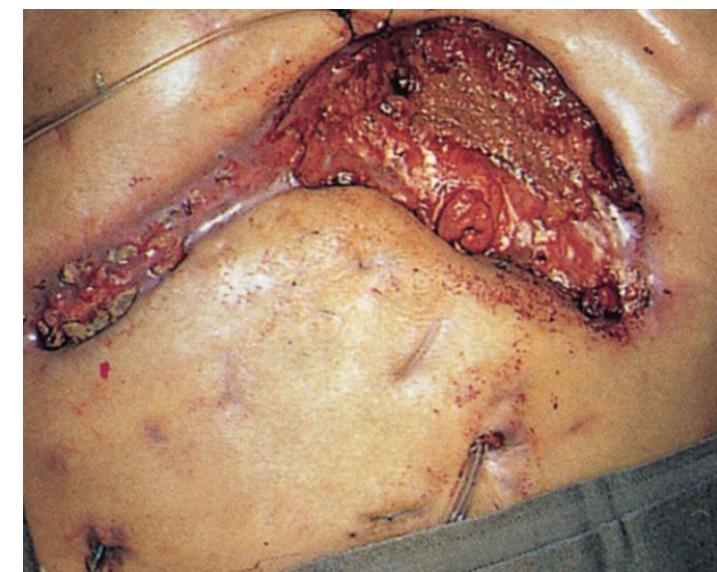
local erythema, tenderness, swelling, cellulitis, wound discharge or frank abscess formation, as well as an elevated temperature and pulse rate.

● If a wound becomes infected

It may be necessary to remove one or more sutures or staples prematurely to allow the egress of infected material. The wound is then allowed to heal by secondary intention.

Antibiotics are only required if there is evidence of associated cellulitis or septicaemia.

- ★ A patient comes to the ER after surgery because of fever and you noticed redness around the incisions, next step?
 - If the fever is systemic → IV antibiotics & open up the wound and drain any collection
 - If the fever is local → Oral antibiotics and discharge the patient and open one suture of the wound to check if there's any collection



2. Wound Dehiscence: (open wound)

● Incidence

- The incidence of abdominal wound dehiscence should be less than 1%.
- Wound dehiscence may be: **a) partial (deep layers only)**
b) complete (all layers, including skin).
- A serosanguinous discharge is characteristic of partial wound dehiscence.
- The extrusion of abdominal viscera through a complete abdominal wound dehiscence is known as evisceration.

● Risk factors

- Include obesity, smoking, respiratory disease, obstructive jaundice, nutritional deficiencies, renal failure, malignancy, diabetes and steroid therapy; however, the most important causes are poor surgical technique, persistently increased intra-abdominal pressure, and local tissue necrosis due to infection.

● Management

- The wound should be resutured under general anaesthesia.
- Incisional herniation complicates approximately 25% of cases.
- If it's complete take the patient immediately to the OR

Diagnosis of Surgical Site infection:

- Superficial SSIs can be identified by pyrexia, local erythema, pain and excessive tenderness, and sometimes discharge.
- Deeper infection may present more insidiously with pyrexia, leucocytosis, and organ dysfunction such as prolonged postoperative ileus.
- Diagnosis may require radiological imaging and sometimes exploratory laparotomy.

