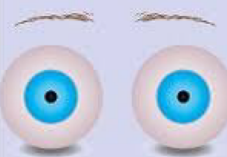




# GCS Score

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

Note:

A new parameter; "pupil reactivity score" has been added to GCS, & now it is referred to as GCS-P

[Pupil unreactive to light]

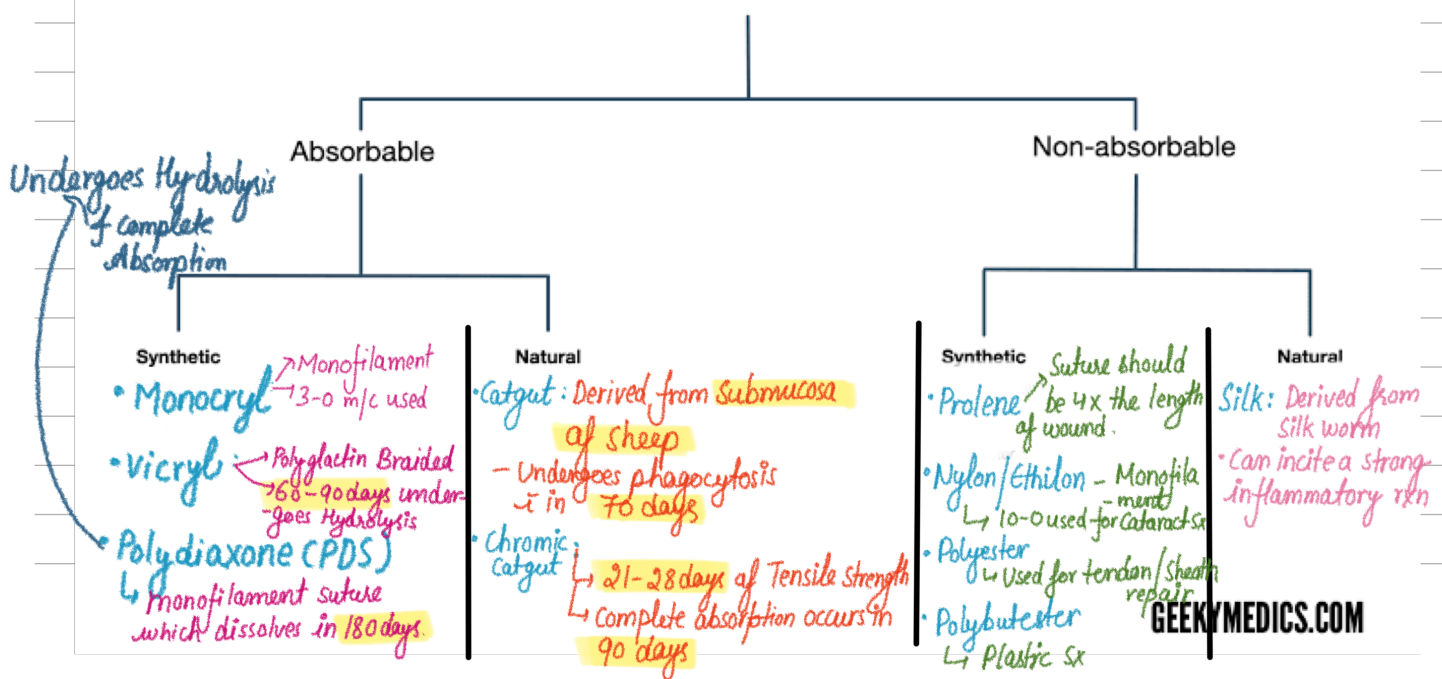
Pupil Unreactive to light	Score
Both pupils	2
One pupil	1
Neither	0

Note: The minimum frequency of observations for patients with GCS equal to 15 should be as follows, starting after the initial assessment in the emergency department:

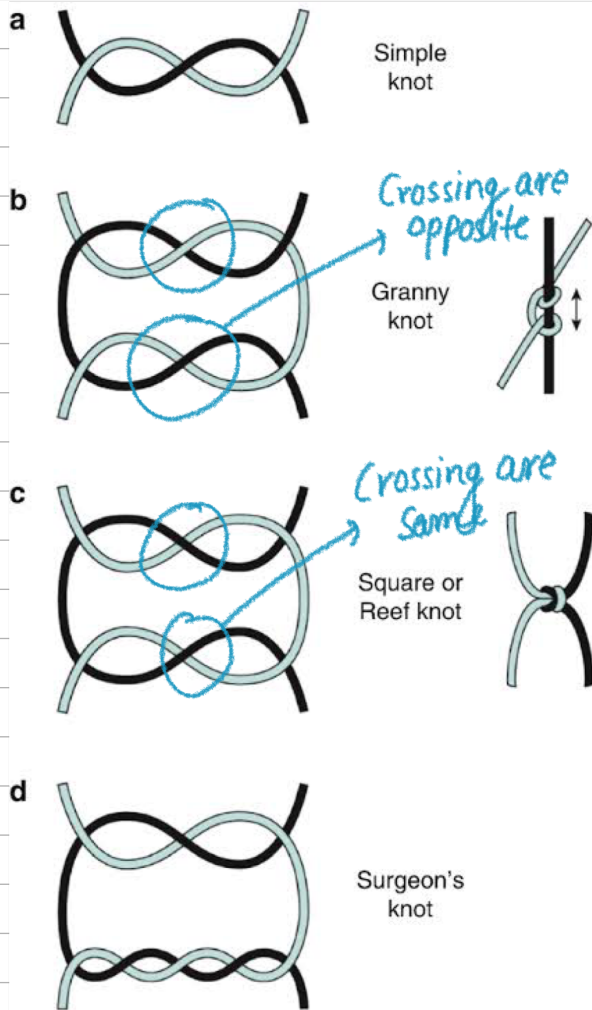
↓

Half-hourly for 2 hours  
 Then 1-hourly for 4 hours  
 Then 2-hourly thereafter

## SUTURE CLASSIFICATION



# Suturing Techniques:



**Granny's knot:** Insecure knot or slip knot

**Surgeon's knot:** Secure knot

### Suture Patterns

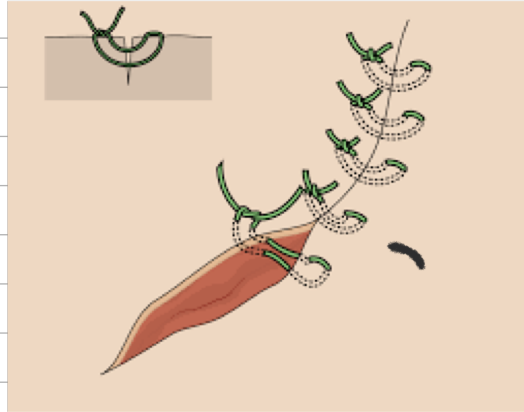
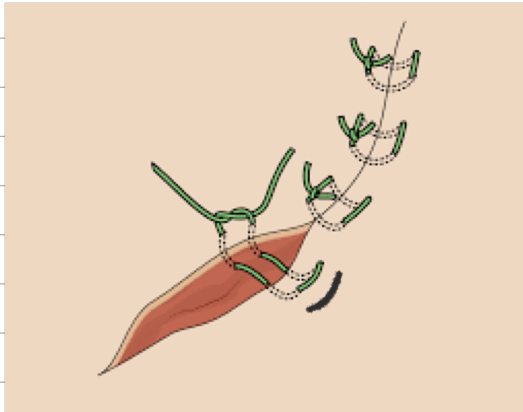
- Near-far, Far-near
  - Tension pattern
  - Overlapping suture pattern provides extra strength but requires extra suture material

↳ Used for obliteration of large cavities

**Skin sutures:** Everted edges are needed for skin sutures to heal.  
 Remember: if the depth of the wound is  $X$ , then  $2x$  should be the distance b/w 2 sutures (bite separation) & bite on each side should be  $X$ .

