# MEDICAL DISORDERS: COMMON CLINICAL CASES

For Medical Students & House Officers
BY

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# ACKNOWLEDGEMENT

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**Dr Ihsanullah Saleemi**

**"William Osler"**

" There are only two sorts of doctors: those who practice with their brains, and those who practice with their tongues"

# CASE 1

# Bladder Calculi

• Calculus material in the bladder that does not pass with normal micturition

• Bladder outlet obstruction most common etiology in U.S.

• Benign prostate hyperplasia (BPH) in men

• Cystocele (bladder prolapse) in women

## Work Up:

• UA and urine culture (treat any associated infection)

• Pelvic U/S readily diagnoses most bladder calculi

• CT stone search (non-contrast) has excellent sensitivity and specificity for upper and lower tract calculi

• KUB often fails to demonstrate radiolucent stones (uric acid, ammonium acid urate)

• IVP or contrast CT needed only if cancer suspected

## Urology Referral

• Definitive therapy as soon as imaging study done and infection treated (if necessary)

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# CASE 2

# A 50 YEARS OLD MAN WITH CHEST PAIN

Scenario: A 40 years old teacher visits your ED for complaints of acute chest pain. He has previous such episodes occurring on and off for the last 4 months but this time the pain is persistent for the last 4 hours. He is in the ED for further evaluation.

## HISTORY

1. Evaluate Pain: As a physician your primary concern in this patient should be to identify the chest pain of cardiac origin.

- Site.
- Onset.
- Character.
- Radiation.
- Associated symptoms.
- Timing/duration.
- Exacerbating factors.
- Severity.

2. It is important to elicit a prior history of angina. Many patients will describe exertional chest pain in the weeks preceding presentation. With angina or an acute coronary syndrome (ACS) the pain usually builds to a maximum over a few minutes rather than reaching its maximal intensity

instantaneously.

3. Pain due to myocardial infarction may be associated with one of following features:

- Sweating.
- Nausea.
- Vomiting.
- Breathlessness.
- Dizziness.

4. A Past Medical History of Stroke, Claudication, Angina or previous Myocardial Infarction.

5. Past history of Hypertension or Chronic Renal Failure.

## PHYSICAL EXAM

The presence of a tachycardia and hypertension are not particularly helpful if the patient is in pain or anxious. The clinical examination in patients

with angina or ACS is often normal. The following should be looked for:

- Arcus senilis – hypercholesterolemia (in patients under 50 years).

- Fundoscopy – hypertensive changes.

- Xanthelasma – hypercholesterolemia.

- Elevated JVP – heart failure.

- Carotid bruits – high probability of coexisting coronary disease.

- Cardiomegaly – heart failure.

- Hypertrophied apex beat – hypertension or aortic stenosis (AS). • Systolic murmur – AS or hypertrophic cardiomyopathy (HOCM) can give rise to angina.

- Diastolic murmur – aortic regurgitation (AR) associated with a type A dissection.

- Pericardial friction rub – pericarditis.
- Abdominal aorta – aortic bruit or aneurysm associated with generalised vascular disease.

- Femoral arteries/foot - pulses, evidence of peripheral vascular disease associated with coronary disease.

## INVESTIGATIONS

1. Blood Tests: The following standard investigations would be helpful:

- Full Blood Count (FBC).
- Electrolytes.
- Blood Glucose.
- Renal Function.
- Thyroid Function.
- Troponin/Creatinine kinase.
- Fasting Lipid Profile and Glucose.

2. Radiological Investigations:

- ECG
- Chest X-ray
- Echocardiogram

## DIFFERENTIALS

Angina pectoris

Acute myocardial infarction

Esophageal pain (reflux, spasm, inflammation)

Musculoskeletal

Pulmonary embolic disease

Cervical root compression

Aortic dissection

Chest wall pain

Pancreatitis

Cholecystitis

Anxiety disorders

## MANAGEMENT

The treatment and management should be aimed relieving the symptoms of Cardiac Pain and preventing further Myocardial Injury.

- Oxygen.
- Aspirin 300 mg orally, followed by 75 mg daily.
- Sublingual or intravenous GTN if in pain.
- Clopidogrel 300 mg orally, followed by 75 mg daily.
- Low - molecular - weight heparin (weight adjusted).
- Beta blockade.
- IIb/IIIa antagonists.
- Statin therapy.
- Insulin infusion.

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# CASE 3

# Epididymitis / Orchitis

• Clinical syndrome characterized by inflammation of the epididymis and/or testicles (orchitis rarely exists in the absence of epididymitis).

