

GASTRIC OUTLET OBSTRUCTION

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HISTORY TAKING

PREAMBLE:-

**PLEASE IDENTIFY YOUR
PATIENT**

- Name
- Age
- Sex
- Address
- Profession

HISTORY TAKING

PREAMBLE:-

PLEASE IDENTIFY
YOURSELF!!!!

HISTORY

- A 43 year old builder is brought into ER drowsy and incoherent.
- His family says that he has been vomiting profusely for the last fortnight, not responding to any medicines.
- He has complained of “acidity” and pain abdomen in the past.
- Very irregular with his diet, he is a smoker (25-30/day) and has alcohol regularly.
- He has a history of having vomited off and on previously but has been vomiting non-stop for the past 2 weeks.

HISTORY

- A 43 year old builder is brought into ER drowsy and incoherent.
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- He has complained of “acidity” and pain abdomen in the past.
- Very irregular with his diet, he is a smoker (25-30/day) and has alcohol regularly.
- He has a history of having vomited off and on previously but has been vomiting non-stop for the past 2 weeks.

INITIAL MANAGEMENT BEFORE RESUSCITATION

- Pulse:- 118/min
- BP:- 80/50 mmHg
- Sunken eyes.
- Severely dehydrated

- Has an IV channel (size 16 put in
- Bloods sent
- Plan for putting in an a NG tube after examination
- ECG done

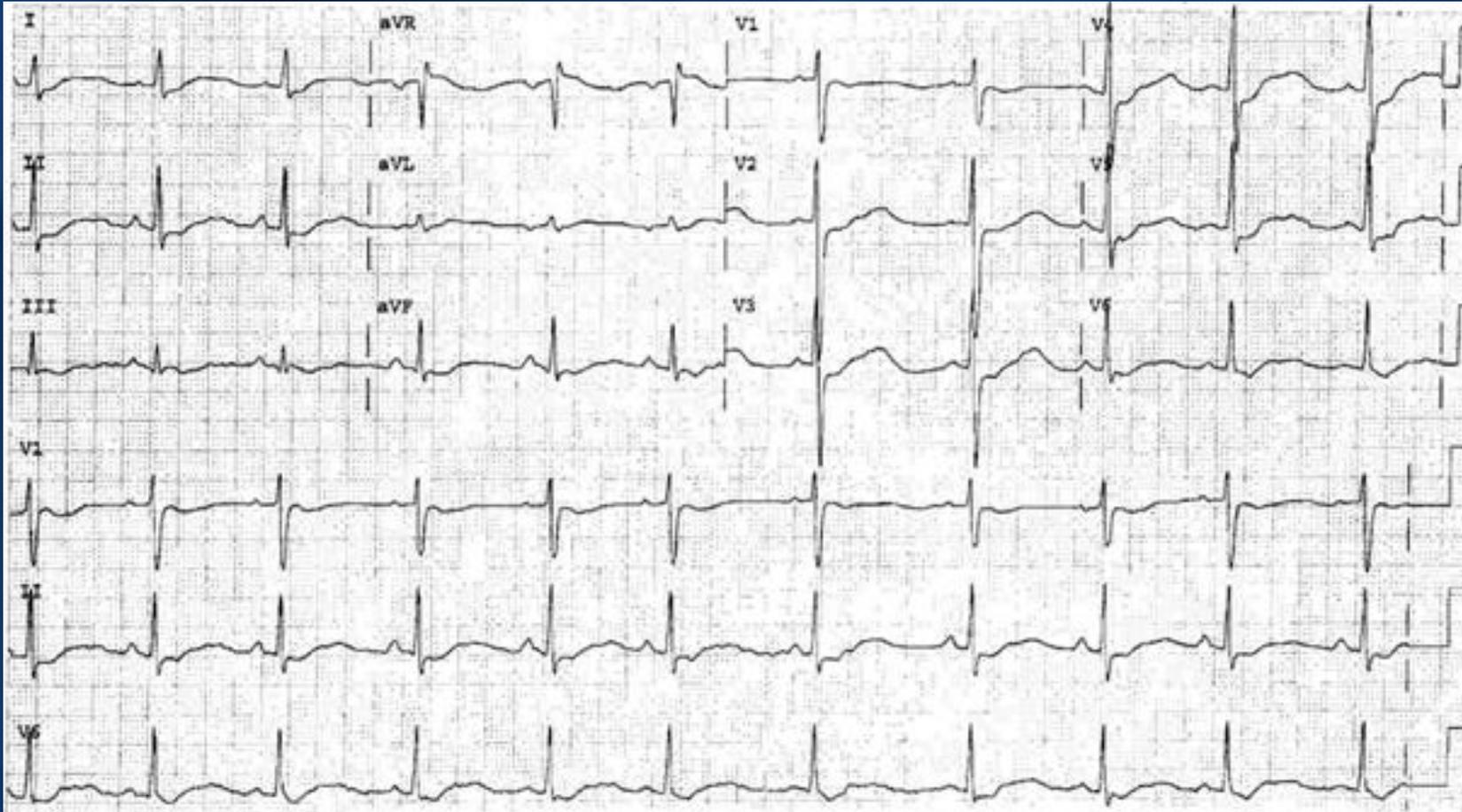
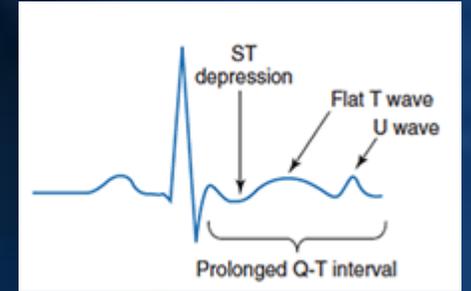
PACK –YEARS?

NO. OF PACKS/DAY

X

YEARS SMOKED

ECG



- Dynamic changes in T-wave morphology (T-wave flattening and inversion),
- ST-segment depression, and
- U waves, which are often best seen in the mid-precordial leads (V1–V4).

BLOOD BIOCHEMISTRY

- What are the likely blood biochemical abnormality?
 - Hyponatraemia
 - Hypochloraemia
 - Hypokalaemia
 - Metabolic Alkalosis
 - Hypoproteinaemia
- PARADOXIC ACIDURIA
- ?

BLOOD BIOCHEMISTRY

Na mmol/L	120	HCO ₃ mmol/L	36
K mmol/L	2.8 ?	Creatinine ugm/dl	1.3
Cl mmol/L	80	Urea mgm/dl	62

Content of different body fluids

Vomiting and nasogastric tube loss

Gastric fluid contains:

- 20–60 mmol Na⁺/l
- 14 mmol K⁺/l
- 140 mmol/l Cl⁻/l
- 60–80 mmol H⁺/l.

Excessive loss causes a hypochloraemic (hypokalaemic), metabolic alkalosis. Correction requires supplemental K⁺ and Cl⁻.

'Pure' water loss (eg fever, dehydration, hyperventilation)

Mainly insensible water loss (ie relatively low electrolyte content); results in potential hypernatraemia.

Biliary drainage loss

- 145 mmol Na⁺/l
- 5 mmol K⁺/l
- 105 mmol Cl⁻/l
- 30 mmol HCO₃⁻/l

Pancreatic drain or fistula

- 125–138 mmol Na⁺/l
- 8 mmol K⁺/l
- 56 mmol Cl⁻/l
- 85 mmol HCO₃⁻/l

Diarrhoea or excess colostomy loss

- 30–140 mmol Na⁺/l
- 30–70 mmol K⁺/l
- 20–80 mmol HCO₃⁻/l

Jejunal loss via stoma or fistula

- 140 mmol Na⁺/l
- 5 mmol K⁺/l
- 135 mmol Cl⁻/l
- 8 mmol HCO₃⁻/l

High volume ileal loss via new stoma, high stoma or fistula

- 100–140 mmol Na⁺/l
- 4–5 mmol K⁺/l
- 75–125 mmol Cl⁻/l
- 0–30 mmol HCO₃⁻/l

Inappropriate urinary loss (eg polyuria)

Na⁺/l and K⁺/l very variable, so monitor serum electrolytes closely. Match hourly urine output (minus 50 ml) to avoid intravascular depletion.

Lower volume ileal loss via established stoma or low fistula

- 50–100 mmol Na⁺/l
- 4–5 mmol K⁺/l
- 25–75 mmol Cl⁻/l
- 0–30 mmol HCO₃⁻/l

Ongoing blood loss (eg melaena)

Vomiting and nasogastric tube loss

Gastric fluid contains:

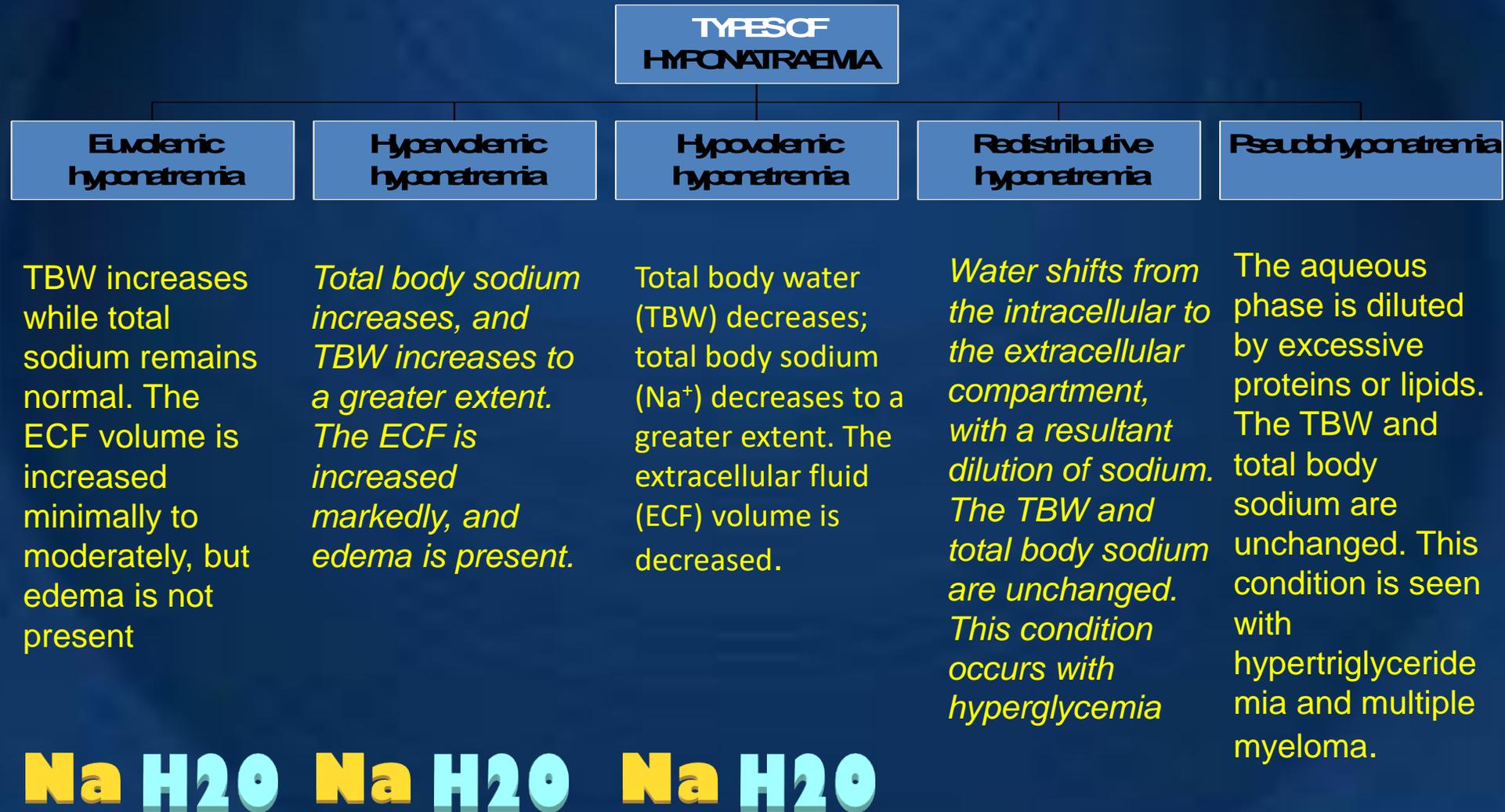
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Excessive loss causes a hypochloraemic (hypokalaemic), metabolic alkalosis. Correction requires supplemental K⁺ and Cl⁻.