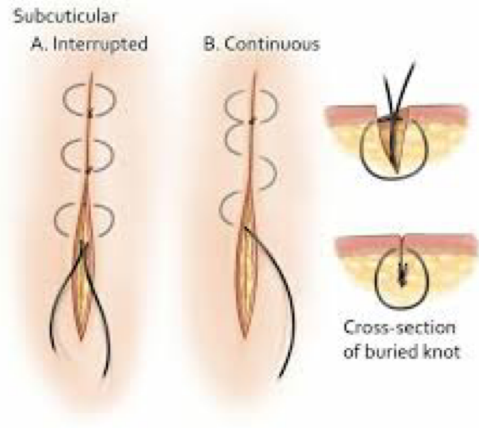
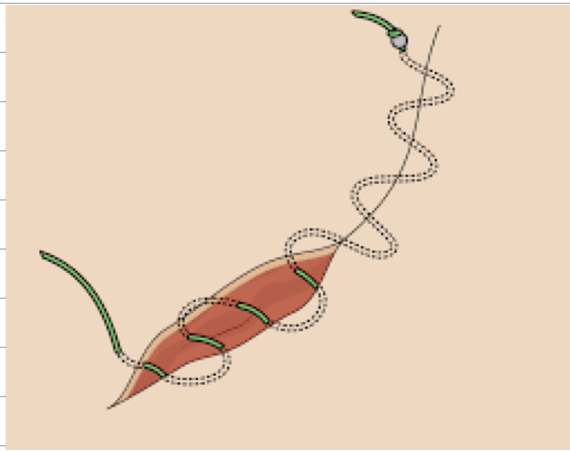
• Simple sutures

• Mattress sutures:   
 ↙ Horizontal Sutures  
 ↘ Vertical Sutures



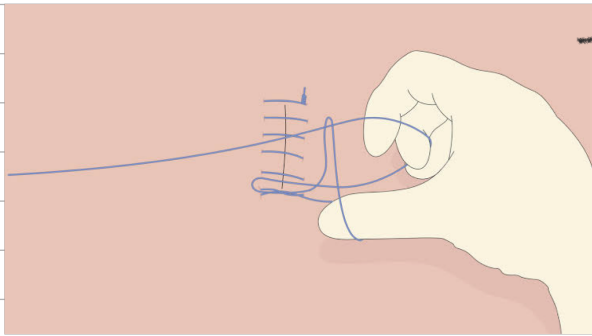
Horizontal: • Everted edges  
 Suture • Hemostatic  
 ↳ Strong → Least cut through rate

Vertical: Everted skin edges  
 Sutures



↳ Subcuticular: **Cosmetically Better**  
suture

↳ 3-0 monocryl is best for Subcuticular Sutures.



→ Aberdeen knot: is an Alternative used when ending a continuous suture line, most often used for subcutaneous & intradermal closure.

**Bowel anastomosis:** Inverted edges are needed for bowel anastomosis

- Single layer extra mucosal repair: mucosa is not involved
- Two layer repair

- First layer / Albert layer: First bite involves all the layers of the bowel using vicryl Sutures
- Second layer / Lambert layer: Using silk suture and an inversion is created.

• Stapled bowel anastomosis

1. Linear stapler: used for sleeve gastrectomy.
2. Circular stapler: used for low anterior Resection.
  - stapler hemorrhoidopexy
  - esophagojejunostomy

⇒ m/c complication → bleeding from staple line.

- Cheatles split: Longitudinal split along anti-mesentric border.
- Connel loop: At the edge of the anastomosis to ensure inversion of mucosa.

REACH®  
Circular Stapler



REACH®  
Linear Cutter



## Bowel Obstruction

### Dynamic

- Contracts Vigorously to overcome the blockage
- Hyperperistalsis



### Adynamic

↳ wall doesn't move

∴ Silent abdomen from the beginning



Chronic ∴ leads to: **Silent Abdomen**

**Omnibus Sign**

- Strangulation
- Perforation

### Causes of Dynamic obstruction

1. Intussusception
2. Volvulus
3. Hernia
4. Stricture
5. Malignancy
6. Adhesions (m/c)

### Causes of Adynamic obstruction

1. Mesentric ischemia
2. Hirschprung / cong. megacolon
3. Paralytic ileus
4. Oligiv Sx  
(colonic pseudo obstruction)



## Keloid - Abnormal Healing following Trauma

- Excessive proliferation of fibroblasts and collagen
- Scar tissue expands above & beyond the margins of wounds.

Mx: Steroid injections (first line)

- Other:
- Radiotherapy
  - Cryotherapy
  - Laser

## Hypertrophic scar

Doesn't expand beyond the margins of wound.

## Sebaceous cyst

- Soft compressible Nodule.
- Commonly occurs at posterior part of pinna
- Punctum is seen.
- Mx - excision

## Compartment Syndrome

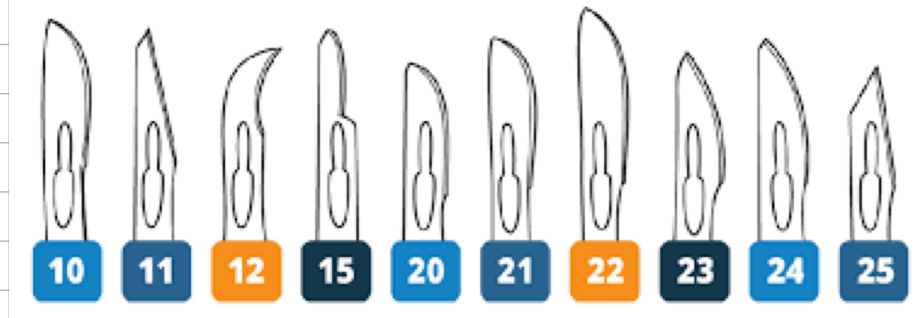
Normally pressure inside the compartment is  $< 10 \text{ mmHg}$   
 $> 30 \text{ mmHg} \rightarrow$  compartment syndrome.

- Fracture swelling leads to decreased venous return / venous congestion.
- Ischemia of muscle  $\rightarrow$  inflammation  $\rightarrow$  swelling of m/s inside the compartment  $\rightarrow$  compression of capillaries providing blood to the m/s

Leading to vicious cycle of further ischemia & compression of vessels

Rx: upon fasciotomy, the fascia is cut open, muscle bulge out, intra compartmental pressure falls down & vascularity is resumed.

## Sizes of Blades:

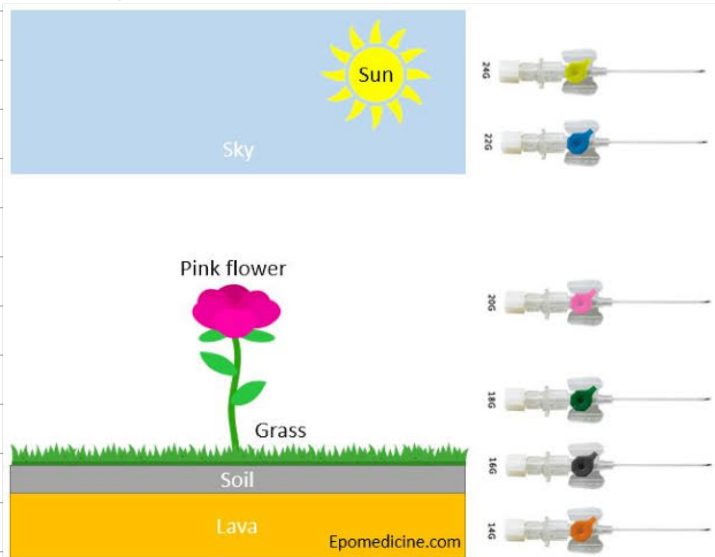


- No. 11 pointed/stab blade: Used for incision and drainage & also for arteriotomy.
- No. 12 Curved blade: For suture Removal
- No. 10, 15, 20, 21, 22, 23: These blades have a belly which is the curved portion of the blade.
  - The belly of the blade is the sharpest portion of a blade.

## Marking an incision

- Blade perpendicular to skin, otherwise there will be undermined & bevelled edges
- Far to near
- Opposite side to same side.

## Sizes of Cannula



Size	Color	Flow
14G	Orange	270 ml/min
16G	Grey	210 ml/min
17G	White	130 ml/min
18G	Green	80 ml/min
20G	Pink	50 ml/min
22G	Blue	30 ml/min
24G	Yellow	20 ml/min
26G	Violet	10 ml/min

# Blast injury

• Primary blast injury: MOA → wave / air compression.