• Painful swelling in the scrotum, usually severe and develops rapidly over 24 to 48 hours (may be even more acute).

• Often associated with dysuria or irritative voiding symptoms

• Prehn's sign: alleviation of pain with scrotal elevation (present with epididymo-orchitis, not usually with testicular torsion). Of note, cremasteric reflex remains intact, in contrast to its decrease with torsion.

• **Bacterial etiology most widely accepted:**

    • E. coli (children)

    • E. coli (homosexual men)

- Neisseria gonorrhoeae and Chlamydia trachomatis (heterosexual men less than 35 years old)

• Mumps orchitis rare due to immunization for mumps, occurring in post-pubertal boys older than 10 years, begins 4 – 6 days after onset of parotitis

• Main differential includes testicular torsion and hemorrhage into an occult testicular tumor

**Work Up:**

• Diabetic screening (if adult male)

• Begin meticulous personal hygiene, keeping glans and foreskin clean and dry (soap and water daily, expose glans to air as often as possible)

• Topical antibiotics, antifungals, or steroids as indicated

• Biopsy of discrete lesion if topical therapy fails

**Urology Referral**

• Often associated with fever, reactive hydrocele, erythema of overlying scrotal skin, urethral discharge or voiding complaints as above, and elevated WBC count

• Digital rectal exam to check for prostatitis recommended

• Urinalysis often unremarkable

• Consider scrotal ultrasound with colorflow Doppler if torsion, tumor, or trauma suspected

• Antibiotics, bed rest, analgesics and/or anti-inflammatory agents and scrotal elevation are usually effective

• Extend antibiotic course as needed if prostatitis present also (minimum 30 days therapy for prostatitis)

• Always treat the sexual partner if suspected secondary to an STD. Prostatitis and epididymo-orchitis are not themselves considered STDs.

• Patients may require hospitalization for I.V. antibiotics if systemically ill

• Consider follow-up scrotal ultrasound if no resolution with appropriate antibiotics (rule out abscess).

# CASE 4

# A 52 YEARS OLD MAN WITH ATYPICAL CHEST PAIN

Scenario: A 52 Years old man that complains of chest pain related to meals and exertion. The General Practitioner (GP) referred him to a cardiologist to rule out angina. His ECG was normal. The Exercise Tolerance Test was negative for ischemia. He had a diagnostic angiogram with normal coronary arteries but the chest pain persists. A chest X-ray showed normal lung fields and no bony abnormalities. Thyroid function tests and an autoimmune screen were normal. He has been referred to you to exclude a gastrointestinal cause of his chest pain.

## HISTORY

Describe the Chest Pain:

- Was the pain retrosternal burning sensation?
- Does the patient feel any acid or reflux in his mouth?
- Is there any bitter taste?
- Is there relief with antacids?
- What is the duration of his symptoms?
- Has he had similar symptoms in the past?
- Did they resolve spontaneously or require treatment?
- What is the frequency and severity of these symptoms?
- Are they getting progressively worse?

## PHYSICAL EXAM

- Look for evidence of weight change, especially weight loss.
- Look for conjunctival pallor of anemia.
- Inspect the mouth for evidence of acid erosion on his teeth and smell of halitosis.
- Palpate for cervical lymphadenopathy and goiter of hyperthyroidism.
- Examine the chest for evidence of cardiovascular or respiratory disease.

## INVESTIGATIONS

- ECG
- Investigation is only needed in the presence of alarm symptoms or if they are frequent and severe or progressive.

## MANAGEMENT

1. General measures should be the 1st line of treatment followed by drugs.

2. Dietary Interventions:

- Small & Regular Meals
- Reduce Fatty Foods
- Eat early in the evening

3. Lifestyle Modifications:

- Avoid Coffees and hot beverages
- Raise the head during sleep
- Exercise regularly

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# CASE 5

# Hydrocele (Adult and Pediatric)

• Collection of serous fluid within the tunical vaginalis, either congenital or acquired

• Congenital: Failure of the processus vaginalis to close completely following testicular descent results in a “communicating” hydrocele. Closure of the canal with fluid present results in a “non-communicating” hydrocele.

