Paeds Abdominal Pain

Dr Ashita

Case 1

- You are in a GP clinic, 16-year-old boy is presenting with tummy pain.
- **Tasks:** -
- Take relevant history
- Tell the patient most likely Dx
- Discuss management

Coeliac disease

- Hemodynamic stability
- Pain questions
- severity + pain killers and allergy
- duration, constant or come and go, getting worse (for 6 weeks or 2 months)
- site, radiation (around belly button, no radiation)
- character
- relieving and aggravating? If related to food? If pain-relieving by-passing stool?

- 1st episode (yes)
- **Associated symptoms questions**
- Nausea and vomiting?
- Urine problems?
- Bowel motions?
- Diarrhea, constipation or alternating? (Diarrhea +ve)
- Duration?
- How often do you pass stool per day? (4 times a day)
- Are you passing large amount of stool?

- Is the stool hard, lose or watery? Greasy or bubbly? sloppy, greasy
- Any blood, pus or mucus?
- What‘s the colour? Is it pale?
- Is it smelly?
- Is it hard to flush? yes
- Do you have to race to the toilet to pass stool? (urgency-IBD & IBS)
- Does it wake you up at night? No (+ve in IBD)
- fever? no (+ve in Giardiasis)

- rash, joint pain? (IBD)
- LOW, LOA, lumps
- **General** -medications, antibiotics
- PMH, PSH -typical daily diet + family history of similar problem or special diet
- travel, contact (Giardiasis)
- stress in life or perfectionist (IBS)

- **Explain diagnosis.**
- Most likely, you have coeliac disease have you heard about it?
- This is malabsorption disease when the bowels become sensitive to a specific substance present in diet called gluten.
- So, whenever the bowels exposed to gluten, it becomes inflamed causing tummy pain.
- Also, the bowels cannot absorb the food properly due to the inflammation causing frequent bowel motions and having pale and greasy stools.

DDx

- IBD
- Giardiasis
- IBS
- Lactose intolerance
- UTI
- Medication like antibiotics
- Gastorenteritis (unlikely with a chronic history)

Management

- Investigations-
- Stool MCS, FBC, LFT, UCE -Celiac screen (antigliadin, anti-endomysial, tissue transglutaminase)
- Refer to GIT specialist for duodenal biopsy (say take a sample of tissue from the first part of the gut) to confirm the condition.
- Main treatment is to eliminate gluten from diet.

Case 2

- You are working a s a GP, A 14-year-old boy comes to you with complaints of tummy pain and tiredness.
- **Tasks:**
- History
- Physical examination
- Investigation
- Management

Addison disease

- Fatigue
- N/V/anorexia
- Weight loss
- Skin discoloration - skin and mucosa
- Abdominal pain
- Dizziness
- Syncope/postural hypotension
- Myalgia and weakness

- **Signs:** generalized pigmentation especially in the palmar creases, buccal and tongue pigmentation, postural hypotension, wasting of muscles, and other signs of autoimmune diseases
- Causes:
- Auto-immune (Australia and UK most common cause)
- Infections (worldwide: tuberculosis)
- Cancers
- HIV
- Lymphomas
- Drugs (heparin)
- Depression

History

- Tummy pain- all pain questions
- Tiredness questions
- Do you feel anxious? Any sweating? Palpitation? Tremors? Weather preference? Do you feel thirsty or go to the toilet more frequently?
- Any cough, chest pain
- Headache?
- Dizziness?
- Nausea, vomiting
- Did you notice the skin pigmentation? Any relation to sun exposure or tanning?