WHY HYPONATRAEMIA?

- **Loss of Sodium in Vomitus:**
 - ❖ Vomiting associated with pyloric stenosis involves the expulsion of gastric contents, which are rich in hydrochloric acid and electrolytes, including sodium. This loss of sodium-rich fluids in the vomit contributes to a decline in blood sodium levels.
- **Dehydration and Impaired Sodium Absorption:**
 - ❖ The persistent vomiting can lead to dehydration, which in turn can impair the absorption of sodium in the kidneys.
- **Kidney's Role in Compensating for Acid-Base Imbalance:**
 - The kidneys attempt to compensate for the metabolic alkalosis caused by the loss of hydrogen ions in the vomitus. This compensation can lead to increased sodium reabsorption and potassium excretion.
- **Renin-Angiotensin-Aldosterone System Activation:**
 - Dehydration activates the renin-angiotensin-aldosterone system, which promotes sodium retention and potassium excretion, potentially exacerbating hyponatremia.

TYPES OF HYPONATRAEMIA



Principle of Hypokalaemia



- *Direct potassium losses contribute only minimally to actual loss.*
- Loss of gastric acid leads to metabolic alkalosis which increases tubular cell potassium concentration.
- Elevated plasma bicarbonate leads to increased bicarb to distal nephron, leading to an augmentation of potassium loss.
- Secondary aldosteronism augments potassium excretion
- Hypokalaemia-induces the excretion of H^+ ions in place of K^+ ions- PARADOXIC ACIDURIA

TREATMENT

Treatment :- Rehydration and Electrolyte Correction:

- IV fluids are the primary means of rehydration and electrolyte replacement.
- Fluid type: Isotonic crystalloid solutions with dextrose and potassium are commonly used.
- Potassium: Potassium is added to IV fluids once urine output is adequate, typically around 1-2 mL/kg/hour.
- Monitoring: Regular blood sampling is done to monitor electrolyte levels and acid-base balance until the following targets are met:
 - pH > 7.45,
 - base excess < 3.5,
 - bicarbonate < 26 mmol/L,
 - sodium > 132 mmol/L, potassium > 3.5 mmol/L, chloride > 100 mmol/L, and
 - glucose > 4 mmol.

VOMITING

HISTORY TAKING

VOMITING

- **C**ontent
- **O**rigin
- **P**rogress
- **D**uration
- **F**requency
- **Q**uality
- **Q**uantity

COPDForQ²

PAIN

PAIN (modified from) KANSAS UNIVERSITY MEDICAL CENTER

- **P** = Provoking?
- **P** = Palliating?
- **Q** = Quantity?
- **Q** = Quality?
- **R** = Region?
- **R** = Radiation/**R**eferred/**R**e-position(migration)?
- **S** = Severity?
- **T** = Three questions?
 - **O**nset (sudden or gradual?)
 - **T**ype (constant or come and go?)
 - **P**eriod (First time or noticed anything like this before?)