• Acquired: May be primary (idiopathic) or secondary to disease of the testis (association with infection, torsion, or trauma usually involves pain)

**Work Up:**

• Transillumination in the office favors simple hydrocele, but is NOT diagnostic

• Testes must be palpated bilaterally to rule-out undescended testis and attempt to feel for testicular mass

• Groin must be examined for evidence of inguinal hernia

• Lab: UA / C&S if epididymitis suspected

• Tumor markers (quantitative HCG, LDH, alphafetoprotein)

• Scrotal ultrasound documents condition, location, and size of testes as well as documenting nature of hydrocele fluid and absence of tumor. Presence of testicular blood flow on colorflow Doppler assures viability of testis.

• Adults are referred to urology only if hydrocele causes discomfort or cosmetic concerns, or if there is significant underlying cause (i.e. tumor).

• Children are referred to urology if hydrocele fails to resolve by the age of two years, or if a hernia is felt to be present.

## Urology Referral

• Intractable pain despite optimized analgesic medication

• Recurrent UTI's

- Persistent bleeding
- Stone in solitary kidney
- Immune compromised patient
- Chronic steroid use
- Diabetic
- Stone > 6 mm in diameter
- Intractable nausea and vomiting
- Urosepsis
- Elderly / debilitated patient
- Clot or debris in renal pelvis, or perinephric abscess on studies

# CASE 6

# Nephrolithiasis

• Formation of crystalline stones within the urinary collecting system, with potential complications of urinary obstruction, infection, and hematuria

• After an initial episode, incidence of recurrence is 50% over the next 10 years

• Males affected more often than females (3:1)

• Infected stones more common in females (3:2)

• Prevalence highest in Europe, North America and Japan (high intake of refined carbohydrate with low intake of crude fiber)

• Pathophysiology remains poorly understood. Involves supersaturated urine, lack of sufficient urinary inhibitors (i.e. citrate), and / or presence of matrix (noncrystalline mucoprotein) in the urinary system.

• Most common types are calcium oxalate, calcium phosphate, or a combination of the two (account for over 90% of all stones), followed by uric acid, struvite (associated with infection) and

cystine (hereditary) which together account for less than 10% of all stones.

• Most common risk factor is low oral fluid intake. Medications associated with urolithiasis include: acetazolamide, antacids, protein supplements, triamterene, vitamins C and D, indinavir.

**Work Up:**

• Detailed history, including number of prior stones, urinary infections, calcium and fluid intake, occupation, symptoms of hypercalcemia, hypertension, and renal failure.

• Urinalysis, with attention to urine pH, hematuria, and evidence of infection (nitrite, leukocyte esterase)

• Serum calcium, phosphorus, electrolytes, uric acid, creatinine (Parathyroid hormone) if calcium is high

• Spiral CT (usually ordered as "stone search CT") is excellent at detecting both radio-opaque

stones and radiolucent stones (i.e. uric acid). Either spiral CT or IVP with tomograms should be used to evaluate patients with acute renal colic.

• IVP with tomograms allows qualitative evaluation of renal function and excellent localization of ureteral calculi. Delayed films must be carried out until ureter is visualized down to the offending stone. Requires normal creatinine and involves intravenous access and exposure to intravenous contrast.

• KUB will miss radiolucent stones (uric acid, indinavir); ultrasound can detect and localize stones but is often inaccurate in determining stone size.

• Greater than 90% of stones <4 mm pass spontaneously, 50% of stones between 4- and 8-mm pass spontaneously 10% - 50% of stones >8 mm pass spontaneously

## Urology Referral

• Intractable pain despite optimized analgesic medication

- Recurrent UTI's
- Persistent bleeding
- Stone in solitary kidney
- Immune compromised patient
- Chronic steroid use
- Diabetic
- Stone > 6 mm in diameter
- Intractable nausea and vomiting
- Urosepsis
- Elderly / debilitated patient
- Clot or debris in renal pelvis, or perinephric abscess on studies

# CASE 7

# A 70 YEARS OLD WOMAN WITH PROGRESSIVE DYSPHAGIA

Scenario: A 70 years old lady visits your clinic for complaints of heartburn and reflux that has progressed over the last four months but it has now become difficult for her to swallow certain foods now. She is at your clinic for further evaluation.

## HISTORY

1. Level of Dysphagia: As a physician your primary concern in this patient should be to identify the level of dysphagia.

- Oropharyngeal Dysphagia: This level of dysphagia manifests as a difficulty to initiate swallowing.

- Esophageal Dysphagia: In this level, the initiation is alright but there is difficulty in swallowing seconds after initiating a swallow.