→ 1st structure to be damaged in primary blast injury → Tympanic membrane

→ 1st organ to be damaged in primary blast injury → Lungs

• Secondary blast injury: MOA → Flying objects / missiles will hit the body

Causes Marshall's Triad: 1. Patterned abrasion.

2. Patterned contusion.

3. Patterned laceration.

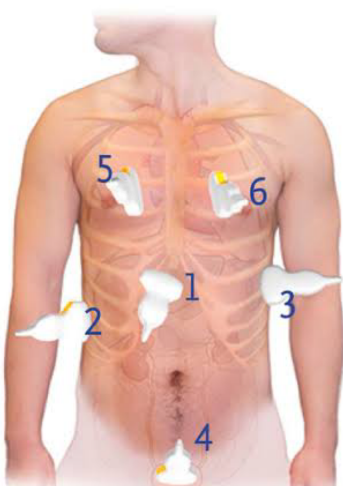
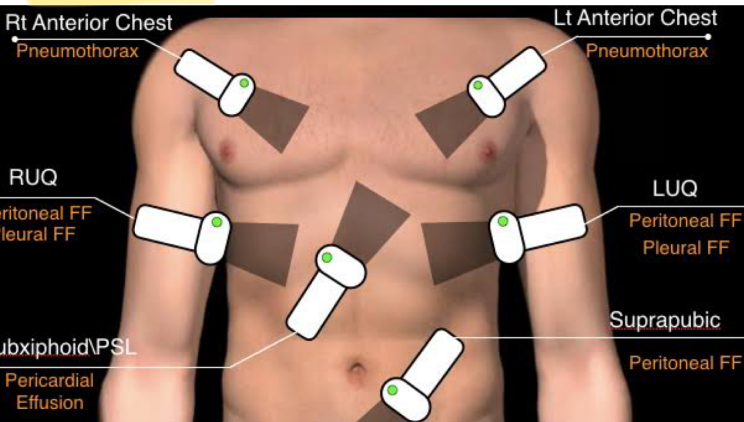
Fractures may also seen

• Tertiary blast injury:

MOA → The body gets thrown away and hits the ground leading to Skeletal / Bony fractures.

• Quaternary blast injury: MOA → other injuries due to burning or a building collapsing.

## e-fast site



1. Pericardium
2. Right upper quadrant
3. Left upper quadrant
4. Suprapubic area
5. Right anterior thoracic
6. Left anterior thoracic

## m/c organs injured:

Blunt trauma → Spleen. Encapsulated in tight capsule → chance of rupture ↑

Penetrating injury → Liver

In seat belt injury → Mesentery

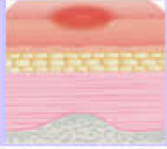

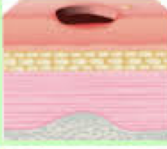

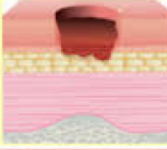



In blast injury → Lung

In underwater blast → GI, especially small intestine

## Bedsore Stages

### STAGES OF PRESSURE ULCER

WWW.OPENMED.CO.IN

<b>STAGE 1</b>	Non Blanching Erythema, With Intact Epidermis		
<b>STAGE 2</b>	Partial Thickness Ulcer involving Epidermis & Dermis		
<b>STAGE 3</b>	Full Thickness Ulcer extending through Dermis in to Subcutaneous Tissue.		
<b>STAGE 4</b>	Deep Tissue Destruction extending through Fascia & may involve muscle, bone & tendons.		

Modified Shock index  $\rightarrow$   $HR/MAP$   
(Most sensitive indicator of shock)

## Asepsis Score

Criterion	Description	Points
<b>A</b> Additional treatment	Antibiotics	10
	Drainage of pus under local anaesthetics	5
	Debridement of wound (General anaesthetics)	10
<b>S</b> Serous discharge	Daily	0-5
<b>E</b> Erythema	Daily	0-5
<b>P</b> Purulent exudates	Daily	0-10
<b>S</b> Separation of deep tissues	Daily	0-10
<b>I</b> Isolation of bacteria		10
<b>S</b> Stay in hospital prolonged over 14 days		5

## Revised Trauma Score

Mnemonic → **RTS**  
 RR → Respiratory rate  
 Trauma (GCS)  
 SBP → Systolic blood pressure

### Revised trauma score

Glasgow coma scale	Systolic blood pressure (mmHg)	Respiratory rate	Coded value
13-15	>89	10-29	4
9-12	76-89	>29	3
6-8	50-75	6-9	2
4-5	1-49	1-5	1
3	0	0	0

Examples of Injuries Assigned Various Abbreviated Injury Scale (Military Version) Scores

Score	Severity	Example
1	Minor	Isolated rib fracture
2	Moderate	Testicular avulsion
3	Serious	Simple hemothorax
4	Severe	Below-knee traumatic amputation
5	Critical	Femoral artery injury with >20% blood loss

## Southampton Wound Assessment Scale

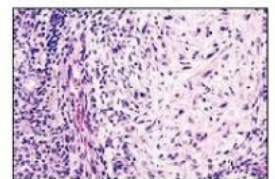
### Grade Definition

0	Normal healing
I	Normal healing with mild bruising or haematoma
II	Erythema plus other signs of inflammation
III	Clear or haemoserous discharge
IV	Pus
V	Deep or severe wound infection with or without tissue breakdown; haematoma requiring aspiration

## Pleomorphic Adenoma

- It is most common tumor of salivary glands.
- It is a benign tumor
- It is slow growing.
- F > M.
- R/F → Radiation exposure.
- IOC: FNAC
- Ix to assess extent of lesion → MRI > CT
- Mutation: PLAG1
- Mx: Superficial parotidectomy
  - if malignant → Sx + radiotherapy

## Pleomorphic Adenoma



# ATLS: Advanced Trauma Life Support.

## ATLS

1° Survey

ABCD

+  
Life threatening injuries

2° Survey

Detailed Survey  
(in which all other injuries)

3° Survey:

**NEXUS (mnemonic)**  
 Neuro deficit  
 EOH (alcohol) / intoxication  
 Extreme distracting injuries  
 Unable to provide History  
 (altered level of consciousness)  
 Spinal tenderness (midline)

- A- airway management
- B- Breathing
- C- Circulation
- D- Disability management.

### Life threatening injuries during primary Survey

- Airway : • Airway Obstruction  
• Tracheobronchial Tree injury.
- Breathing : • Tension pneumothorax  
• Open pneumothorax
- Circulation : • Massive hemothorax  
• Cardiac tamponade  
• Traumatic circulatory arrest.

Priority Group			Description
Number	Name	Color	
P1	Emergency/Immediate	Red	Patients who have life-threatening injuries that are treatable with a minimum amount of time, personnel, and supplies. These patients also have a good chance of recovery.
P2	Urgent	Yellow	Indicates that treatment may be delayed for a limited period of time without significant mortality or in the ICU setting patients for whom life support may or may not change their outcome given the severity of their illness.
P3	Delayed	Green	Patients with minor injuries whose treatment may be delayed until the patients in the other categories have been dealt with or patients who do not require ICU admission for the provision of life support.
P4	Expectant	Blue	Patients who have injuries requiring extensive treatment that exceeds the medical resources available in the situation or for whom life support is considered futile.
--	Dead	Black	Patients who are in cardiac arrest and for which resuscitation efforts are not going to be provided.

## Sebaceous Cyst :

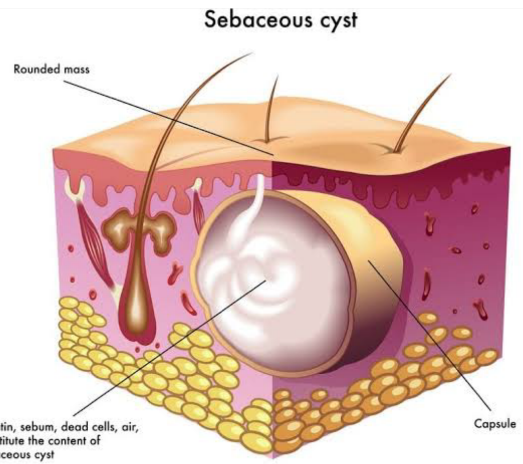
is a blocked hair follicle duct which can give rise to a cyst.