- Can you tell me the distribution of pigmentation? Is it getting darker?
- When did you start feeling lethargic? Did you notice any weight loss? How much? Any change in appetite?
- Any history of drug ingestion?
- PMHx: if significant
- FHx: any autoimmune disease?
- SADMA?
- Any lumps and bumps

PEFE

- General: pigmentation (distribution): all over the body, darker on the palms and mucous membranes of mouth
- muscle wasting; pallor, dehydration, jaundice; LAD
- Vitals: BP (110/70 sitting, 90/50 standing), pulse: 90 sitting, standing 120; T, RR and O2 normal
- Neck examination: thyroid, LN
- Chest, heart and abdomen (+ organomegaly)
- Urine dipstick; BSL

Investigations

- To confirm the diagnosis, I would like to do some investigations.
- FBE, BSL, Urea and electrolyte **(low sodium and high potassium)**
- ACTH stimulation test (do serum cortisol level and ACTH and they give synthetic ACTH and measure level of cortisol again to see if adrenal gland responds to ACTH or not)
- If responsive: cortisol increases
- If unresponsive: no change or low
- ACTH level (raised)
- plasma renin (measured by direct concentration or plasma renin activity)- raised
- CT abdomen

Management

- You have a condition called Addison disease which not uncommon. There is a problem in one of your body glands called adrenal glands.
- There is the destruction of adrenal cortex leading to deficiency of cortisol.
- Nowadays, the major cause is autoimmune disorder wherein the body produces antibody against your own tissues (adrenal cortex).
- We need to admit you to the hospital and replace with hydrocortisone.
- You would be seen by an endocrinologist.

- They will start with **IV Hydrocortisone** (20 mg in AM and 10 mg PM) and you will need to supplement orally lifelong.
- If postural hypotension is not controlled, they would consider giving mineralocorticoid **(Fludrocortisone).**
- I would advise you to wear a medical alert bracelet.
- You should carry a cortisol card in your bag.
- You need to keep cortisol injection at home for emergency.
- Do not stop medications by yourself.

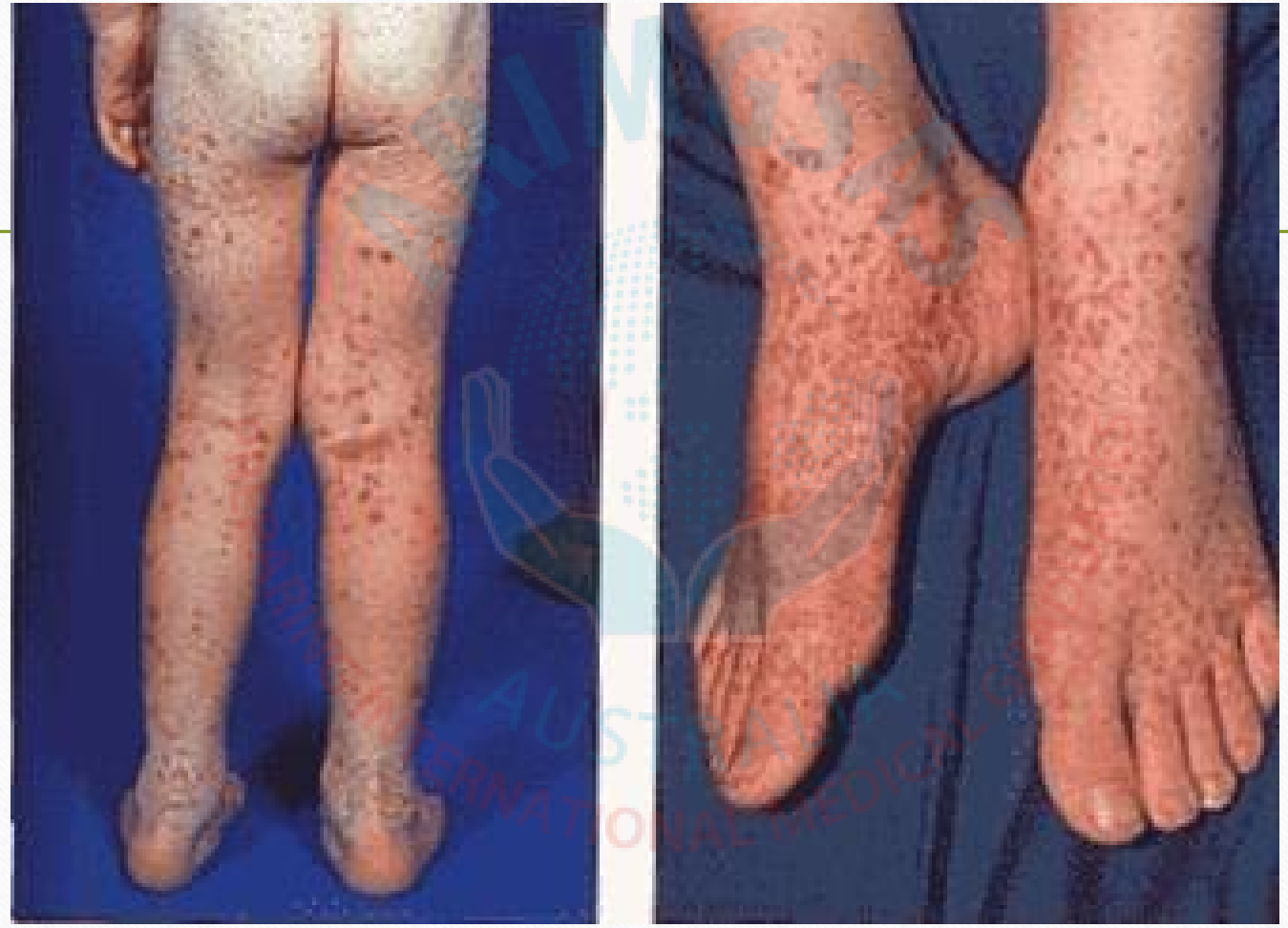
- You need to be followed up by GP regularly.
- If you have any infection or any kind of stress or trauma, you need to visit a doctor immediately because that can lead to Addisonian crisis.
- Red flags:
- Addisonian Crisis: severe abdominal pain, nausea and vomiting, dizziness, sweating and palpitations, weakness, drowsiness
- Report to the ED immediately