Prevention of SSI

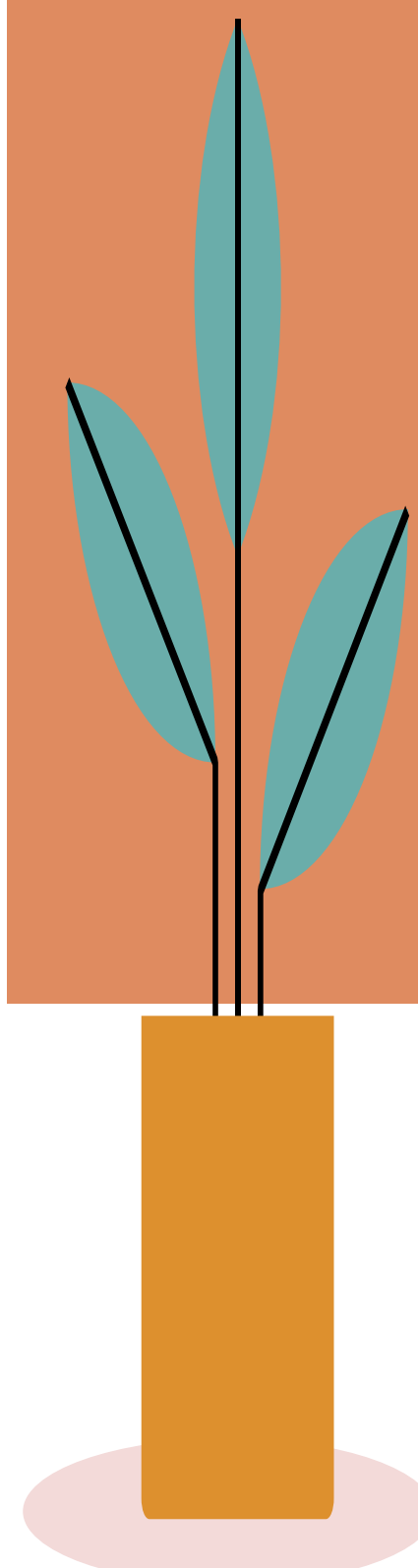
The risks of SSI can be reduced by:

- Careful surgical technique to minimize tissue damage, bleeding and haematoma
- Appropriate antibiotic prophylaxis
- Avoidance of infective surgical complication if possible e.g. anastomotic leak

CATS

Clipping of the Hair Antibiotics prophylaxis

Temperature: avoid hypothermia or hyperthermia Sugar, tight control of blood sugar



Systemic Inflammatory Response Syndrome (SIRS)

Two of:

- Hyperthermia ($>38^{\circ}\text{C}$) or hypothermia ($<36^{\circ}\text{C}$)
- Heart rate ($>90/\text{min}$, no β -blockers)
- Tachypnoea ($>20/\text{min}$), or $\text{PaCO}_2 < 32 \text{ mmHg}$
- White cell count $>12 \times 10^9/\text{l}$ or $<4 \times 10^9/\text{l}$ or $> 10 \%$ bands

Sepsis	SIRS with a documented infection
Severe Sepsis	Sepsis with evidence of one or more organ failures <ul style="list-style-type: none"> • Respiratory (ARDS), CVS (hypotension responding to IVF), renal (renal failure), GI (hepatic), blood coagulation systems & CNS
Septic Shock	Hypotension not responding to Fluid resuscitation requiring inotropic support






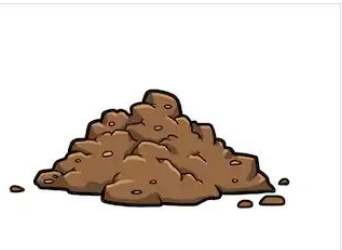

Post Operative Shocks:

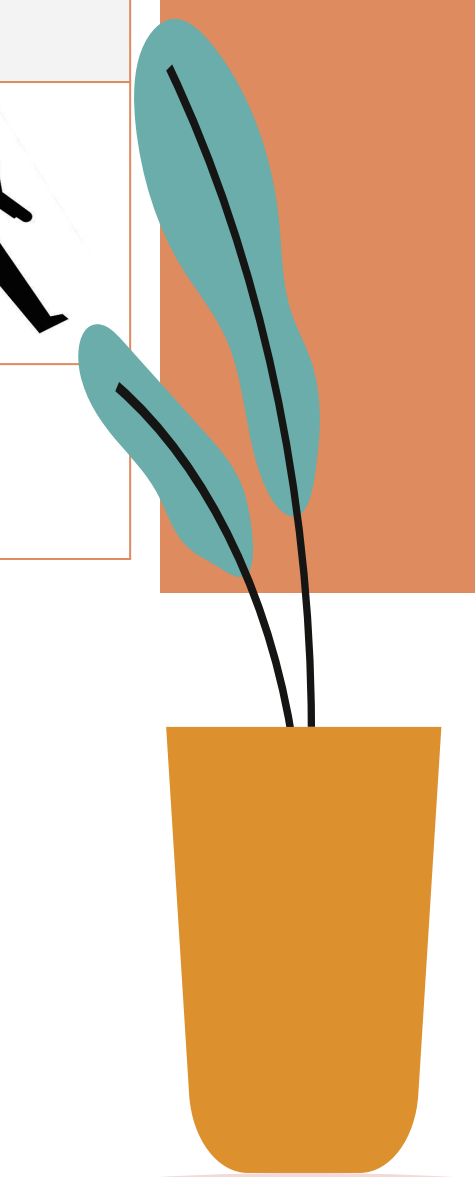
- Shock is defined as a failure to maintain adequate tissue perfusion.
- 1. Hypovolemic: caused by inadequate replacement of pre or perioperative fluid losses, or postoperative haemorrhage, it's characterised by tachycardia, hypotension, sweating, pallor and vasoconstriction.
- 2. Cardiogenic: secondary to acute MI or an arrhythmia, it's characterised by tachycardia, hypotension, sweating, pallor and vasoconstriction.
- 3. Septic: is characterised in the early stages by a hyperdynamic circulation with fever, rigors, a warm vasodilated periphery and a bounding pulse. Later features include hypotension & peripheral vasoconstriction. Without appropriate management, shock will result in oliguria and the development of multisystem organ failure, and may lead to death.