Examination : • Fluctuant

- Punctum present (Classical feature, may also be absent).
- Painless unless inflamed.
- Overlying skin cannot be pinched.

Complications :

- ↳ inflammation
- Multiple sebaceous cysts (Scrotum and scalp are common sites)



A m/c site involved in Extramammary Paget disease : Vulva.

Tension pneumothorax : is a clinical finding

- Most sensitive Ix → CT

- Most sensitive X-ray → CXR: Expiratory view

↳ To make the normal lung white

Mx : Unstable  
Tension Pneumothorax  
(Obstructive shock)

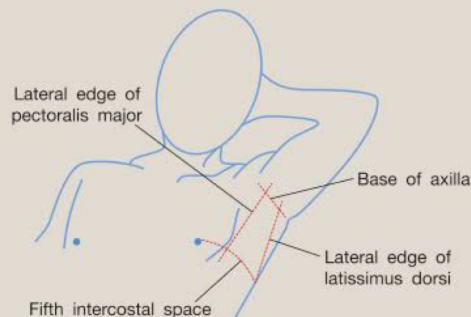
Needle thoracostomy

- 5<sup>th</sup> ICS in adult
- 2<sup>nd</sup> " " child

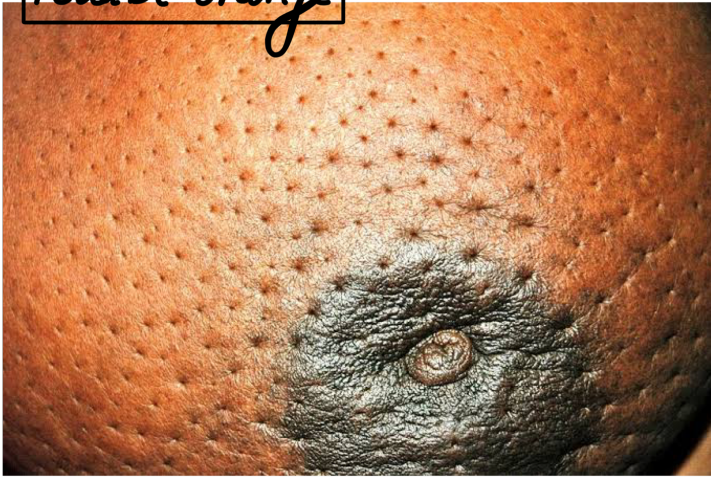
↓  
ICD

14 G 3-25 inch

The triangle of safety



Peau d'orange



→ Blockade of Subdermal Lymphatics  
↓  
due to inflammatory breast cancer

## Hashimoto Thyroiditis : aka Lymphocytic Thyroiditis

- it is the most common thyroiditis and most common cause of hypothyroidism.
- F > M
- HLA DR 3/B8
- a/w Down's Syndrome and Turner Syndrome.
- Strong hereditary component : There is a 9 times risk of Hashimoto's if it is present in a 1st degree relative.
- Anti-Bodies are formed against:
  - The thyroid receptors
  - TPO enzyme
  - Thyroglobulin

C/F : Diffuse goiter.  
• Features of Hypothyroidism.

Diagnosis : • Autoantibody levels  
• USG : Pseudo nodular appearance.  
• Histopathology : Lymphocytic infiltration and Hurtle cells.

Mx : Thyroxine replacement  
- if goiter present : Surgery - subtotal / near-total / total thyroidectomy depending on extension.

### HASHIMOTO'S THYROIDITIS

Hypothyroidism  
Autoimmune  
Synthroid treatment  
Hürthle cell change  
Initial Hashitoxicosis  
Marginal zone NHL  
goiter  
TPO (Anti-microsomal) & anti-thyroglobulin antibodies  
lymphocytic infiltrate

Barone Rocks.com  
The Official Site of John Barone, M.D.

# MEN Syndrome

Multiple Endocrine Neoplasia Syndrome

## MEN-1 / Wermer Syndrome :

Chromosome 11q13 / MEN1 gene

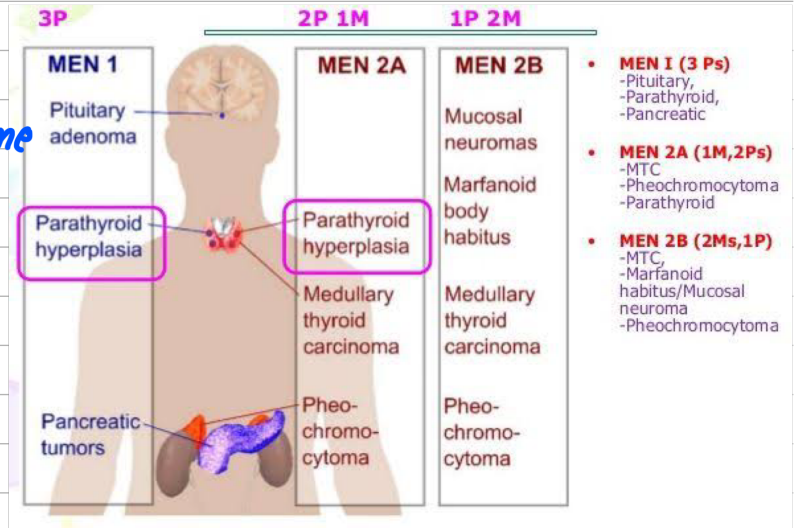
Also known as **Wermer's syndrome**

Characteristic tumors seen in:

- Parathyroid adenoma – 90 % - Most common overall
- Entero pancreatic tumors - Most common functioning tumor is gastrinoma (most common site is duodenum)
- Pituitary adenoma – Most common is prolactinoma
- **Mnemonic** – Par Pan Pit – in decreasing order of frequency

Associated tumors are:

- Angiofibroma
- Collagenomas
- Adrenal cortical tumors
- Lipoma
- Neuroendocrine tumors - gastric, thymic, lungs
- Meningioma
- Pheochromocytoma
- Carcinoid tumors, usually of the foregut



## MEN 2A

- Known as **Siipple's syndrome**
- Chromosome **10 / RET gene**
- Associated conditions are:
  - Medullary Thyroid Carcinoma (90%)
  - Pheochromocytoma (>50%)
  - Parathyroid adenoma (10–25%)

## MEN 2B

- Known commonly as **MEN 3**
- Chromosome **10/ RET gene**
- Associated conditions are:
  - Medullary Thyroid Carcinoma (>90%)
  - Pheochromocytoma (>50%)
  - Other associated abnormalities include: (40–50%)
    - Mucosal neuromas
    - Marfanoid habitus
    - Medullated corneal nerve fibers
    - Megacolon

## ADDISONIAN CRISIS

- Severe dehydration
- Pale, cold, clammy skin
- Sweating
- Rapid, shallow breathing
- Dizziness
- Severe vomiting and diarrhea
- Severe muscle weakness
- Headache
- Severe drowsiness
- Loss of consciousness



## Acute adrenal crisis / Addisonian Crisis

Cause: Any form of stress / rapid withdrawal of steroids.

Presentation: Acute abdomen (no guarding, rigidity, tenderness)

- Hypercalcemia
- Vomiting
- Hypotension and circulatory failure

management: Hydration: 3-4L over next 12-18 hours

- Dextrose Normal Saline with Hydrocortisone: 100mg I/V Hydrocortisone given stat.
- Then 200mg I/V Hydrocortisone is divided in 4 doses per 24 hrs (50mg each)

- Hydrocortisone dose is tapered each day (Day 1: 300mg, Day 2: 200mg, day 3: 100mg, day 4: 50mg)

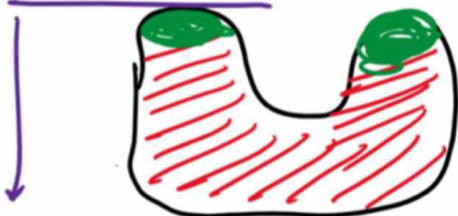
- After 4 days, replace with Oral hydrocortisone: Start with 20mg + 10mg