{PQ}²RR³ST³-OTP

HISTORY TAKING

PAST MEDICAL HISTORY

DRUG HISTORY AND PRESENT MEDICATIONS

HISTORY OF DRUG ALLERGY

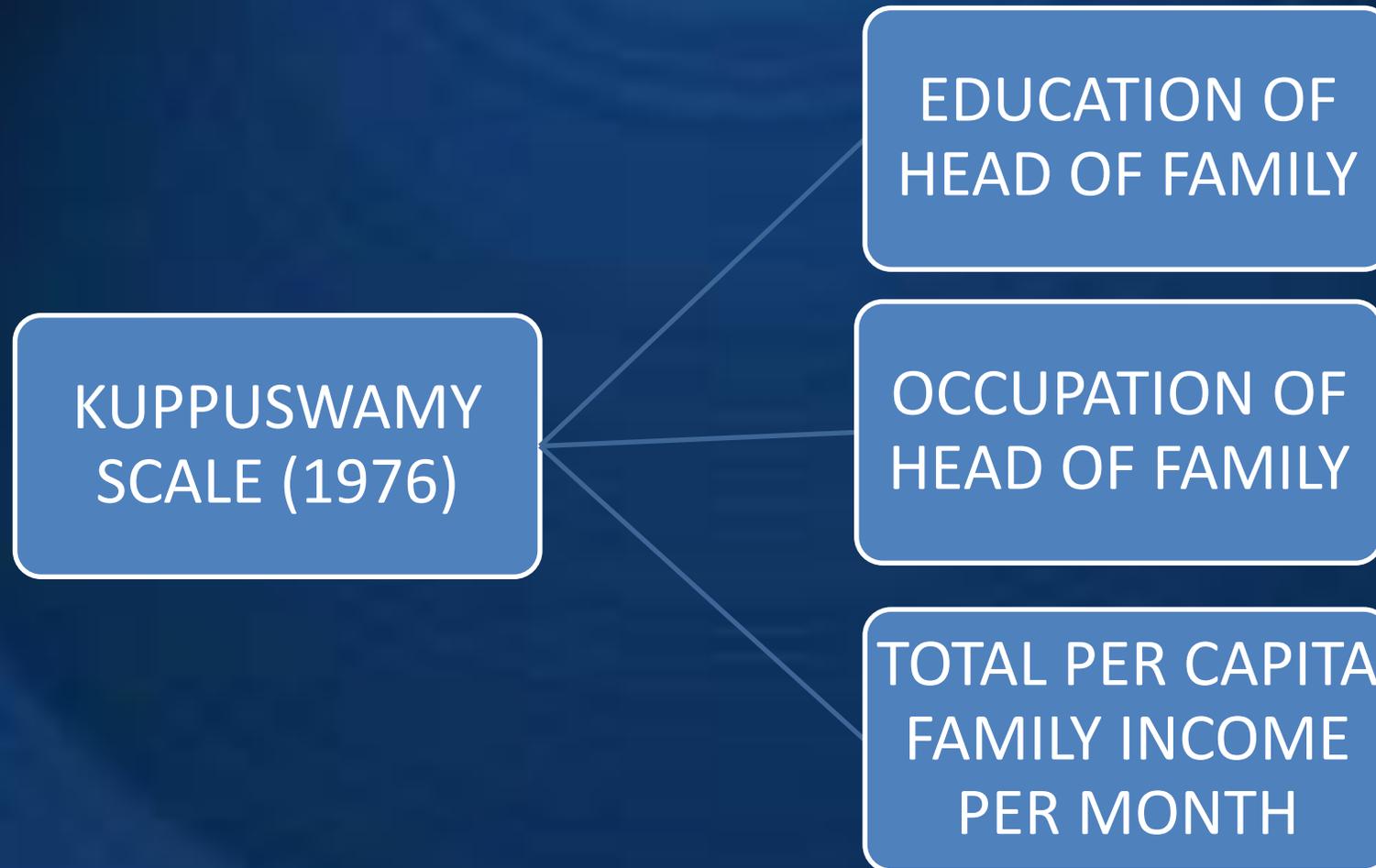
PERSONAL HISTORY

SOCIAL BACKGROUND

FAMILY HISTORY

SOCIAL BACKGROUND

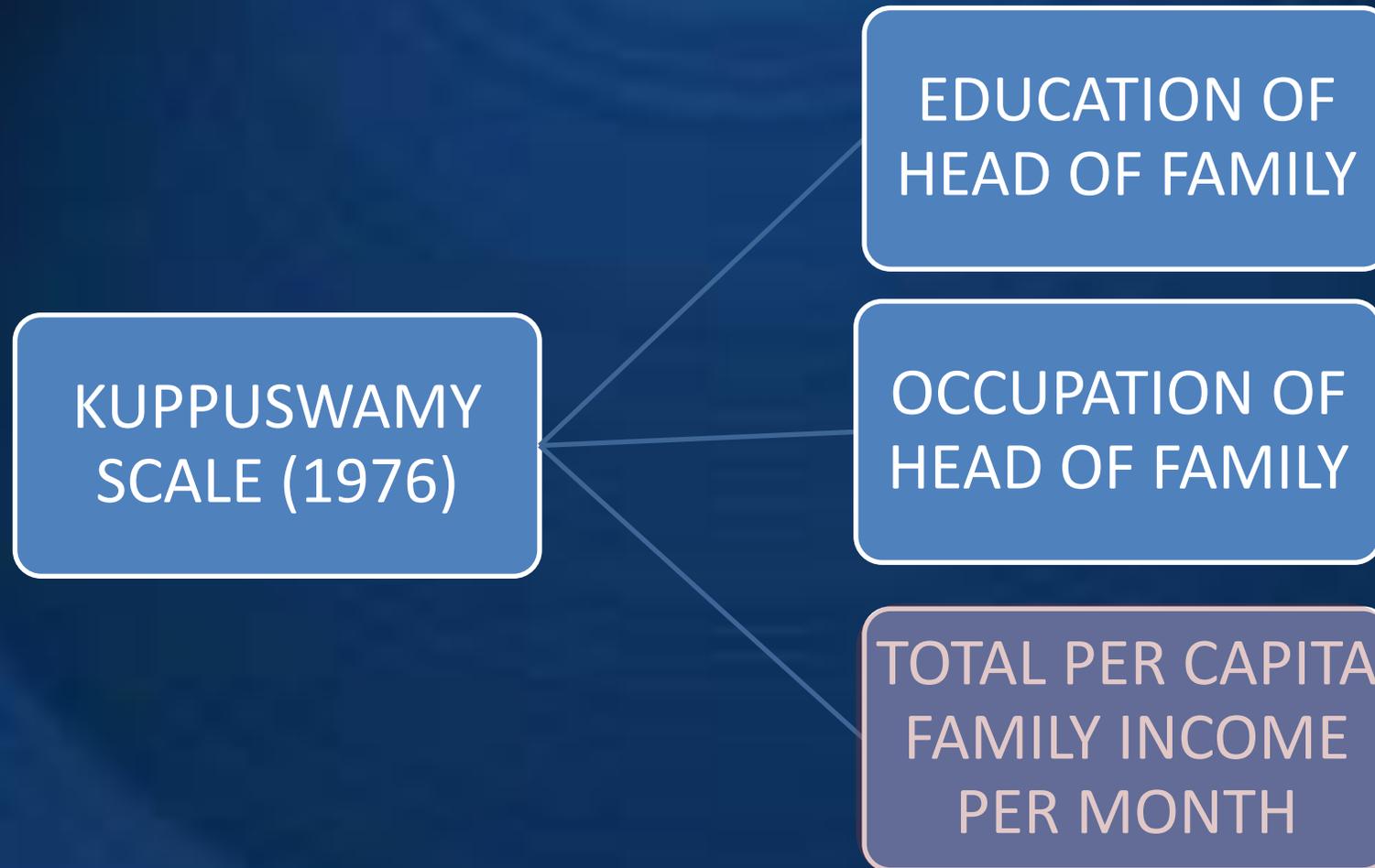
KUPPUSWAMY SCALE



KUPPUSWAMY SCALE

Education of head of family	Score	Occupation of head of family	Score	Total per capita family income per month (as given originally in 1976)	Score
Professional degree	7	Professional	10	2000 and above	12
Graduate	6	Semi profession	6	RS 1000-1999	10
Intermediate/diploma	5	Clerical/shop/farm	5	RS 750-999	6
High school	4	Skilled worker	4	RS 500-749	4
Middle school	3	Semiskilled worker	3	300-499	3
Primary school	2	Unskilled worker	2	RS 101-299	2
Illiterate	1	Unemployed	1	Less than RS 100	1

MODIFIED KUPPUSWAMY SCALE



MODIFICATION (January 2019)

Original income group	Revised by using AICPI	Score
RS 2000 and above	RS 47348 and above	12
RS 1000–1999	RS 23674–47347	10
RS 750–999	RS 17756–23673	6
RS 500–749	RS 11837–17755	4
RS 300–499	RS 7102–11836	3
RS 101–299	RS 2391–7101	2
Less than ' 100	Less than 2390	1

AICPI – All India Consumer Price Index

Plexus Surgery App

PRASAD'S SCALE

Monthly per capita income in RS (2019 January)	Socioeconomic class
7008 and above	Upper class
3504 - 7007	Upper middle class
2102– 3503	Middle class
1051– 2101	Lower middle class
Below 1050	Lower

EXAMINATION - DEHYDRATION

Severity	Symptoms	Physical Findings
Mild (1%-3% loss of body weight)	Thirst, dry mouth, and mild fatigue	Normal BP, slight tachycardia, and mild dry mucous membranes
Moderate (4%-6% loss of body weight)	Dizziness, muscle cramps, and irritability	Orthostatic hypotension, moderate tachycardia, and delayed capillary refill
Severe ($\geq 7\%$ loss of body weight)	Confusion, lethargy, oliguria, and shock	Profound hypotension, tachycardia, altered mental status, and cool or clammy skin

GENERAL EXAMINATION

- Orientation
- Nutrition and build
- Activity score
- Face
- Decubitus
- Pallor
- Cyanosis
- Clubbing
- Jaundice
- Oedema
- Trachea
- Neck nodes.

KARNOFSKY SCORING

Karnofsky Performance Scale		
General category	%	Specific criteria
<ul style="list-style-type: none"> Able to carry on normal activity No special care needed 	100	Normal general status - No complaint - No evidence of disease
	90	Able to carry on normal activity - Minor sign of symptoms of disease.
	80	Normal activity with effort, some signs or symptoms of disease.
<ul style="list-style-type: none"> Unable to work Able to live at home and care for most personal needs Various amount of assistance needed 	70	Able to care for self, unable to carry on normal activity or do work
	60	Requires occasional assistance from others, frequent medical care
	50	Requires considerable assistance from others; frequent medical care.
<ul style="list-style-type: none"> Unable to care for self Requires institutional or hospital care or equivalent Disease may be rapidly progressing 	40	Disabled, requires special care and assistance
	30	Severely disabled, hospitalization indicated, death not imminent
	20	Very sick, hospitalization necessary, active supportive treatment necessary
<ul style="list-style-type: none"> Terminal states 	10	Moribund
	0	Dead

ECOG SCORING

ECOG	Description
0	Fully active, able to carry on all pre-disease performance without restriction.
1	Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work.
2	Ambulatory and capable of all selfcare but unable to carry out any work activities. Up and about more than 50% of waking hours.
3	Capable of only limited selfcare, confined to bed or chair more than 50% of waking hours.
4	Completely disabled. Cannot carry on selfcare. Totally confined to bed or chair

BMI IN INDIA

Nutritional status based on the **WHO** and "Asian criteria" values

Nutritional Status	WHO criteria BMI cut-off	"Asian criteria" BMI cut-off
Underweight	<18.5	<18.5
Normal	18.5 - 24.9	18.5 - 22.9
Overweight	25 - 29.9	23 - 24.9
Pre-Obese	-	25 - 29.9
Obese	≥ 30	≥ 30
Obese Type 1 (obese)	30 - 40	30 - 40
Obese Type Type 2 (morbid obese)	40.1 - 50	40.1 - 50
Obese type 3 (super obese)	>50	>50

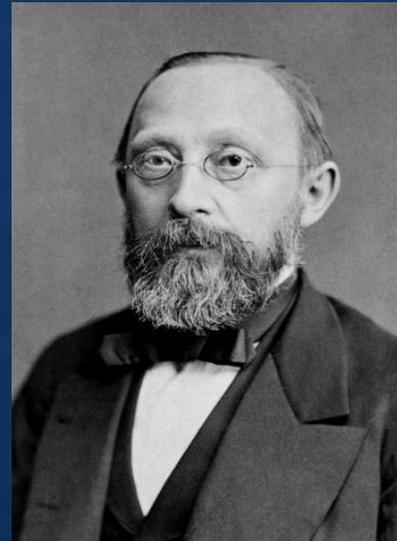
Left Supraclavicular Node

GENERAL SURVEY

GENERAL SURVEY

- Examination of the neck.

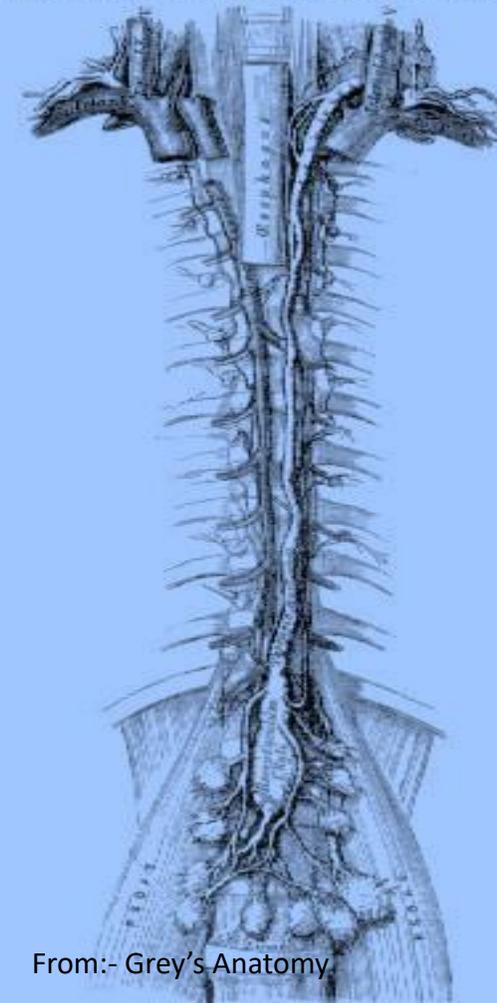
Rudolf Ludwig Karl Virchow (1821-1902) was a German doctor, anthropologist, pathologist, historian, biologist and **politician**, known for his advancement of public health.



https://en.wikipedia.org/wiki/Rudolf_Virchow



The Thoracic and Right Lymphatic Duct



From:- Grey's Anatomy

Medical terms named after Virchow

1. **Virchow's angle**, the angle between the nasobasilar line and the nasosubnasal line.
2. **Virchow's cell**, a macrophage in Hansen's disease.
3. **Virchow's cell theory**, "omnis cellula e cellula" - every living cell comes from another living cell.
4. **Virchow's concept of pathology**, comparison of diseases common to humans and animals.
5. **Virchow's disease**, leontiasis ossea, now recognized as a symptom rather than a disease.
6. **Virchow's gland**, Virchow's node the presence of metastatic cancer in a lymph-node in the supraclavicular fossa (root of the neck left of the midline). Also known as Troisier's sign..
7. **Virchow's Law**, during craniosynostosis, skull growth is restricted to a plane perpendicular to the affected, prematurely fused suture and is enhanced in a plane parallel to it.

Medical terms named after Virchow

8. **Virchow's line**, a line from the root of the nose to the lambda.
9. **Virchow's metamorphosis**, lipomatosis in the heart and salivary glands.
10. **Virchow's method of autopsy**, a method of autopsy where each organ is taken out one by one.
11. **Virchow's psammoma**, psammoma bodies in meningiomas.
12. **Virchow-Robin spaces**, enlarged perivascular spaces (EPVS) (often only potential) that surround blood vessels for a short distance as they enter the brain.
13. **Virchow-Seckel syndrome**, a very rare disease also known as "bird-headed dwarfism".
14. **Virchow's triad**, the classic factors which precipitate venous thrombus formation: trauma, stasis and hypercoaguability.