Tiredness mnemonic

- H- haemochromatosis (tanning of skin but spares the oral mucosa)
- E- endocrine- diabetes, thyroid disorders, addisons (darkening of skin and oral mucosa)
- M- malignancies
- I- infecions- infectious endocardidtis, atypical pneumonia
- F- chronic fatigue syndrome
- A- anemia
- D- drugs, depression
- C- celiac disease
- P- pregnancy, menopause

Case 3

- 5-year-old Adam has a red rash over buttocks and legs since 4 days. Has some pain in legs and abdomen. He was limping since 3 days. He is now active and afebrile. Had URTI 10 days ago. Father is here now.
- **Tasks:**
- Explain diagnosis
- Explain investigations you want to order, and examiner will give you specific ones.
- Counselling and education



HSP

- **Explain diagnosis (5C)**
- Your child (call by their name) is most likely having is a condition called HSP. Have you heard about it?
- **Condition** This is an inflammation of small blood vessels of the body for example the skin, causing rash. It can also involve small blood vessels of the kidneys, intestine or very rarely lungs and the brain
- **Commonality**- This is a common condition in children aged 2-10 years

- **Cause** The cause is usually unknown.
- However, it is usually an autoimmune disease usually triggered by the viral infection he had 2 weeks ago.
- So normally, our body produces certain substances called antibodies to fight infection.
- In HSP these antibodies are attacking own body tissues and the small blood vessels.
- **Clinical features** It can cause rash, limping, joint pain, and tummy pain

- **Complications**
- Its outcome is good with treatment.
- As this condition can also affect the kidneys it can cause haematuria or blood in urine, proteinuria or leakage of protein in the urine and high blood pressure.
- Also, it can affect the gut causing abnormal folding of the bowels leading to obstruction that is why we need to keep an eye on him. (intussusception)