HEMI THYROIDECTOMY → LOBECTOMY + ISTHMOSECTOMY



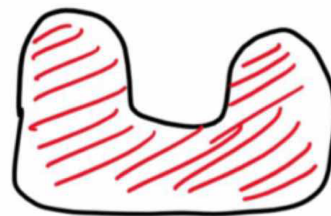
#SMASH SURGERY

SUB TOTAL

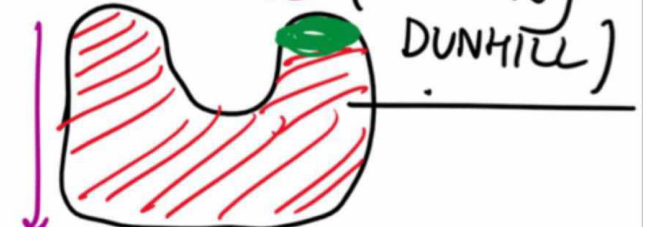


2x SUBTOTAL LOBECTOMY + ISTHMOSECTOMY

TOTAL



NEAR TOTAL. (HARTLEY DUNHILL)



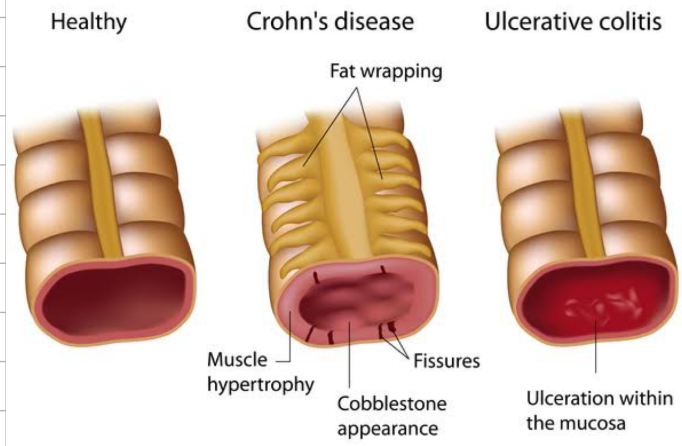
LOBECTOMY + SUBTOTAL LOBECTOMY + ISTHMOSECTOMY

# Chron's disease

- Overall, CD is m/c than UC.
- IBD is overall m/c in males > females

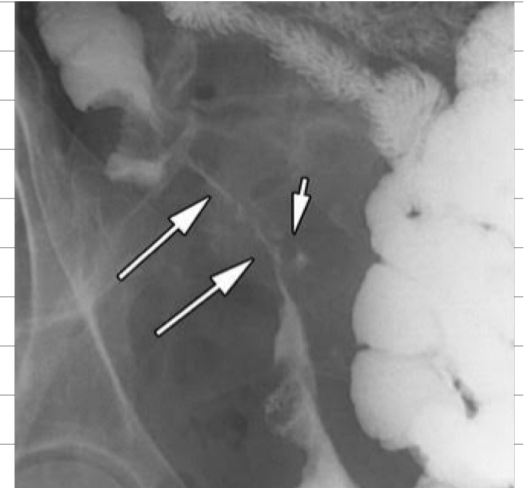
- m/c site: Terminal ileum
- Sparing: Rectum
- Earliest presentation: Aphthous Ulcers  
They progress to cause deep serpiginous ulcers
- Serpiginous Ulcers in esophagus: CMV

## Inflammatory Bowel Disease



Transmural involvement and Submucosal fibrosis leads to Irregular appearance of mucosa called as cobble stone pattern. Occasional sparing is called skip lesions.

- ASCA – Anti Saccharomyces Cerevisiae Antibody
- Imaging – Capsule endoscopy / Upper GI endoscopy/ Colonoscopy + Biopsy (Granulomas are seen)
- CT Enterography
- Ba meal follow through (Enteroclysis)
  - "String Sign of Kantor" due to stricture formation



### Investigations :

- ASCA – Anti Saccharomyces Cerevisiae Antibody
- Imaging – Capsule endoscopy / Upper GI endoscopy/ Colonoscopy + Biopsy (Granulomas are seen)
- CT Enterography
- Ba meal follow through (Enteroclysis)
  - "String Sign of Kantor" due to stricture formation

### Rx

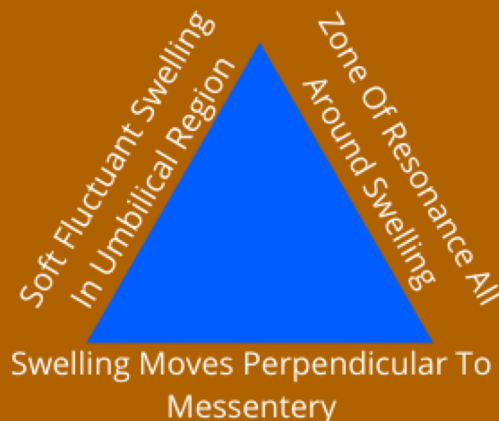
00:23:14

- DOC for CD: Steroids, Mesalamine
- Bile acid diarrhea: Cholestyramine/ Colestipol
- Sulphalazine Bacteria → 5 ASA (Amino Salicylic Acid)
  - (Local anti-inflammatory action to heal aphthous ulcers)
  - Works in large bowel but not in the small bowel due to lack of bacteria
- Azathioprine

medicomaestro

## Tillaux's Triad

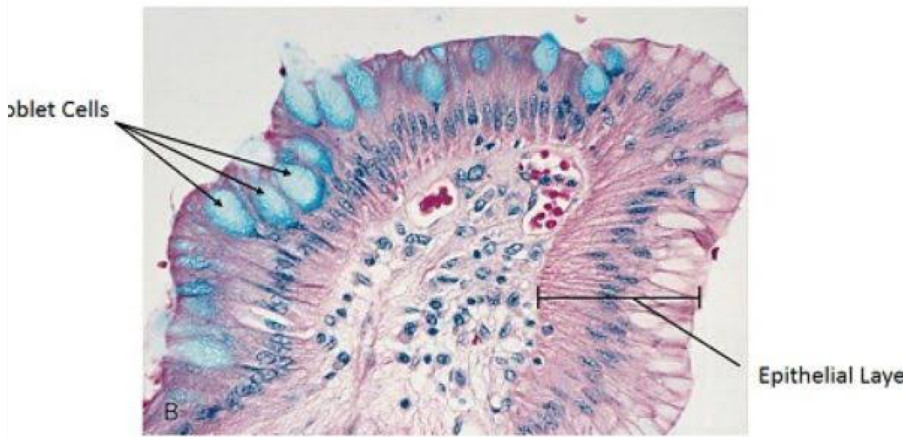
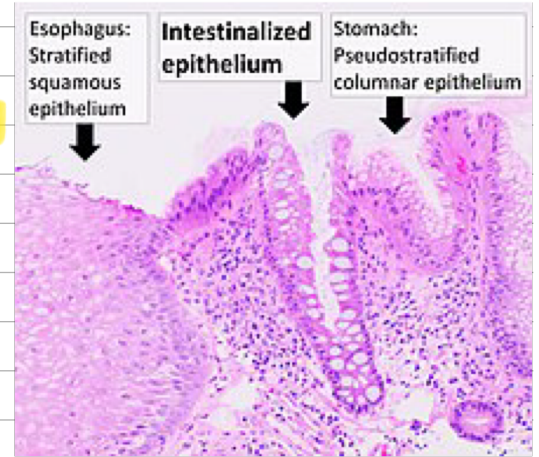
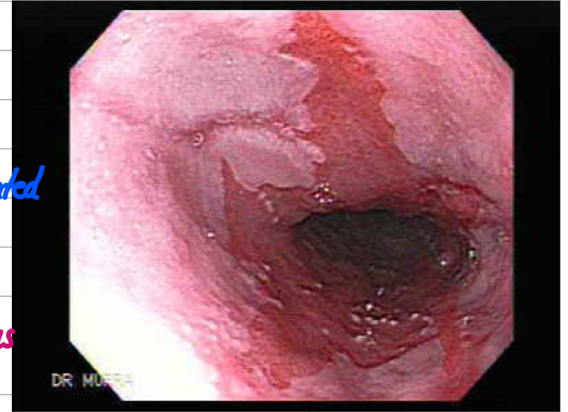
Seen In Mesenteric Cyst



# Barrett's Esophagus

- AKA Columnar Lined Oesophagus (CLO)
- Metaplasia (reversible change in which one differentiated cell type converts into another)
- Esophagus is normally lined by stratified squamous epithelium → columnar epithelium (Barrett's esophagus)