LOCAL EXAMINATION

INSPECT

- From Foot End



INSPECT

- Tangentially (Get down on your knees (*at the least you can always pray*))

INSPECT

- Standing beside the patient

LOCAL EXAMINATION

MUSTS

- **Must** expose from the mid-chest to the mid-thigh.
- You **must** have examined the whole region including the hernial orifices and the scrotum.
- You could expose the patient from mid or lower chest to the symphysis during your discussion for patient comfort and modesty
- You **must** mention that you have exposed and examined completely
- **It is indefensible to miss a hernia or a testicular absence or tumour.**

INSPECTION

- **SKIN**

- Scars
- Striae
- Dilated veins
- Rashes/ Ecchymosis

- **UMBILICUS**

- **CONTOUR OF THE ABDOMEN**

- Type (flat, rounded, protuberant, or scaphoid)
- Symmetric/Asymmetric
- Organomegaly

- **MOVEMENTS**

- Respiratory
- Peristaltic
- Pulsatile

- **SWELLING**

Local Examination

- Umbilical nodules



<https://actagastro.org/sister-mary-josephs-nodule-from-the-history-to-the-images-a-case-based-literature-review/>



Sister Mary Joseph (Julia Dempsey) worked as a surgical assistant to William J Mayo. However it was not until 1949, 10 years after her death that Sir Hamilton Bailey used the term in his textbook *Physical Signs in Clinical Surgery*

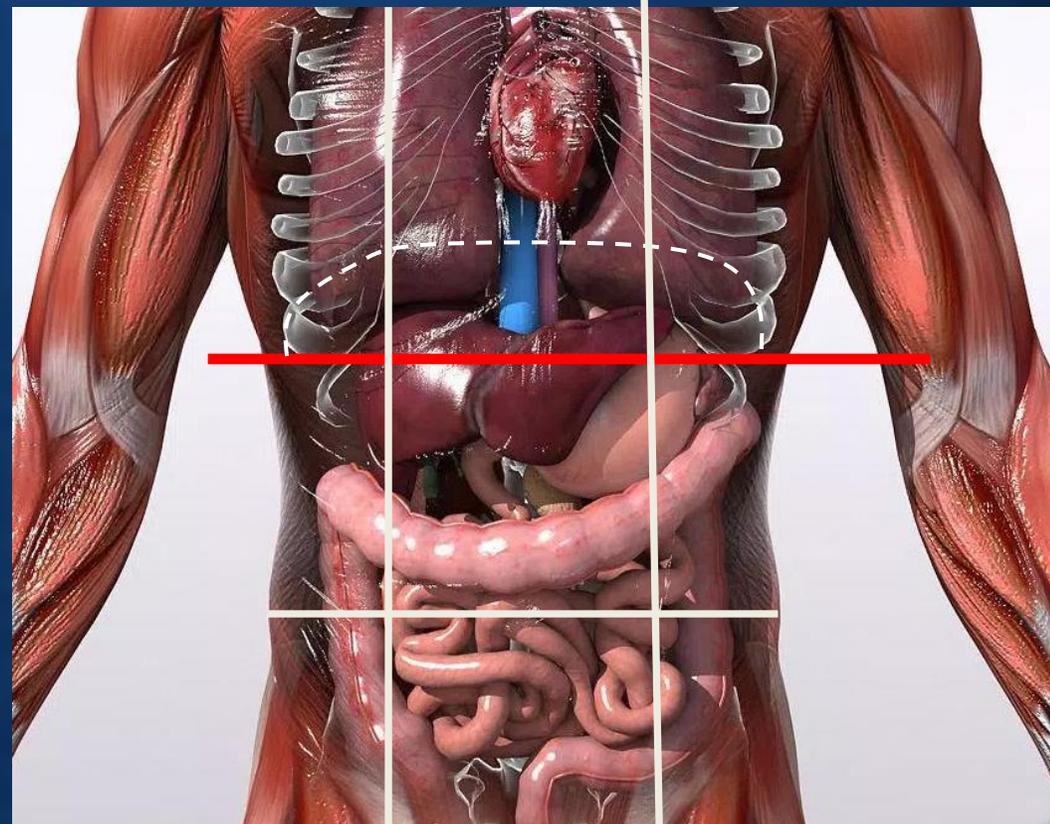
CONTOUR



SWELLING

- Site Describe by quadrants
- Size
- Shape
- Surface
- Pulsatility

Structures at
the Trans-
pyloric plane?



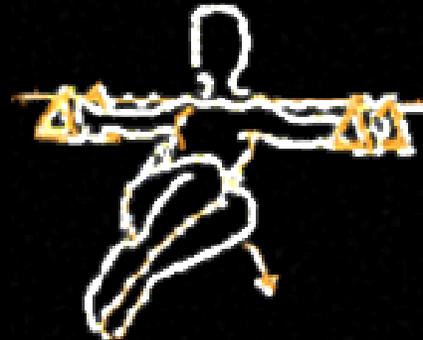
STRUCTURES AT THE TRANS-PYLORIC PLANE

1. The tips of both 9th costal cartilages
2. Lower border of L1 vertebra
3. The pylorus of the stomach
4. Fundus of the gallbladder
5. Hilum of both kidneys
6. Origin of the superior mesenteric artery
7. Lower end of the spinal cord
8. Cysterna chyli

EXAMINATION



COMPARTMENTS



PALPATION

- Patient must be comfortable
- Look at the patient's face –DO NOT HURT HIM
- Warm hands, flat on the abdomen
- Abdominal muscles must be relaxed – supported bent knees if you must, patient to breathe easily

PALPATION OF THE LUMP

- Tenderness
- Temperature
- Site
- Size
- Shape
- Surface
- Consistency
- Compressibility
- Compartment
- Pulsatility
 - Expansile
 - Transmitted

2 Ts, 4Ss, 3Cs, 1P



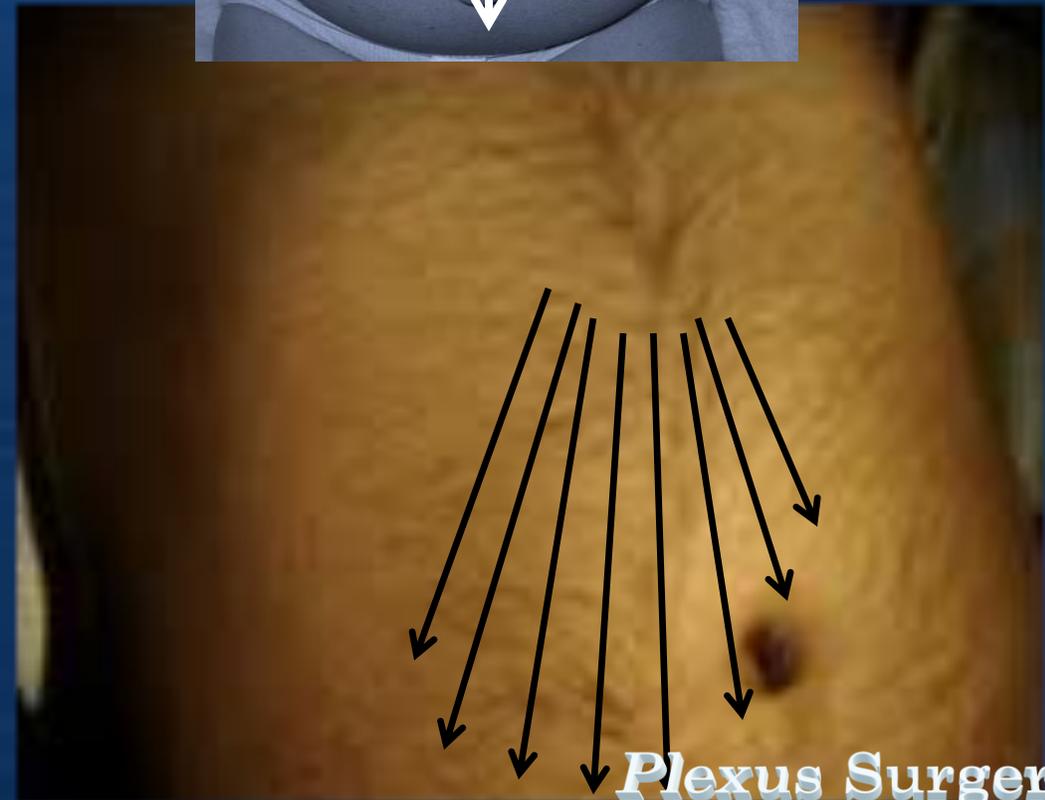
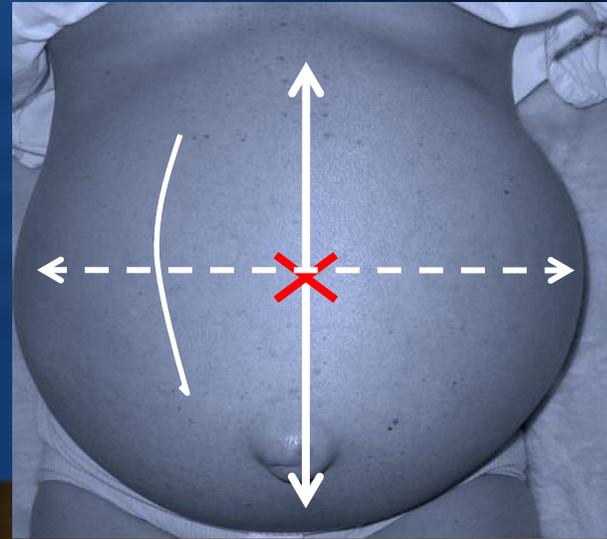
PALPATION OF ABDOMINAL ORGANS

- LIVER +/- GALL BLADDER
- SPLEEN
- RIGHT KIDNEY
- LEFT KIDNEY



PERCUSSION

- Percuss the upper border of the liver (What is piano percussion?)
- Percuss over the left 9th, 10th and 11th IC spaces if Splenomegaly suspected
- Percuss all over the abdomen particularly the flanks
- In ascites you need to elicit the sign of “Shifting Dullness” (*Say that you have ensured that the patient has passed urine*)
- “Ausculto-percussion”.



AUSCULTATION

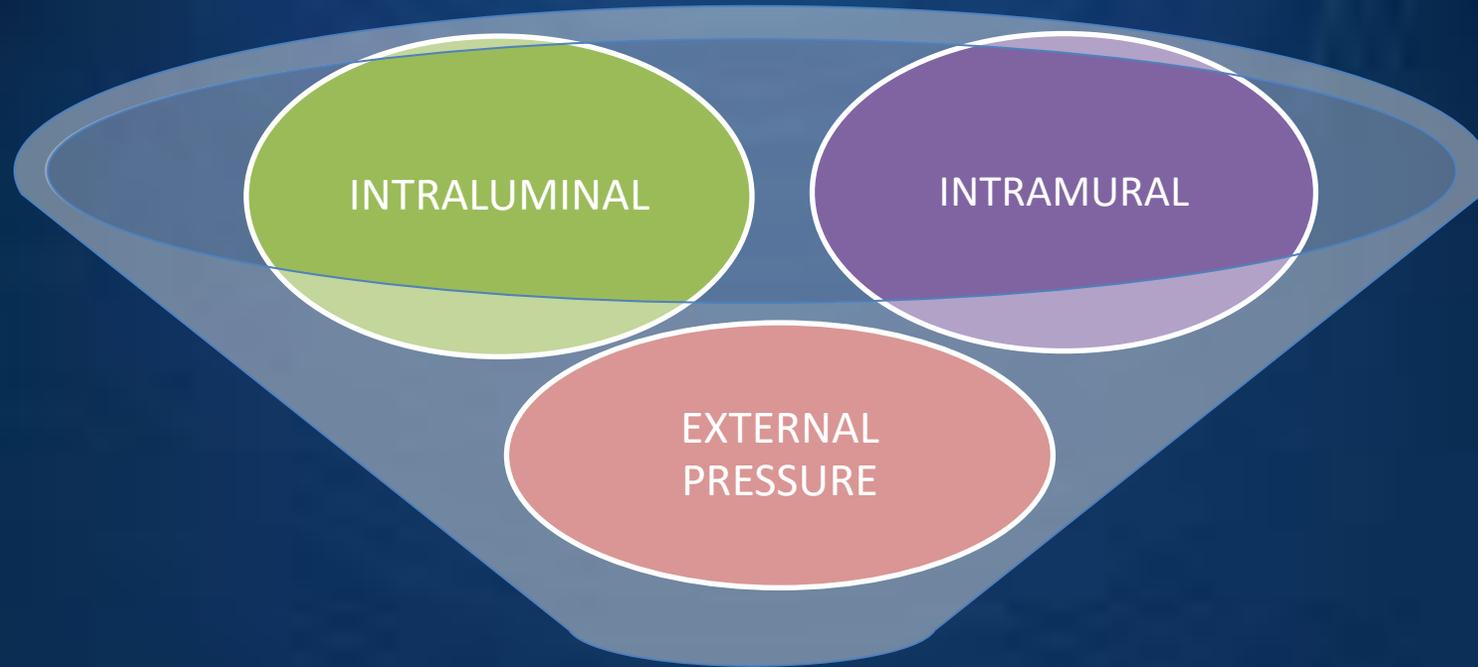
- Bruit over a vascular tumour or an aneurysm.
- Does it correspond with the pulse?
- Increased/decreased bowel sounds.
- Venous hum.
- **Succussion splash?**

DIAGNOSIS

GASTRIC OUTLET OBSTRUCTION

- Why?
- What is your diagnosis?
- What is your differential diagnosis?