2. Type of Dysphagia:
- Liquids: A Pharyngeal cause
- Solids: A Mechanical cause
- Solids & Liquids: Esophageal Dysmotility

3. Duration of Dysphagia:
- A short progressive history points towards malignancy.

- Intermittent History of symptoms points to esophageal dysmotility, eosinophilic esophagitis or an esophageal web.

4. Past History of gastro-esophageal reflux (GERD), Barrett's esophagus, peptic stricture or esophageal web.

5. Past history of systemic sclerosis.

6. Past history of a neurological disorder.

## PHYSICAL EXAM

1. General Examination: Check for dehydration or weight loss. Inspect mouth, teeth and dentures for signs of acid erosion.

2. Abdominal Examination: Inspect and palpate for an abdominal mass and organomegaly.

## INVESTIGATIONS

1. Blood Tests:
    - Complete Blood Count with Peripheral Smear and Iron Panel (studies).
    - Urea and Electrolytes including Calcium
    - Liver Function Tests (LFTs)

2. Radiological Investigations:
    - Chest X-ray
    - Barium swallow
    - Upper endoscopy

## DIFFERENTIALS

Esophageal Carcinoma
Peptic Stricture
Severe Esophagitis
Esophageal Web.
Schatzki Ring.
Esophageal Dysmotility

## MANAGEMENT

The treatment and management should be aimed relieving the symptoms of dysphagia.

1. Surgery: If surgical resection of the tumor is required (In case of Carcinoma).

2. Chemotherapy.

3. Radical Radiotherapy.

4. Palliation of symptoms: The most appropriate treatment in most cases.

- Endoscopic Dilatation of the Malignant Stricture
- Palliative Chemotherapy
- Palliative Photodynamic Therapy
- Palliative Radiotherapy

# CASE 8

# A 70 YEARS OLD MAN WITH FATIGUE, WEIGHT LOSS AND ALTERED BOWEL HABIT

Scenario: A 70 Years old man has been referred to your outpatient clinic complaining of weakness, and general malaise. The symptoms have persisted and aggravated. He describes loose bowel motions for the last few months and has lost 10 kg in weight

## HISTORY

1. Fatigue: Apply the ODIPARA (Onset, Duration, Intensity, Progression, Aggravating Factor, Relieving Factors &Anything Else???) Mnemonic.

2. Weight Loss: How much has occurred and over how long? An associated loss of appetite is important.

3. Diarrhea: Apply the ODIPARA (Onset, Duration, Intensity, Progression, Aggravating Factor, Relieving Factors &Anything Else???) Mnemonic.

- For any fluid that comes out of the body ask the following questions: Color, Stained, Blood and amount.

## PHYSICAL EXAM

1. General examination: Look for signs of dehydration such as dry mucus membranes.

- Eating, Nocturnal Symptoms (reflux), bending/stooping (reflux) and exertion (cardiac).
- loss. Does she look malnourished?

2. Abdominal examination: Look for visible peristalsis. Can you elicit a gastric succussion splash of obstruction?

- Abdominal Mass.
- Abdominal tenderness in any of the Abdominal Quadrants.
- Auscultation for a 'succussion splash' suggestive of outlet obstruction.

## INVESTIGATIONS

1. Blood Tests:
    - Complete Blood Count
    - Liver Function Tests
    - C Reactive Protein
    - serology

2. Radiological Investigations:
    - Abdominal Ultrasound
    - Upper endoscopy

- Histology

## DIFFERENTIALS

Coeliac disease.
Chronic pancreatitis and pancreatic insufficiency.
Colorectal cancer.
Inflammatory bowel disease, especially Crohn's disease.
Small bowel bacterial overgrowth.
Bile salt malabsorption.

## MANAGEMENT

A gluten-free diet is currently the only treatment for coeliac disease. You should arrange a consultation with a dietician to discuss the components of a gluten free diet and the importance of strict adherence.

- Serology should be rechecked to confirm response after 3–6 months. Some clinicians advocate repeat endoscopy and biopsy to ensure histological resolution of the disease with reversal of

villous atrophy. However, histology can take up to 12 months to resolve.

- If symptoms suggest intolerance to milk products, a lactose breath test should be done. Fifty percent of patients have secondary hypolactasia at diagnosis

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# CASE 9

# A 30 YEARS OLD WOMAN WITH CHRONIC DIARRHEA

Scenario: A 30 Years old has had an increased frequency of bowel opening, up to five times a day, abdominal pain and general malaise for the last 6 months. The symptoms are aggravating and she seems concerned. She is now at your clinic for further evaluation

## HISTORY

1. Diarrhea: Apply the ODIPARA (Onset, Duration, Intensity, Progression, Aggravating Factor, Relieving Factors &Anything Else???) Mnemonic.