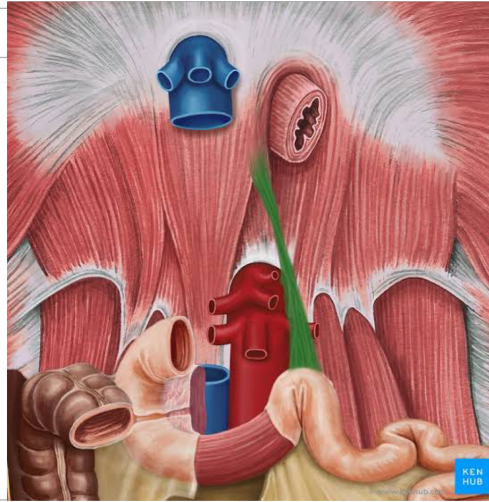
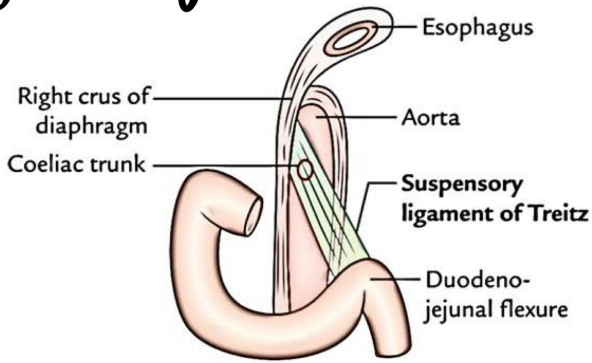
Types : Short segment: Metaplasia involves <3cm  
Long segment: Metaplasia involves >3cm



## Dohlman's procedure

- Is an endoscopic procedure
- A double-lipped oesophagoscope is used
- Wall between the diverticulum and oesophageal wall is exposed
- Hypopharyngeal bar divided with diathermy or laser
- Minimally invasive techniques allow:
  - Shorter duration of anaesthesia
  - More rapid resumption of oral intake
  - Shorter hospital stay
  - Quicker recovery

## Ligament of Treitz :



## Acute Pancreatitis



- m/c/c : **Gall Stone**
- 2nd m/c/c : **Alcohol**

- m/c/c in children : **Blunt Trauma to Abdomen**

## Chronic Pancreatitis



m/c/c : **Alcohol**

- **Repeated attacks of Pancreatitis**  
↳ **Fibrosis + Chronic inflammation**

↓  
**irreversible damage of Pancreatic Parenchyma (single / multiple episodes)**

	Acute pancreatitis	Chronic pancreatitis
Pathology	Neutrophilic inflammatory reaction	Mononuclear infiltration and fibrosis
Serologic markers	Mostly presents with elevated amylase and lipase	Amylase and lipase tend to be within normal range
Symptoms	Almost always painful crisis	Even though pain and pancreatic insufficiency are the most common symptoms, there may be long asymptomatic periods of time

## GASLESS ABDOMEN

Adult

1. Ascites.
2. Pancreatitis (acute) – due to excess vomiting.
3. Fluid-filled bowel – closed-loop obstruction, total active colitis, mesenteric infarction (early), bowel washout.
4. High obstruction – e.g. gastric outflow obstruction, congenital atresia.
5. Large abdominal mass – pushes bowel laterally.



A



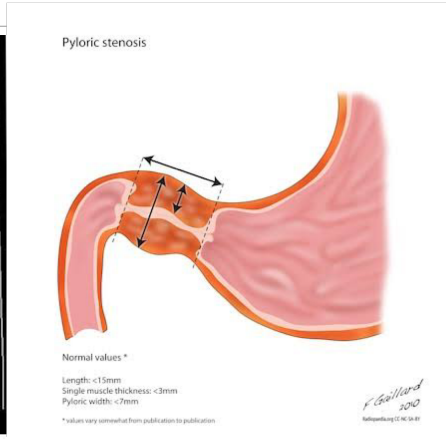
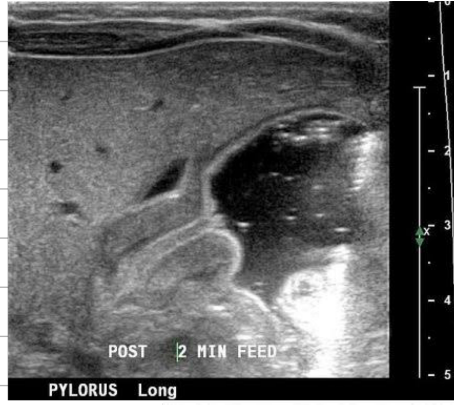
B



# Congenital Hypertrophic Pyloric Stenosis

Lead to gastric outlet obstruction

- M > F
- more common in the first born male child of the family.
- Due to lack of nitrogen oxide Synthase.
- Erythromyicine intake early in the life of a child.



## Associations:

- Trisomy 18
- Apert Syndrome
- Cornelia de Lange Syndrome.

C/F: The child is normal at birth. Symptoms start 2-3wks later. Projectile non-bilious vomiting.



HYPERTROPHIC PYLORIC STENOSIS IN A 2 YEARS OLD BOY. Plain radiograph shows severe distension of the stomach with air-fluid level inside due to complete outlet stop. Lateral view on barium exam shows narrowing and elongation of pyloric canal as well as stretching of the duodenal bulb due to hypertrophied pylorus. Notice as ell, the existence of the "string sign" or the "double track sign".

D/D: Duodenal atresia (its present since birth with bilious vomiting)

O/E: - The best time to examine the child is during feeding.
 

- Visible Peristalsis from left to right
- Followed by Projectile vomiting
- Palpable Olive shaped lump in epigastrium.

- on contrast study:
- String Sign
  - Double track sign
  - Mushroom sign

## IOC - USG

Diagnostic criteria: Thickness more than 4mm
 

- The Length of the pyloric channel more than 16mm.
- Antral nipple sign.

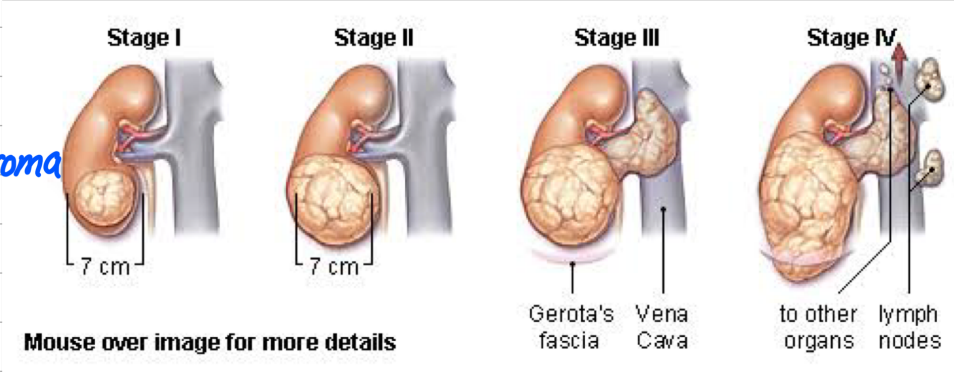
X-ray → Single bubble sign.