IN AN EXAMINATION BEST TO CLASSIFY



ESTABLISH YOUR DIAGNOSIS
CLINICALLY

WHAT WILL YOU DO?

Plexus Surgery App

UNIVERSAL SEQUENCE

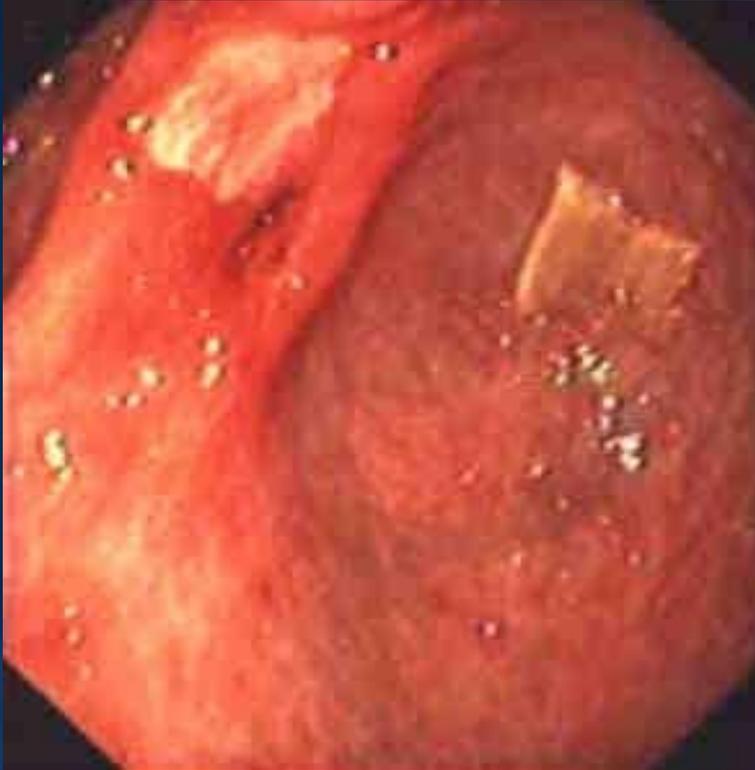
CONFIRM THE DIAGNOSIS

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graph TD; A[CONFIRM THE DIAGNOSIS] --> B[STAGE - IF NEEDED]; B --> C[INSTITUTE APPROPRIATE TREATMENT];
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STAGE - IF NEEDED

INSTITUTE APPROPRIATE TREATMENT

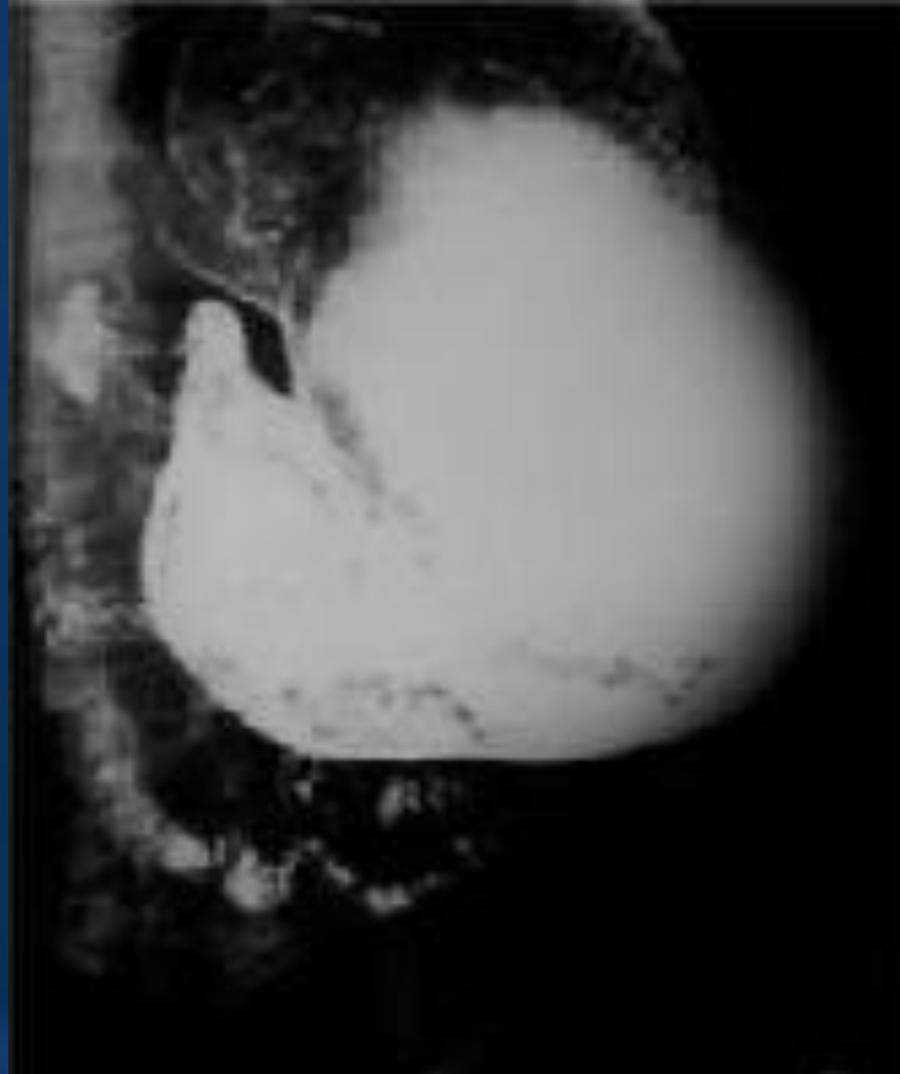
UGI ENDOSCOPY



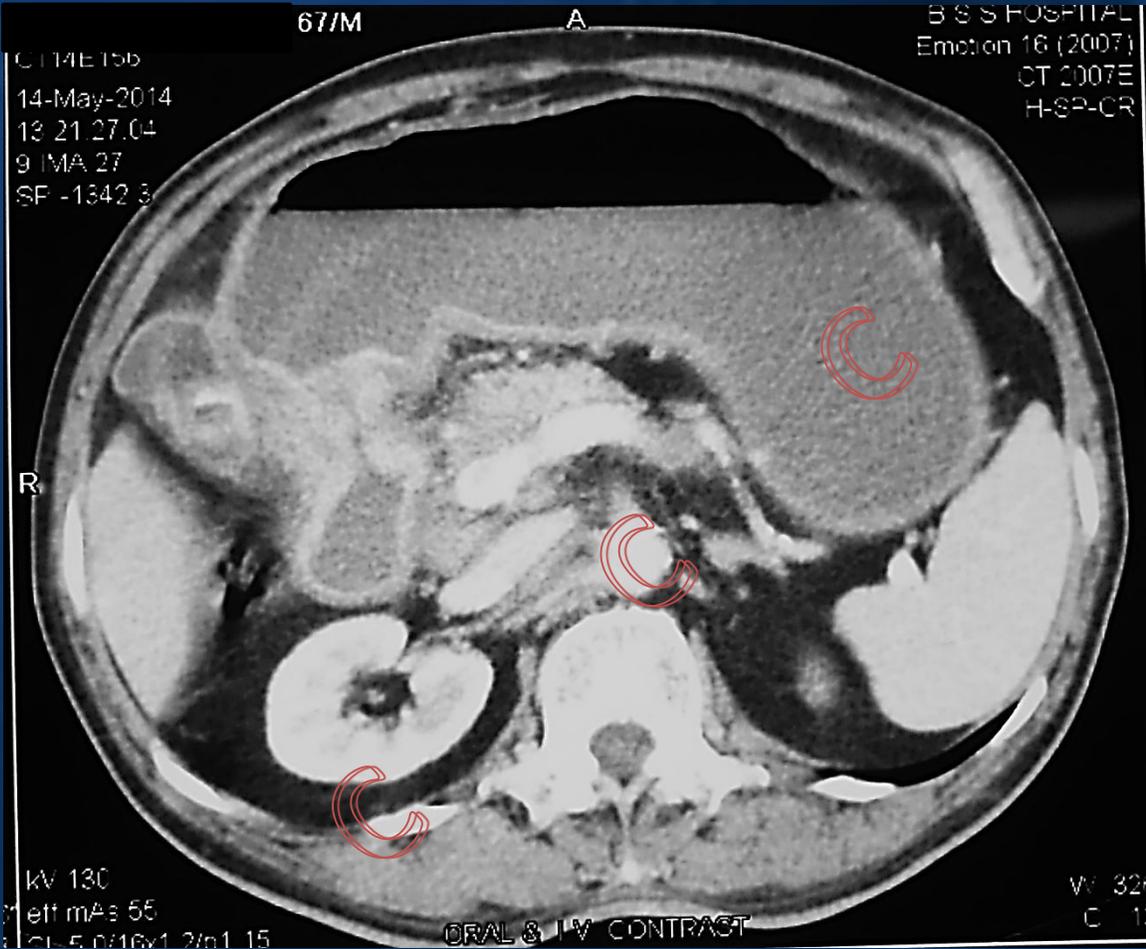
- Eccentric situation a tight pyloric ring.
- Plenty of dirty fluid containing old food material.