Classification Of Surgical Wounds

01	Clean	<ul style="list-style-type: none"> • No viscus opened & no prosthesis • Usually no prophylaxis indicated unless • There is prosthesis e.g mesh for hernia • Immunocompromised or redo surgery
02	Clean-contaminated	<ul style="list-style-type: none"> • Viscus opened, minimal spillage • Prophylactic is indicated
03	Contaminated	<ul style="list-style-type: none"> • Open viscus with spillage or inflammatory disease • Not any more prophylactic it is therapeutic
04	Dirty	<ul style="list-style-type: none"> • Pus, necrosis or perforation, or incision through an abscess • Not any more prophylactic it is therapeutic

Postoperative Fever 7 Ws

Wind 	Water 	Wound 	Walking 
Atelectasis/ Day 1-2	UTI/ Day 3	including wound infection & anastomotic leak / Day 5-7	DVT & PE/ Day 7
Wonder Drug 	Waste 	Waterway 	
anytime	Clostridium difficile colitis anytime	blood stream eg. central line infection anytime	



Surgical Recall:

What is Atelectasis?

Collapse of the alveoli

What is the etiology?

Inadequate alveolar expansion (e.g., poor ventilation of lungs during surgery, inability to fully inspire secondary to pain), high levels of inspired oxygen

What are the signs?

Fever, decreased breath sounds with rales, tachypnea, tachycardia, and increased density on CXR

What are the risk factors?

Chronic obstructive pulmonary disease (COPD), smoking, abdominal or thoracic surgery, oversedation, poor pain control (patient cannot breathe deeply secondary to pain on inspiration)

What prophylactic measures can be taken?

Preoperative smoking cessation, incentive spirometry, good pain control

What is the treatment?

Postoperative incentive spirometry, deep breathing, coughing, early ambulation, NT suctioning, and chest PT

What is Respiratory Failure?

Respiratory impairment with increased respiratory rate, shortness of breath, dyspnea

What is the treatment?

Supplemental O₂, chest PT; suctioning, intubation, and ventilation if necessary

What are the indications for intubation and ventilation?

Cannot protect airway (unconscious), excessive work of breathing, progressive hypoxemia (PaO₂ < 55 despite supplemental O₂), progressive acidosis (pH < 7.3 and PCO₂ > 50), RR > 35

Is DVT more common in the right or left iliac vein?

Left is more common (4:1) because the aortic bifurcation crosses and possibly compresses the left iliac vein

What are the signs/symptoms of DVT?

Lower extremity pain, swelling, tenderness, Homan's sign, PE

Up to 50% can be asymptomatic!

What is Homan's sign?

Calf pain with dorsiflexion of the foot seen classically with DVT, but actually found in fewer than one third of patients with DVT

What do you do if you have a patient with high NGT output?

Check high abdominal x-ray and, if the NGT is in duodenum, pull back the NGT into the stomach

What causes SBO?

Adhesions (most of which resolve spontaneously), incarcerated hernia (internal or fascial/dehiscence)

What are the signs of resolving ileus/SBO?

Flatus PR, stool PR

What is the order of recovery of bowel function after abdominal surgery?

First—small intestine

Second—stomach

Third—colon

What is Wound Hematoma?

Collection of blood (blood clot) in operative wound

What is the treatment?

Acute: Remove with hemostasis

Subacute: Observe (heat helps resorption)

What is Wound Seroma?