## Renal cell Carcinoma:

Grawitz tumor / Hypernephroma

Risk factors: DM  
HTN

Tobacco intake  
Thoratrast exposure (Contrast Material)  
Increased protein intake



Mouse over image for more details

## Syndromes :

1. Most common - Von Hippel Lindau (chr 3)

- Clear cell RCC
- Hereditary papillary RCC

2. Birth Hogg Dube Syndrome associated with chromophobe RCC.

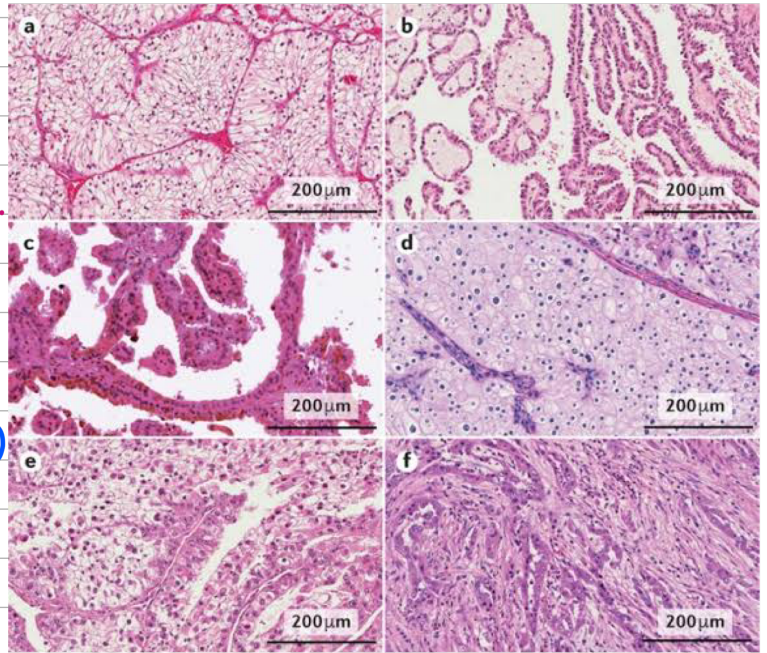
Types: 1. Clearcell Carcinoma

2. Papillary Carcinoma

3. Chromophobe RCC: Best prognosis

4. Collecting duct / Bellini : worst prognosis.

5. Medullary RCC.



## Clinical features of RCC :

- Triad of Hematuria, pain, mass (only 15%)
- most common presentation Hematuria.

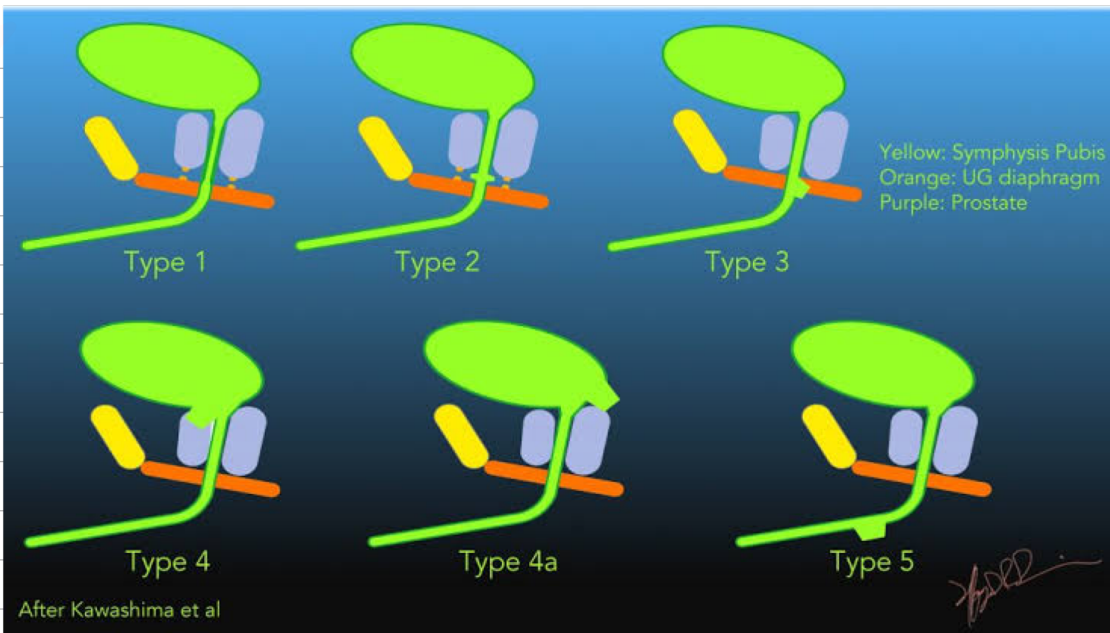
• Secondary varicocele (spread along renal vein in left side)

- Cannonball metastasis to lung (most common site of distant metastasis in RCC).

Nature Reviews | Disease Primers

## Goldman classification of Urethral injuries

Injury Type	Injury Description	Urethrographic Appearance
I	Stretching or elongation of the otherwise intact posterior urethra	Intact but stretched urethra
II	Urethral disruption above the urogenital diaphragm while the membranous segment remains intact	Contrast agent extravasation above the urogenital diaphragm only
III	Disruption of the membranous urethra, extending below the urogenital diaphragm and involving the anterior urethra	Contrast agent extravasation below the urogenital diaphragm, possibly extending to the pelvis or perineum; intact bladder neck
IV	Bladder neck injury extending into the proximal urethra	Extraperitoneal contrast agent extravasation; bladder neck disruption
IVa	Bladder base injury simulating a type IV injury	Periurethral contrast agent extravasation; bladder base disruption
V	Isolated anterior urethral injury	Contrast agent extravasation below the urogenital diaphragm, confined to the anterior urethra



### Anterior Urethra Mechanisms of Injury

### Posterior Urethra Mechanisms of Injury

Blunt Trauma to the Perineum

Penetrating injuries

Penetrating trauma gunshot/stab wounds

GSW/ Stab wounds

Penile fractures, urethral FB

High velocity associated injuries that cause pelvic trauma such as falls, MVAs etc

Constriction bands, paraplegics

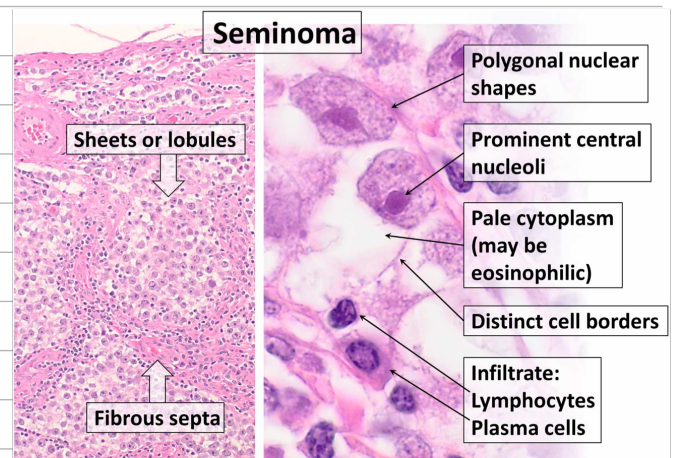
Iatrogenic injuries from genitourinary procedures such as TURPs, radical prostatectomy

Iatrogenic causes (catheters, endoscopic instrumentation etc)

Ischemia from catheterization for surgery

## Seminoma

- Age : 20-30 years old
- m/c type of testicular Cancer in adults.
- Radiosensitive.
- Usually metastasizes by lymphatics.
- Clinically present with Painless enlargement of Testis.
- Gross Specimen : Bulky tumor
- Cut section is homogenous → Cut potato appearance



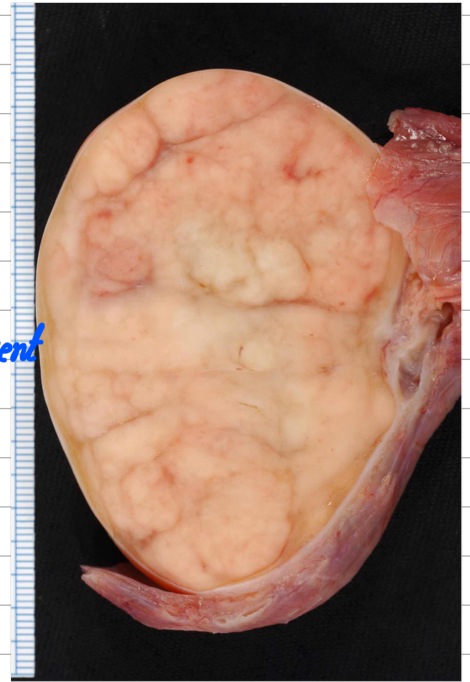
Histopathology : • Cells are present in nests/lobules.  
• Nests are separated by fibrous septa.

• Septa contains Lymphoplasmacytic infiltrate.

• Nests contain Seminoma cells.

Immunohistochemical (IHC) marker:

- Placental Alkaline Phosphatase (PLAP) +ve.
- 30% are HCG +ve : if syncytiotrophoblastic giant cells are present
- Nanog
- SALL4
- AFP is never raised.