BARIUM MEAL



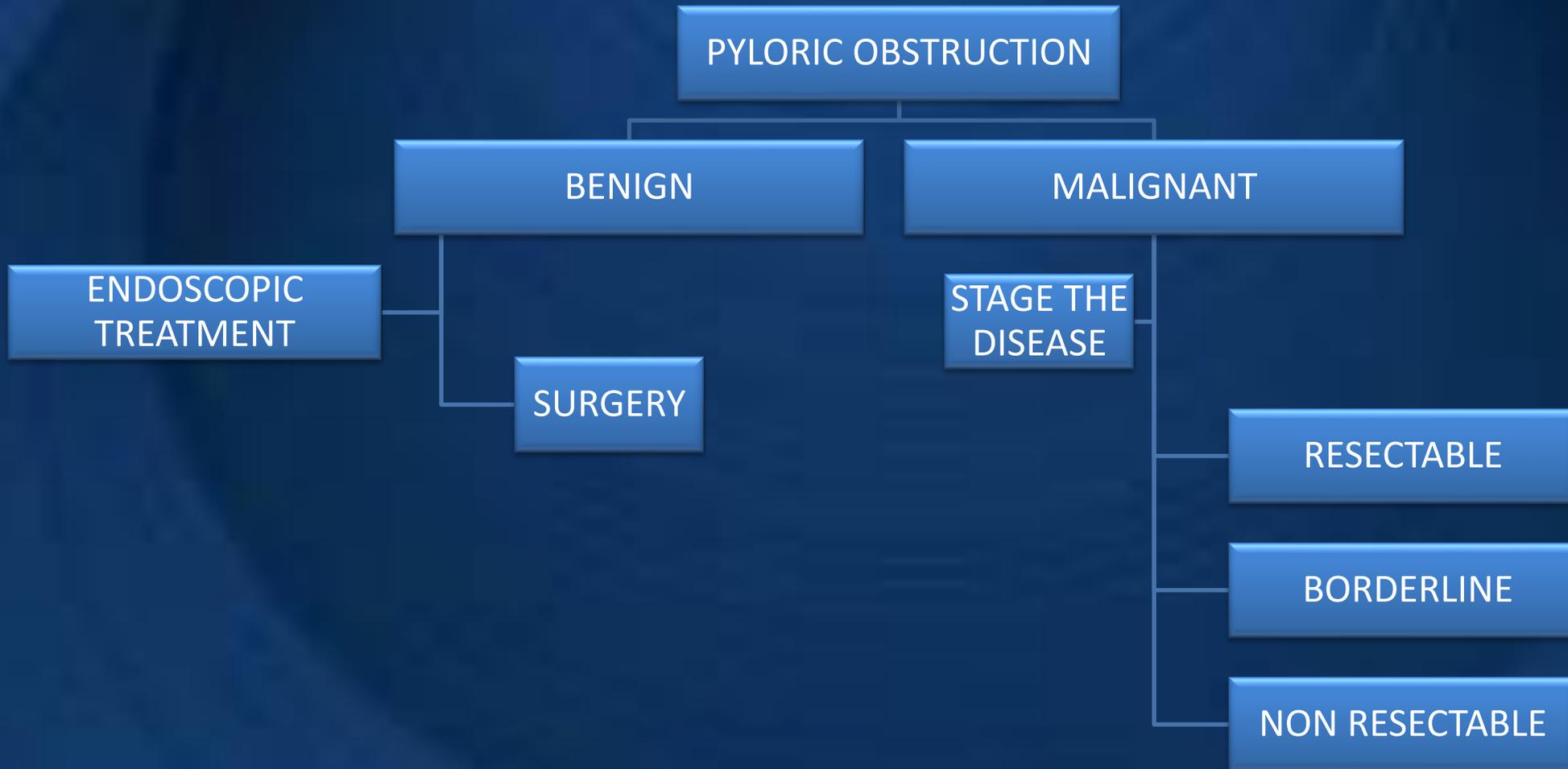
IMAGING



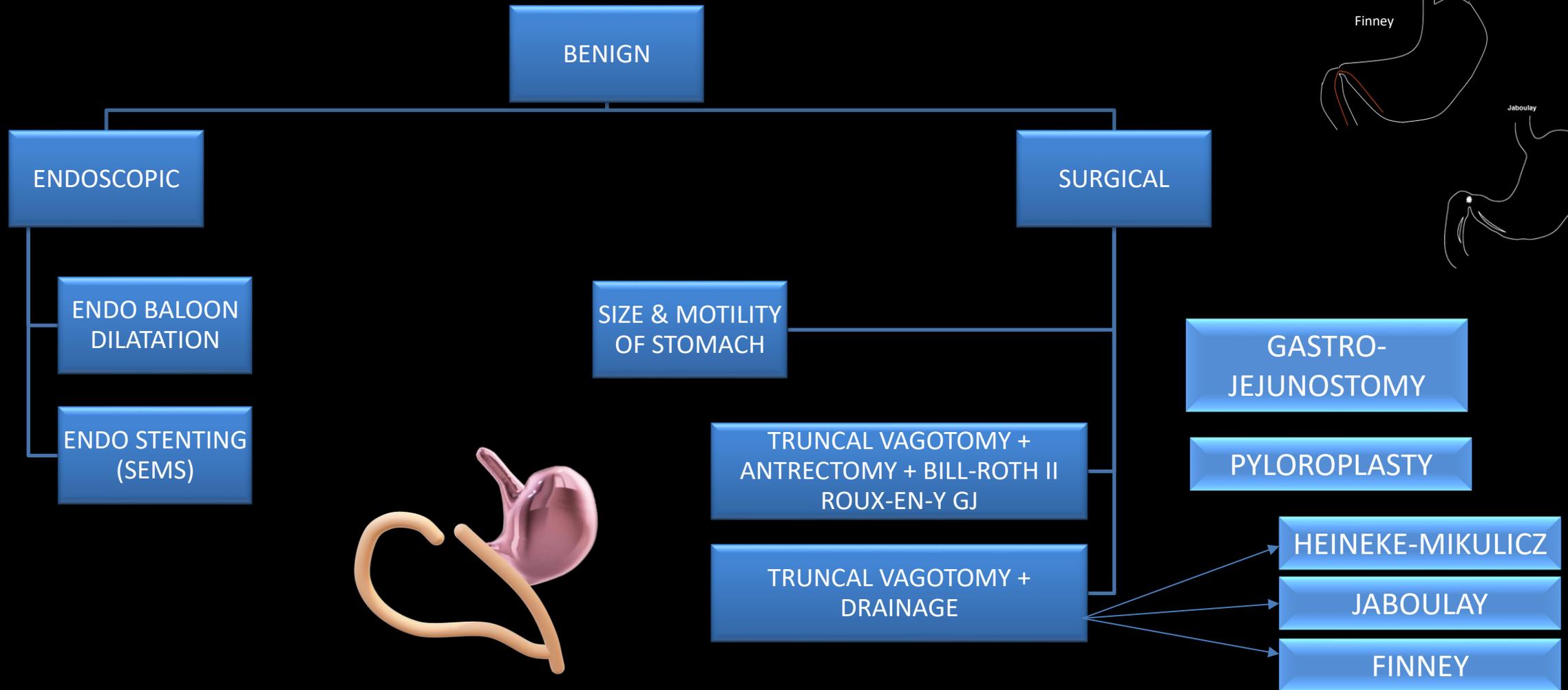
TREATMENT

- Resuscitation.
- Treatment of the pyloric obstruction.
- Depends on the endoscopic biopsy.

TREATMENT



TREATMENT



Visick classification for Side Effects after Peptic Ulcer Operations

- **Grade I** : Excellent, no symptoms.
- **Grade II** : Good, mild symptoms revealed by questioning/easily controlled.
- **Grade III**: Poor, mild to moderate symptoms not interfering seriously with life/work.
- **Grade IV**: Failure, symptoms or complications that interfere with normal/life work.

Complications of Peptic ulcer Surgery

- ❖ Recurrent ulceration- stomal, retained antrum.
- ❖ Small stomach syndrome.
- ❖ Afferent loop syndromes-
 - a) *Bloating- acute discomfort 20 mins to 1 hr after eating, relieved by vomiting-due to partial obstruction of afferent loop.*
 - b) *Stasis with bacterial overgrowth causing blind loop syndrome with malabsorption of fat and Vit B12.*
- ❖ Bile reflux gastritis.
- ❖ Bilious vomiting.

Complications of Peptic ulcer Surgery

❖ Dumping syndromes

- a) *Early- vasomotor syndromes experienced 30 mins after eating-rapid emptying of hyperosmolar gastric contents into small intestine.*
- b) *Late-features of hypoglycaemia occurring 90mins to 3 hrs after eating. Probably due to hypoglycaemia due to insulin release in response to rapid emptying of sugar containing fluids into proximal small intestine.*

❖ Post vagotomy diarrhoea- vagotomy and bypassing the pyloric mill.

❖ Haematological complications; *Vit B12, Folate and Iron deficiency.*

❖ Osteomalacia and osteoporosis.

❖ General malabsorption.

❖ Carcinoma after Partial gastrectomy.

Features of Early and Late Dumping

	EARLY	LATE

COMPARTMENTS

INTRA-ABDOMINAL

INTRA-ABDOMINAL UPPER ABDOMINAL LUMP

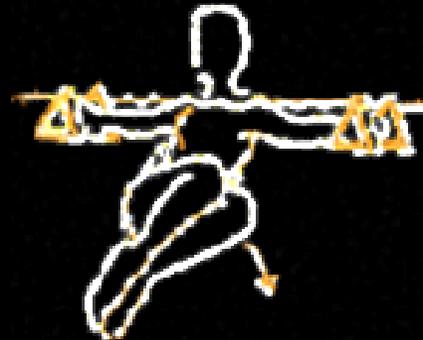
EXAMPLES FROM

- Stomach
- Liver
- Transverse Colon
- Spleen

What Next?

- CONFIRM THE DIAGNOSIS
- INSTITUTE APPROPRIATE TREATMENT
 - GENERAL
 - SPECIFIC

COMPARTMENTS

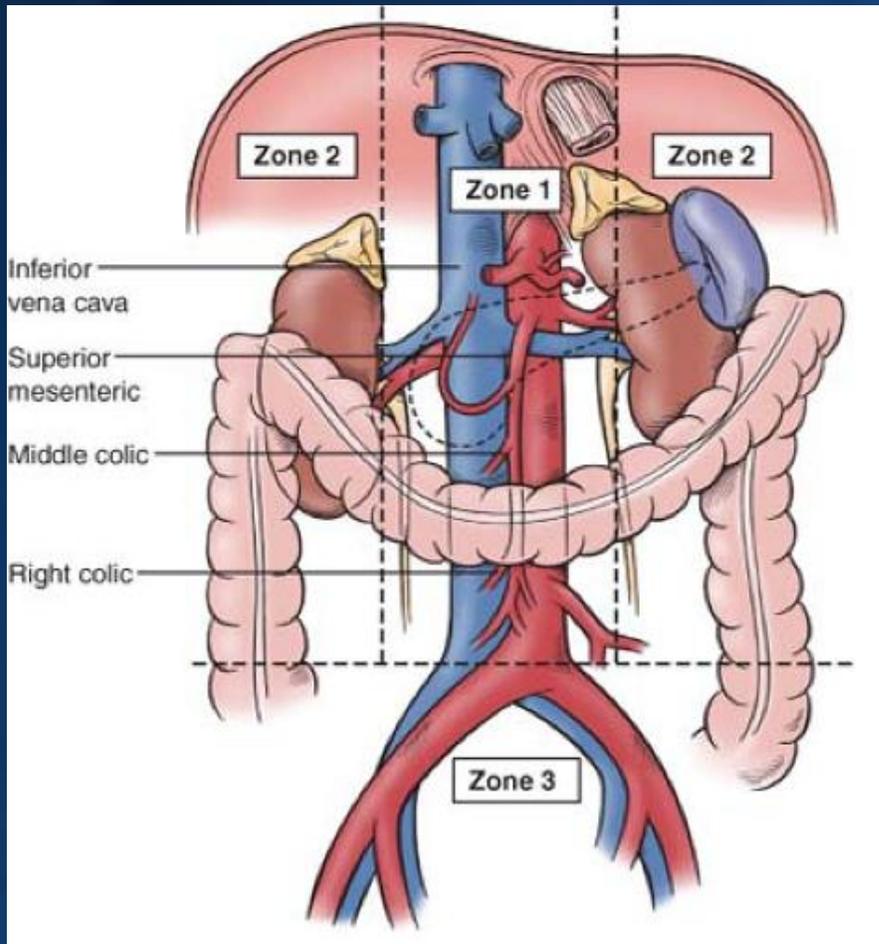


COMPARTMENTS

RETROPERITONEUM

1

Retroperitoneal Zones – I



Vascular structures include the:

- 1. Celiac trunk
- 2. Superior mesenteric artery
- 3. Inferior mesenteric artery
- 4. Renal vessels
- 5. Aorta
- 6. Inferior vena cava

Nonvascular

- 1. Pancreas
- 2. 2nd, 3rd, 4th portions of the duodenum

UPPER RETRO-PERITONEAL SWELLING

DD- ZONE I

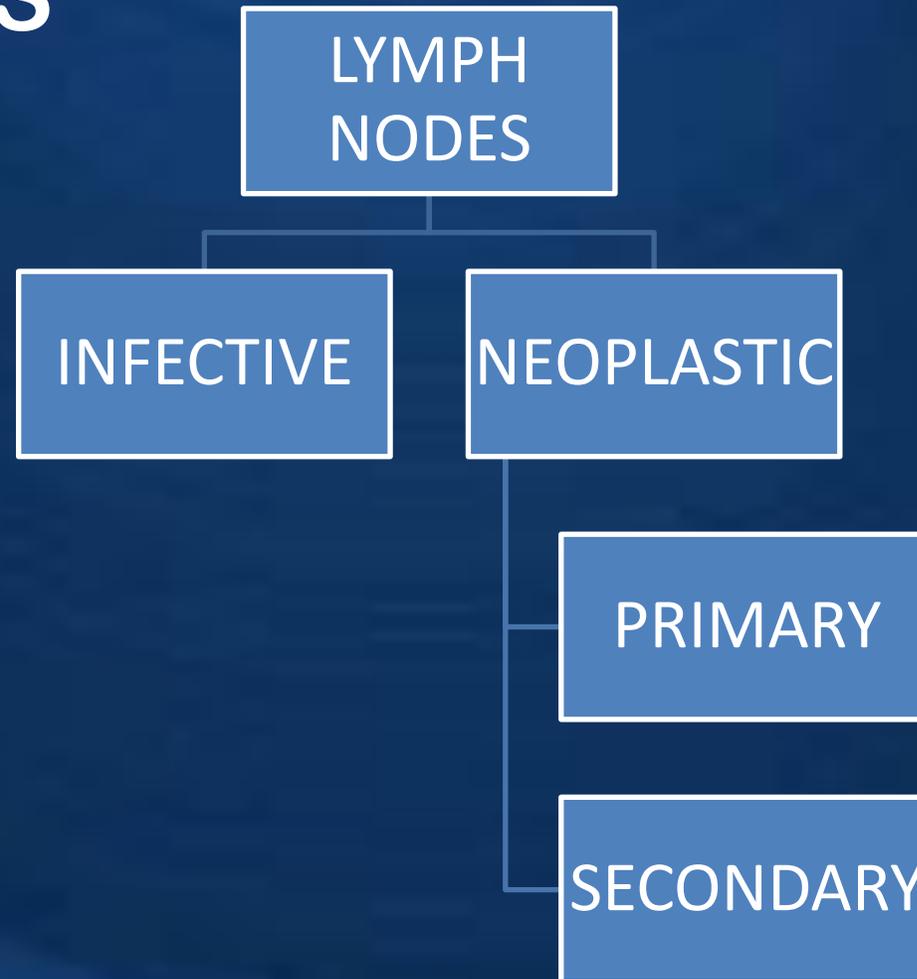
- Pancreatic swellings (Cysts, tumours).
- Abdominal aortic aneurysms.
- Lymph nodal swellings.

PANCREATIC SWELLING

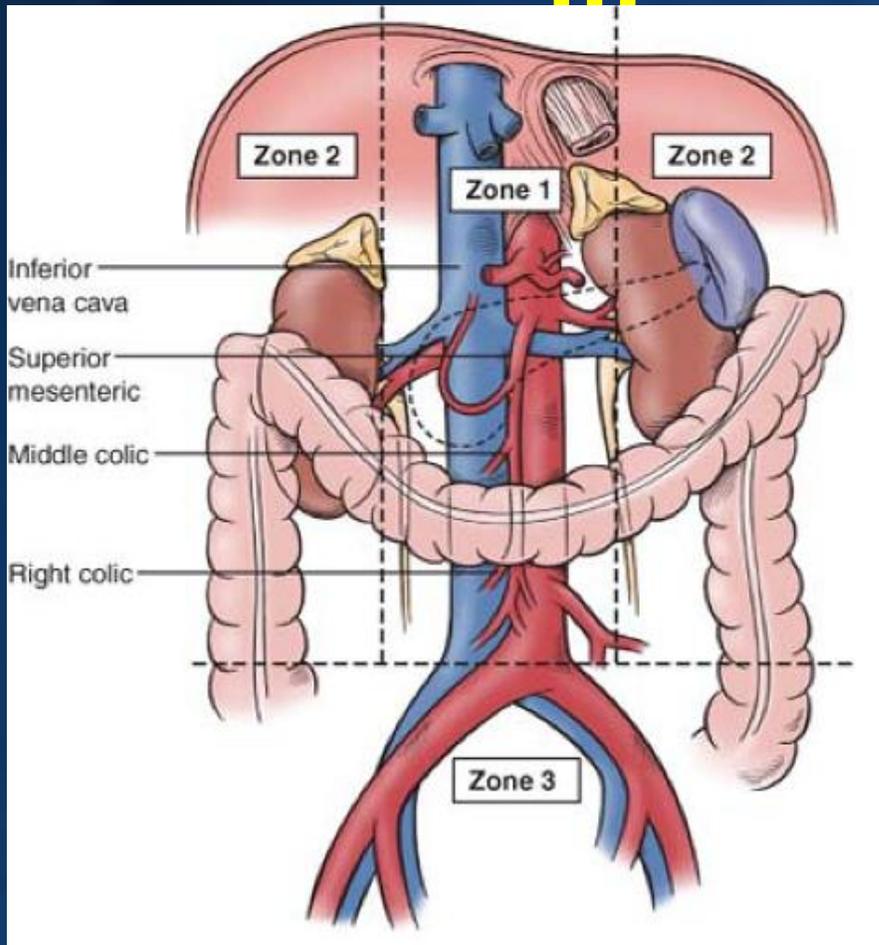
- Cystic swellings
 - Pseudocyst
 - Parasitic cyst
 - Cystic Tumours
- Large solid tumours
- Tuberculosis

RETROPERITONEAL NODES

- CAUSES



Retroperitoneal Zones – II & III



Adrenal glands, kidneys, ureters, and renal vessels at the kidney hilum

III in the pelvis (infraperitoneal)

Iliac vessels, rectum, and ureter

UPPER RETRO-PERITONEAL SWELLING

DD- ZONE II

- **Kidney swellings**
 - Hydronephrosis
 - Pyonephrosis
 - Renal tuberculous lesions
 - Renal tumours
- **Adrenal tumours (non-functional) Adenomyolipoma**
- **Lymph nodal swellings.**
- **Retroperitoneal Swellings (Sarcoma).**

lower RETRO-PERITONEAL SWELLING

DD- ZONE III

- Ectopic kidney.
- Transplanted kidney.
- Paragangliomas.
- Ileo-psoas swellings.
 - Ilio-psoas abscess.
 - Lymph nodes.
 - Infective
 - Lymphoma
 - Metastatic
- Distended urinary bladder.

COMPARTMENTS

INTRA-ABDOMINAL

2

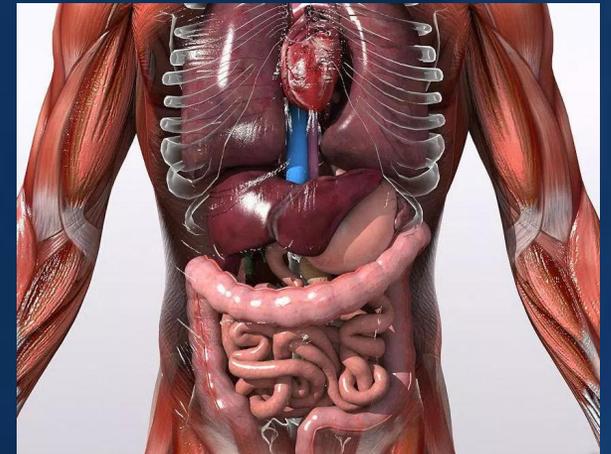
INTRA-ABDOMINAL UPPER ABDOMINAL LUMP

MOVEMENT WITH RESPIRATION

- Liver
- Spleen

“BORROWED” MOVEMENT WITH RESPIRATION

- Stomach
- Transverse Colon



LIVER

- Why liver?
- Extent?
- Edge?
- Surface?
- Consistency
- Tenderness?
- Enlarged or Visceroptotic?
 - Percuss down and laterally to avoid bunched-up cartilages.

GALL BLADDER

- Why Gall bladder?
- Edges?
- Surface?
- Consistency?
- Tenderness?

SPLEEN`

- **Why Spleen?**
 - Edge; rounded with notch.
- **Size?**
- **Surface?**
- **Consistency?**
- *(Percuss over the left 9th, 10th & 11th I.C. space for your own sake!!!)*

STOMACH & COLON

- “Vicarious” movement because of proximity to the liver.
- Restricted movement due to the presence of a mesentery.



INTRA-ABDOMINAL LUMBAR LUMPS

- Large ascending colon or descending colon lumps.
 - Associated bowel symptoms.
 - Generalized symptoms.
 - Limited mobility.

INTRA-ABDOMINAL UMBILICAL REGION LUMP

- Tuberculosis of the Omentum and Small intestine.
- Stomach.
- Transverse Colon.
- Enlarged mesenteric lymph nodes.
 - Tuberculosis.
 - Lymphoma.
 - Metastatic.
 - Hyperplasia.
 - Sarcoidosis.
- Parasitic cysts.
- Ovarian cysts.
- Mesenteric and Omental Masses.
- Tumours of the stomach or small intestine (eg. GIST)

COMPARTMENTS

ANTERIOR ABDOMINAL

WALL

3



UPPER ANTERIOR ABDOMINAL WALL SWELLING

DD

- Epigastric hernia.
- Umbilical hernia/Paraumbilical hernia.
- Ventral hernia.
- Tuberculous abscess (cold abscess).
- Desmoid tumour.
- Rectus sheath haematoma.