- **Investigation** -So that I need to admit to hospital to be seen by a child specialist, and I am going to run some investigation to rule out other possibilities like meningitis, leukemia and ITP.
- **I need to order:** -urinalysis looking for protein and blood.
- FBC, UCE, Coagulation profile stool analysis looking for blood imaging like US -I just need to talk to the examiner for the investigation results.
- Is that all right? (Examiner will give you card Blood shows normal platelets, urine showed RBCS)
- Explain report with the mother or father

Counselling and education

- Is it a Meningitis? -it is unlikely, because from history and examination he has no fever, no headaches, no neck stiffness or confusion.
- Is it leukemia as his elder brother has leukemia? -the blood picture is not suggestive of leukemia because in leukemia we will have decrease in RBC, WBC and platelets causing pallor, bleeding or bruising and fever which your child is not having.
- Reassure again and tell others less likely.
- We will give him analgesic for the pain (paracetamol or ibuprofen)
- The specialist might give him steroids only for a few days so that try not to worry about any side effects.
- We will monitor him regularly measuring his blood pressure and doing urinalysis.

- This disease is of good outcome, usually resolve within 4 weeks.
- **Red flags:** -tummy pain within 2 days, -joint pain within 3 days, -rash can last for 4 weeks, -he will need regular follow up by his GP for the first 6 months, -Reading materials

- **Urinalysis** is usually the only investigation needed in a classic presentation of HSP
- If there is hypertension, macroscopic haematuria or significant proteinuria:
- Formal urine microscopy and urinary protein-creatinine ratio (UPCR)
- Bloods for urea/electrolytes/creatinine (UEC) and albumin
- In some instances further investigations may be required to rule out differentials if the diagnosis is unclear for example ITP, leukaemia, (see also fever and petechiae) or to identify potential complications of HSP. These may include:
- FBE, UEC, albumin, IgA (kidney biopsy in case haematuria).
- Blood and urine culture
- Abdominal imaging
- ANA, dsDNA, ANCA, C3/C4 if significant renal involvement with an unclear diagnosis

- HSP is characterised by **palpable purpura** with arthritis/arthralgia (~50-75%), abdominal pain (~50%) and/or renal involvement (~25-50%) (haematuria/proteinuria/hypertension)
- The clinical manifestations of HSP can take days to weeks to fully develop and may vary in order of appearance
- Purpura occurs in all patients but is the presenting complaint in only 75% of cases
- Significant abdominal and renal complications can occur and need exclusion
- Pulmonary and neurological involvement are both rare but may be life-threatening if present

- **Follow-Up**
- Regular GP or paediatrician review is critical to identify subsequent renal involvement which rarely requires a renal biopsy +/- immunosuppression
- If the initial urinalysis is normal or only reveals microscopic haematuria, review clinically and check BP/early morning urinalysis at these recommended time intervals:

- Weekly for the first month after disease onset
- Fortnightly from weeks 5-12
- Single reviews at 6 and 12 months
- The development of hypertension, proteinuria or macroscopic haematuria at any point should prompt paediatric review with investigations (outlined above) and ongoing follow-up based on results

- Discussion with a Renal specialist is recommended if there is:
- Hypertension
- Abnormal renal function
- Macroscopic haematuria for 5 days
- If there is no significant renal involvement plus normal urinalysis at 12 months, no further follow-up is required.