- For any fluid that comes out of the body ask the following questions: Color, Stained, Blood and amount.

## PHYSICAL EXAM

1. General examination: Look for signs of dehydration such as dry mucus membranes.

- Eating, Nocturnal Symptoms (reflux), bending/stooping (reflux) and exertion (cardiac).
- loss. Does she look malnourished?
- Check for anemia.
- Check for weight change.
- Feel for lymphadenopathy, especially supraclavicular lymph nodes of gastric carcinoma (Virchow's node).

2. Abdominal examination:

- Feel for palpable masses such as an inflamed terminal ileum and caecum in Crohn's disease, or a thickened loop of distal colon in ulcerative colitis.
- Feel for organomegaly
- Anorectal examination
- Digital rectal examination and proctoscopy can reveal anal fissures, hemorrhoids and anal or distal rectal cancer.

## INVESTIGATIONS

1. Stool chart: document the frequency and consistency of the stool, and the presence of blood in the stool.

- Macroscopic examination: determine if there is blood or mucus in the stool.
-
- Microscopic examination: look for traces of blood and excessive numbers of inflammatory (white blood) cells.

- Stool culture: to detect bacterial pathogens such as Salmonella.

2. Standard blood tests:
    - Complete Blood Count
    - Liver Function Tests
    - C Reactive Protein
    - serology

3. Specialized blood tests:
    - Anti-S. cerevisiae antibody (ASCA)
    - Antibodies to gliadin peptides (anti endomysial antibody)
    - Anti-tissue transglutaminase (anti-tTG antibody)

4. Radiological Investigations:
    - Abdominal Ultrasound
    - Upper endoscopy with Biopsy
    - Colonoscopy with biopsy
    - Histology
    - Plain abdominal radiographs
    - Barium Meal and follow-through

- CT and magnetic resonance imaging (MRI) scanning

## MANAGEMENT

The modern day IBD treatment is targeted at concealing safe reaction towards so far unknown antigens, and customary treatment that includes 5-aminosalicylic acid (5-ASA), thiopurines, corticosteroids and methotrexate. Although a complete cure for IBD is not yet available but ongoing revelations in the field of neurosciences and immunology have uncovered that signals in the fringe sensory system direct irritation, including levels of TNF-α show promising results. Clinical examinations utilizing vagus nerve embedded triggers for IBD treatment show empowering results. As needs be, the reflex control (neural) of aggravation is developing as a possible remedial objective in treating IBD. Here, we audit available and current treatment choices. These include the use 5-ASA, Glucocorticosteroids, Methotrexate and Thiopurines

- Stop smoking
- 5-Aminosalicylates

- Corticosteroids
- Thiopurines
- Biological agents
- Surgery

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# CASE 10

# A 30 YEARS OLD MAN WITH CONSTIPATION

Scenario: A 30 Years old visits your clinic for severe constipation. He feels bloated, has abdominal pain and has gained weight. He has tried home remedies with no improvement. He is here for further evaluation and checkup

## HISTORY

1. Constipation: Apply the ODIPARA (Onset, Duration, Intensity, Progression, Aggravating Factor, Relieving Factors &Anything Else???) Mnemonic.

- For any fluid that comes out of the body ask the following questions: Color, Stained, Blood (dark or fresh) stained or not and frequency

## PHYSICAL EXAM

1. General examination: Look for signs of dehydration such as dry mucus membranes.

- Eating, Nocturnal Symptoms (reflux), bending/stooping (reflux) and exertion (cardiac).
- loss. Does she look malnourished?
- Check for anemia.
- Check for weight change.

- Feel for lymphadenopathy, especially supraclavicular lymph nodes of gastric carcinoma (Virchow's node).

2. Abdominal examination:
    - Feel for palpable masses
    - Feel for organomegaly

3. Digital Rectal Examination

## INVESTIGATIONS

1. Standard blood tests:
    - Complete Blood Count
    - Liver Function Tests
    - Serum Electrolytes

2. Radiological Investigations:
    - Abdominal Ultrasound
    - Flexile Sigmoidoscopy
    - Plain abdominal radiographs
    - Histology
3. Urine Investigations:
    - Beta HCG

## MANAGEMENT

- High Fiber Diet, Laxatives and increased Fluid Intake.
- Correct Electrolyte Imbalance (if present)