Postoperative collection of lymph and serum in the operative wound

What is the treatment?

Needle aspiration, repeat if necessary (prevent with closed drain)

Pseudomembranous Colitis? Diarrhea, fever, hypotension/tachycardia

What classic antibiotic causes C.difficile?

Clindamycin (but almost all antibiotics can cause it)

How is it diagnosed?

C. difficile toxin in stool, fecal WBC

Summary

General Complications	<ul style="list-style-type: none">• Transient hiccups: in the first few postoperative days are usually subsiding.• Persistent hiccups: can be a serious complication due to (diaphragmatic irritation, gastric distension or metabolic causes, such as renal failure).• Spinal anaesthesia: may cause headache (because of leakage of cerebrospinal fluid).
Airway Obstruction	<ul style="list-style-type: none">• Tracheal compression may follow operations in the neck, and compression by haemorrhage as after thyroidectomy.
Pulmonary complications	<ul style="list-style-type: none">• Respiratory complications remain the largest single cause of postoperative morbidity• The second most common cause of postoperative death in patients over 60 years of age.
Atelectasis & pneumonia	<ul style="list-style-type: none">• A common complication of surgery and usually occurs after 36 hrs.• The clinical signs:: 1- rapid respiration 2- tachycardia 3- mild pyrexia, 4- diminished breath sounds 5- dullness to percussion over the affected segment.<ul style="list-style-type: none">• The most common cause of Day 1-2 fever secondary to inflammatory mediators.
Aspiration	<ul style="list-style-type: none">• Presents with acute dyspnea and fever.<ul style="list-style-type: none">• CXR initially might be normal.• Therapy: (supportive + antibiotics).
Respiratory failure	<ul style="list-style-type: none">• Type 1: there is hypoxia.• Type 2: there is hypercarbia with hypoxia
Acute respiratory distress syndrome (ARDS)	<ul style="list-style-type: none">• American- European consensus conference criteria:<ul style="list-style-type: none">• Bilateral Chest X ray infiltrate• Pulmonary artery wedge pressure ≤ 18 mmHg.• Ratio of $\text{PaO}_2/\text{FiO}_2$ (partial pressure of arterial oxygen to fraction of inspired oxygen) of ≤ 200.<ul style="list-style-type: none">• Acute onset.
Pleural Effusion	<ul style="list-style-type: none">• The appearance of a pleural effusion 2-3 weeks after an abdominal operation may suggest the presence of a subphrenic abscess.
Pneumothorax	<ul style="list-style-type: none">• Most common cause of postoperative pneumothorax is the insertion of a central venous line.<ul style="list-style-type: none">• A chest X-ray is necessary after this procedure to exclude this potential complication.

Question:

1) A 65-year-old man undergoes a low anterior resection for rectal cancer. On the fifth day in hospital, his physical examination shows a temperature of 39°C (102°F), blood pressure of 150/90 mm Hg, pulse of 110 beats per minute and regular, and respiratory rate of 28 breaths per minute. A computed tomography (CT) scan of the abdomen reveals an abscess in the pelvis. Which of the following most accurately describes his present condition ?

- A. Systemic inflammatory response syndrome (SIRS)
- B. Sepsis
- C. Septic shock
- D. Septicaemia

2) On postoperative day 5, an otherwise healthy 55-year-old man recovering from a partial hepatectomy is noted to have a fever of 38.6°C (101.5°F). Which of the following is the most common nosocomial infection postoperatively ?

- A. Wound infection
- B. Pneumonia
- C. Urinary tract infection
- D. Intra-abdominal abscess

3) A 12-year-old boy with a femur fracture after a motor vehicle collision undergoes operative repair. After induction of anesthesia, he develops a fever of 40°C (104°F), shaking rigors, and blood-tinged urine. Which of the following is the best treatment option ?

- A. Alkalinization of the urine, administration of mannitol
- B. Administration of dantrolene sodium and termination of the procedure
- C. Administration of IV steroids and an antihistamine agent with termination of the procedure
- D. Put cooling blanket and continue the procedure

4) A 19-year old patient presented with right lower quadrant pain with positive rebound tenderness. The diagnosis of appendicitis was confirmed and the appendectomy was done. One day following the surgery he developed a fever. What is the most likely diagnosis?

- A. Atelectasis
- B. UTI
- C. Thrombophlebitis
- D. Wound infection