Case 4

- 6 weeks old baby crying, and his mother concerned.
- **Tasks:**
- Take history
- Physical examination card
- Diagnosis and differential diagnosis

Colic

- **Crying questions (= tummy pain)**
- Since when? How often? (Since he was 2 weeks of age, every 3-4 hours)
- Is he crying more in the day, night or both? (All day but mostly in the evening)
- Is it getting worse? -How does it affect his sleep? -Is he drawing up his legs while crying? (No)
- Does he turn pale or blue while crying? (No)
- Anything make it better or worse? (No)
- Is this the first time? (Yes)
- **Vomiting questions** (no) - Any vomiting? - Does he throw up milk all the time? (to rule out reflux)
- **Bowel questions** (all normal)

- Any problems with motions? Any diarrhea or constipation? - Any bloody stools?
- Is you child burping? Is your child winding well? Have you change your diet recently?
- **Any fever, rash, ear discharge?** (No)
- **Dehydration questions** - Is he alert, drowsy or sleepy? (Normal)
- Are the number of wet nappies as usual or reduced? Any change in the colour of urine? Is it smelly? Crying on passing urine? (Normal)
- Is he feeding well? Does he breast or bottle feeding? How often? (She thinks it is enough but her mother-in-law saying that she did not feed the baby well, so she stressed out)

- **Key questions** - Has he had any recent flu or infections? (intussusception) (No)
- Any lumps or bumps in the body? (hernia) (Not sure)
- **BINDS** - Any problem with birth? (No)
- Is his Immunisation up to date? (Yes)
- **Is he/she thriving and growing well? (**Yes**)**
- Any siblings with similar symptoms? (No, he is my only child)
- Do you have enough support? (Live with husband who is working and not getting help from him)
- **How is your mood? Your sleep? (**postpartum Blue**)**

Infantile colic or Irritable Baby

- Thanks for the information, I just need to examine your child now I'll ask the examiner.
- **Examiner will give you card all normal except birth mark behind the neck.**
- I examined your child let me assure you that I could not find anything serious, all normal. I could find a birthmark behind the neck, but this is normal.
- Note, Infantile colic: episodes of crying more than 3 hours a day for more than 3 days a week in healthy baby.

- Most likely your baby has a condition called infantile colic.
- Normally babies cry on an average of 2-3 hours a day, in colic they cry excessively.
- Let me assure you that it is not serious, and it is common in this age group.
- Some babies are extra sensitive to various stimuli either internal like if baby is hungry, tired, or external such as noise, over heating or lighting.
- It is completely harmless and self-limiting condition; most likely disappear by 3-4 months of age.

DDx that need to be ruled out

- Reflux
- Urinary tract infections
- Gastro or infection of the gut
- URTI
- Otitis media
- Meningitis
- Intussusception
- Bowel obstruction
- Hernia

Management (not a task but just in case)

- It is advisable to maintain a cry diary and see if it is related to food or not.
- You can minimise environmental stimulation by having low-level background noise, soft lighting and comfortable temperature, take him for a ride in car as sometimes help.
- Continue breast feeding and space feeds to 3 hourly or more as sometimes it might be due to lactose overload
- Family meeting + social worker
- Red flags: any vomiting, fever, rash, bloody stool, looks unwell seek medical help.
- Review regularly
- Reading materials

5 Simple Steps to Cure Your Baby's Colic

Swaddle

Side or Stomach

Shush

Swing

Suck

CASE 5

You are an HMO in the hospital and your next patient is a 5-month-old boy presented with screaming and pallor. A lump is felt on the right side of the umbilicus.

Tasks:

- History
- Examination Finding from examiner
- Diagnosis and management

Intususception

- Stability
- Screaming- since when, on/off or continuous
- Anything makes it better or worse
- Vomiting Hx→tell more about it, when start, colour and amount, forceful/not, related to feed/food,
- Associated with lump and bump (tummy)
- **Intussusception Qs-**
- **Distension**
- **Passed wind (flatus)**

- **Draws up legs while crying,**
- **Turns pale while crying,**
- **Any abdominal distension,**
- **Colour of stool- is it red?**
- Appetite, lost weight, any diarrhoea/bowel motion (If present go in detail)
- UTI Qs- water works, any change in number of wet nappies, any foul smell while changing nappies, child cries while he pass pee
- Any fever?

- Rash (meningitis)
- Noticed any lump in the body especially groin area (r/o hernia)
- Lethargic
- Feeding and sleeping well
- BINDS→ support and how is she coping.
- Family Hx of urinary/kidney problem.
- Any new food?
- Recent Rota virus vaccine?