TUBERCULOSIS OF THE ANTERIOR ABDOMINAL WALL

- Two forms of skeletal muscle involvement are recognized:
- In the first type the tuberculous process spreads into the muscle through direct extension from a neighbouring structure e.g. bone, joint, tendon, and lymph node.
- In the second type the spread is hematogenous.

TUBERCULOSIS OF THE ANTERIOR ABDOMINAL WALL

- The possible explanation for the rarity of muscle involvement in tuberculosis may be high lactic acid content, lack of reticulo-endothelial tissue in muscle, lack of lymphatic tissue and the abundant blood supply.

DESMOID TUMOUR

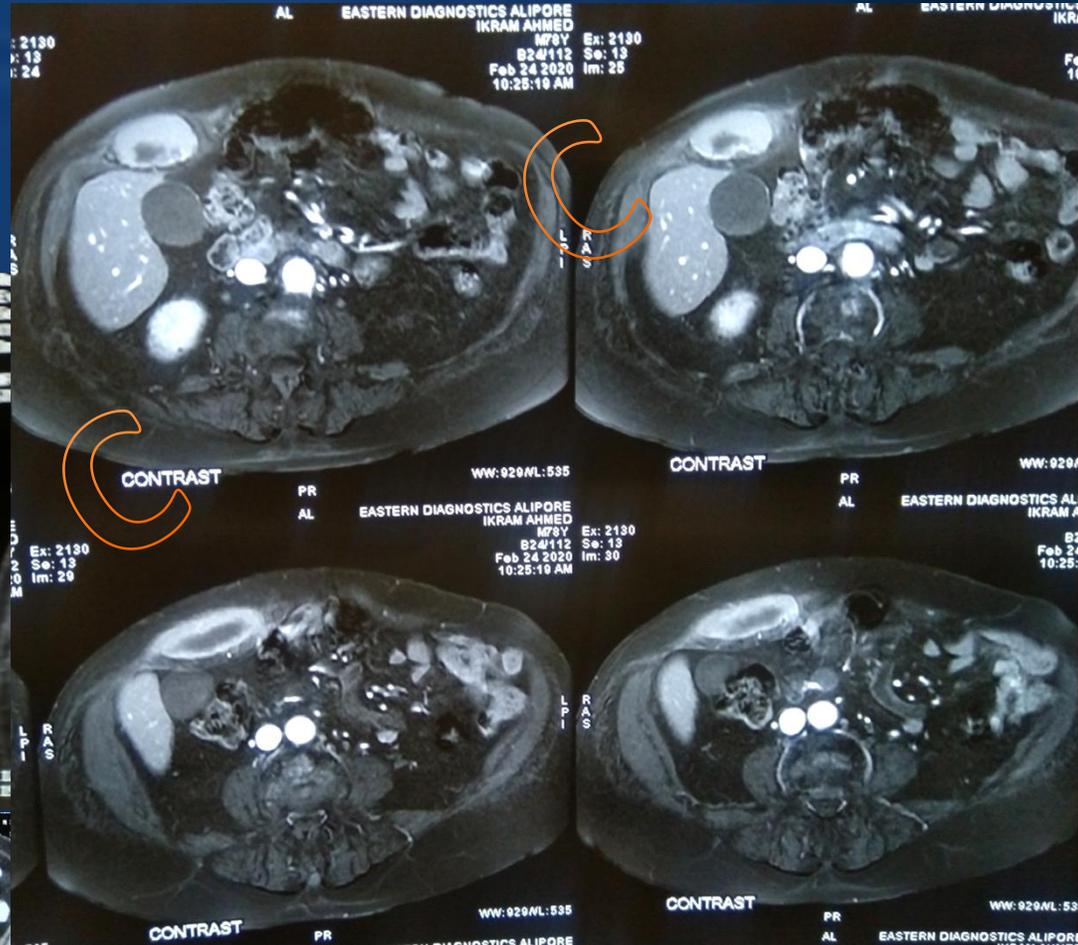
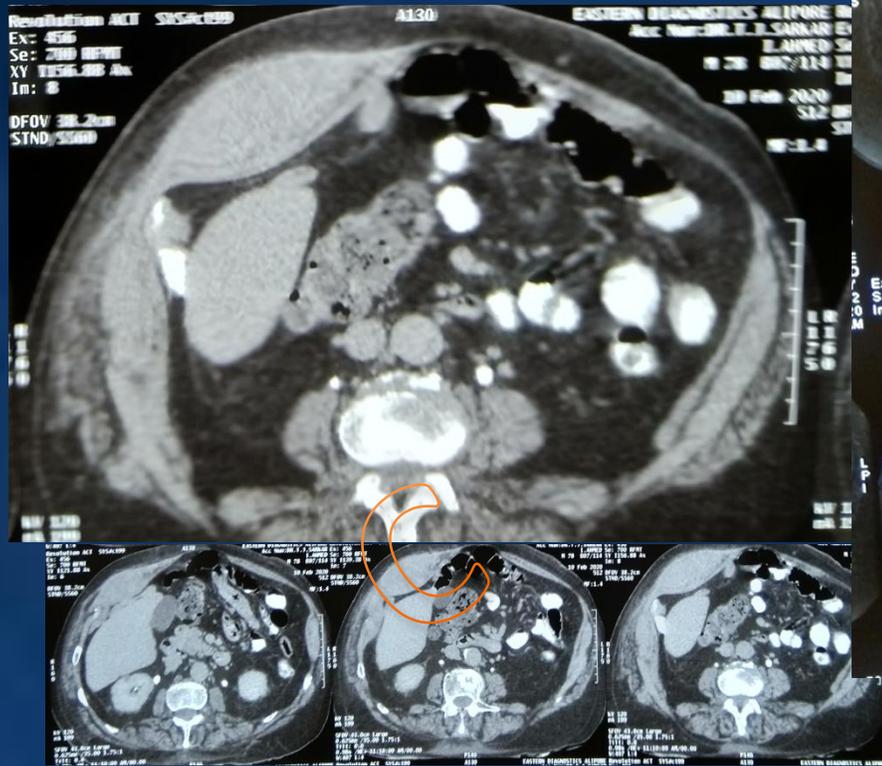
- Desmoid tumors most commonly arise from the rectus abdominis muscle in postpartum women and in scars due to abdominal surgery, they may arise in any skeletal muscle. Desmoid tumors tend to infiltrate adjacent muscle bundles, frequently entrapping them and causing their degeneration. They may be derived from mesenchymal stem cells

LUMP ABDOMEN

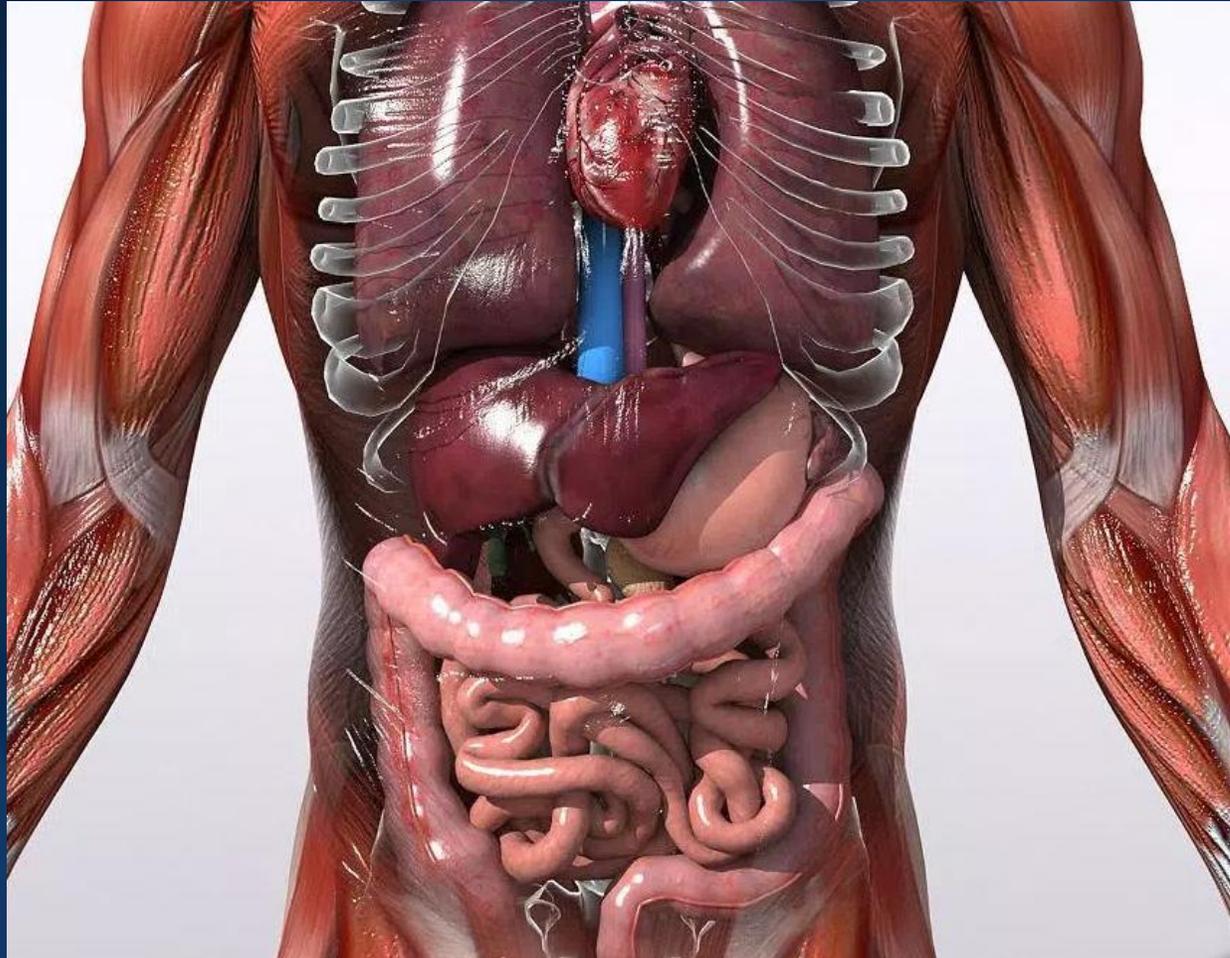
- 78 year old , presented with a lump in the upper abdomen, which was tender, globular, slight movement up and down with respiration.
- More prominent on lifting head.



RECTUS SHEATH HAEMATOMA



ALWAYS NEED – to visualise a 3D Anatomy



<https://apkpure.com/anatomy-3d-pictures/com.anatomypictures.farah/download?from=details>

Plexus Surgery App

PLEXUS SURGERY APP