Cut potato appearance

## Achalasia cardia

On Barium swallow: Bird beak appearance

IOC: Manometry (most sensitive)

Rx: Pneumatic dilation and Heller myotomy

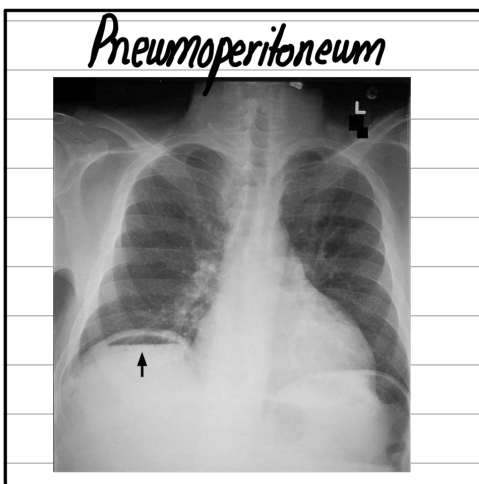
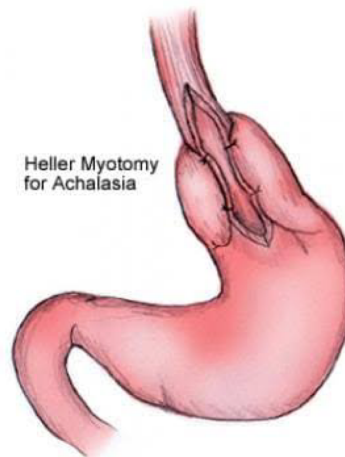


TABLE 6

## King's College Criteria

### Acetaminophen

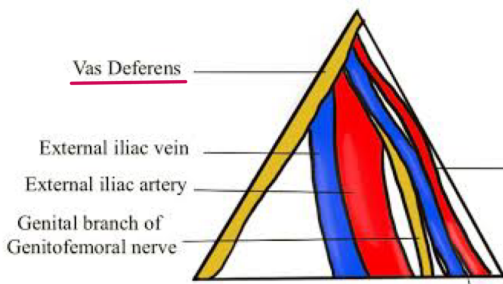
- Lactate  $>3.5$   
or
- pH  $< 7.3$  or lactate  $>3$   
or
- Grade III or IV HE and
  - INR  $> 6.5$
  - Creatinine  $> 300$

### Non-acetaminophen

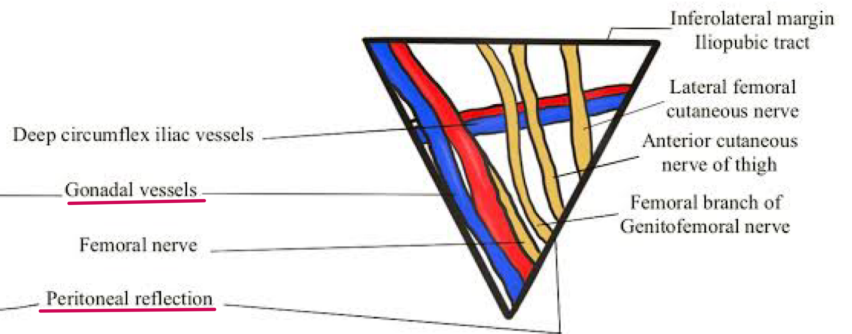
- INR  $> 6.5$  with HE  
or
- Any 3 of 5 with HE
  - Age  $<10$  or  $>40$  yrs
  - Bili  $> 300$
  - Coag: INR  $> 3.5$
  - Duration jaundice to HE  $> 7$  days
  - Etiology: Non A-E, other drug

King's College Criteria remain the most clinically useful with sensitivity of 68-69% and specificity of 82-92%

## Triangle of Doom



## Triangle of Pain



**Boundaries:** *Vas deference (Medially)*  
*Spermatic vessels (laterally)*  
*Peritoneal fold (inferiorly)*

## CEAP Classification System and Reporting Standard Revision 2020

**C** (Clinical Manifestations), **E** (Etiology), **A** (Anatomic Distribution), **P** (Pathophysiology)

<b>C0</b>	No visible or palpable signs of venous disease
<b>C1</b>	Telangiectasias or reticular veins
<b>C2</b>	Varicose veins
C2r	Recurrent varicose veins
<b>C3</b>	Edema
<b>C4</b>	Changes in skin and subcutaneous tissue secondary to chronic venous disease
C4a	Pigmentation or eczema
C4b	Lipodermatosclerosis or atrophie blanche
C4c	Corona phlebectatica
<b>C5</b>	Healed
<b>C6</b>	Active venous ulcer
C6r	Recurrent active venous ulcer

### Autograft

Graft in the same person from one part of body to other area like:

1. Skin graft
2. Hairs transplantation
3. Bone

### Isograft

Between the identical twins

### Allograft

This is between different members of the same species like:

1. Kidney transplantation
2. Heart
3. Lung
4. Liver

### Xenograft

Between two different species  
Like monkey to man

JVascSurg

# TNM Staging for Breast Cancer

T <sub>is</sub>	Cancer in situ
T <sub>1</sub>	≤ 2 cm (T <sub>1a</sub> ≤0.5 cm, T <sub>1b</sub> >0.5-1 cm, T <sub>1c</sub> >1-2 cm)
T <sub>2</sub>	>2 cm-5 cm
T <sub>3</sub>	>5 cm
T <sub>4a</sub>	Involvement of chest wall
T <sub>4b</sub>	Involvement of skin (includes ulceration, direct infiltration, peau d'orange, and satellite nodules)
T <sub>4c</sub>	T <sub>4a</sub> and T <sub>4b</sub> together
T <sub>4d</sub>	Inflammatory cancer
N <sub>0</sub>	No regional node metastases
N <sub>1</sub>	Palpable mobile involved ipsilateral axillary nodes
N <sub>2</sub>	Fixed involved ipsilateral axillary nodes
N <sub>3</sub>	Ipsilateral internal mammary node involvement (rarely clinically detectable)
M <sub>0</sub>	No evidence of metastasis
M <sub>1</sub>	Distant metastasis (includes ipsilateral supraclavicular nodes)

Reprinted with permission from Sainsbury JR, Anderson TJ, Morgan DA. ABC of breast diseases: breast

## TNM 8<sup>th</sup> - Primary tumor characteristics

## TNM Staging for Lungs

- T<sub>x</sub>** Tumor in sputum/bronchial washings but not be assessed in imaging or bronchoscopy
- T<sub>0</sub>** No evidence of tumor
- T<sub>is</sub>** Carcinoma in situ

**T<sub>1</sub>** ≤ 3 cm surrounded by lung/visceral pleura, not involving main bronchus

- T<sub>1a(mi)</sub>** Minimally invasive carcinoma
- T<sub>1a</sub>** ≤ 1 cm
- T<sub>1b</sub>** > 1 to ≤ 2 cm
- T<sub>1c</sub>** > 2 to ≤ 3 cm

**T<sub>2</sub>** > 3 to ≤ 5 cm or involvement of main bronchus without carina, regardless of distance from carina or invasion visceral pleural or atelectasis or post obstructive pneumonitis extending to hilum

- T<sub>2a</sub>** >3 to ≤4cm
- T<sub>2b</sub>** >4 to ≤5cm

**T<sub>3</sub>** >5 to ≤7cm in greatest dimension or tumor of any size that involves chest wall, pericardium, phrenic nerve or satellite nodules in the same lobe

**T<sub>4</sub>** > 7cm in greatest dimension or any tumor with invasion of mediastinum, diaphragm, heart, great vessels, recurrent laryngeal nerve, carina, trachea, oesophagus, spine or separate tumor in different lobe of ipsilateral lung

- N<sub>1</sub>** Ipsilateral peribronchial and/or hilar nodes and intrapulmonary nodes
- 2** Ipsilateral mediastinal and/or subcarinal nodes
- 3** Contralateral mediastinal or hilar; ipsilateral/contralateral scalene/supraclavicular

**M<sub>1</sub>** Distant metastasis

- M<sub>1a</sub>** Tumor in contralateral lung or pleural/pericardial nodule/malignant effusion
- M<sub>1b</sub>** Single extrathoracic metastasis, including single non-regional lymphnode
- M<sub>1c</sub>** Multiple extrathoracic metastases in one or more organs