PEFE

- General appearance: alert/drowsy/irritable/lethargic
- Dysmorphic features
- PICKEL (pale while crying?, icterus, cyanosis, Klubbing, oedema, Lymph nodes)
- Rash –if yes –ask rash questions
- Skin pigmentation (CAH)
- Vitals: Pulse, temperature, BP, RR, Saturation (*Hypovolaemic shock is a late sign)*
- Growth Chart
- Signs of dehydration –CRT, skin turgor, sunken eyes, mucous membranes, Anterior fontanel

- Abdominal examination
- (Inspection –Distension?, Palpation-masses/sausage shaped mass?
- If he says no-ask when the child cries can I feel a mass? Emptiness in RIF? tenderness?,
- Auscultation –bowel sounds , alternating areas of high pitched bowel sounds and absent bowel sounds)
- *(sausage shaped mass RUQ or crossing midline in epigastrium or behind umbilicus, palpable in about two thirds of children.)*
- With Consent of parent -hernia orifice, genital examination, perianal inspection (ask all these if relevant for case)
- Examination of stool –can I see any red color stool? If he says no –ask when he cries , has he passed any red color stool?
- other systems: Respiratory, Cardiovascular, Abdomen, CNS
- Office tests: urine dipstick –ask any Leukocytes? Nitrites? RBCs? , Blood sugar level

Management

- Sliding one part of bowel into next part leading to obstruction. Common in children between 3 months to 3 years
- Emergency condition
- Call paediatric/surgical registrar.
- Admit, NPO, IV fluids. If required antibiotic is started by specialist.
- Inv: Xray and USG (Target sign & Crescent sign, to r/o obstruction also)
- Treatment by specialist (radiologist and paediatric surgeon): Air enema (Diagnostic and therapeutic)- general anaesthesia→ through a small tube placed at back passage, air is passed

- If it not relieved, surgery may be needed
- Complication are small chance of perforation and bacteraemia
- You are in safe hands now.
- We will do intervention ASAP/
- **pale child + severe 'colic' + vomiting = acute intussusception**

CASE 6

- A 5 month-old baby came to your GP clinic with his Father because of sudden onset intermittent screaming with a few episodes of vomiting. Older brother has got recent onset of gastroenteritis.
- Task
- History
- PEFE
- Diagnosis and management

Irreducible hernia

- *IN a case of ED setting –while you are out side think.. Should I ask about the hemodynamic stability? Do I need to admit or transfer this patient (if in a rural hospital)*
- **HISTORY**
- From examiner –is my patient **hemodynamically stable** to continue with history taking?
- I understand that you have come see me today because your child has been screaming and vomiting for past few hours.
- Can you please tell me more about it ?
- Ask about screaming episodes:
- Since when?

- Anything in particular happened before these episodes?
- Is it continuous or episodic?
- How many episodes?
- **Does he draws up his legs while crying? does he turn pale**
- Ask about vomiting-
- Since when?
- How many episodes?

- C **–colour, is it greenish? Any blood?**
- C - consistency
- V - volume
- O - odor
- **Forceful/projectile or not?**
- Relation to food?/feeding? How long After feeding?
- Is he hungry after the feeds?

- Other associated symptoms?
- Distension of the tummy?
- **Lump felt in tummy? Emptiness in RIF?**
- Fever/is he hot to touch? Rash?
- **Rule out Henoch schonlein purpura**–ask any proceeding respiratory tract infection or diarrhoea?
- Is This the first time?

- Well baby questions-
- How is the appetite, feeding, sleeping, activities/is he **lethargic**?
- Any weight loss?
- How is his/her water works? Change in number of wet nappies? Any abnormal smell when changing nappies?
- Does the child cry while passing urine?
- **Bowel habits?**
- **Has he passed any stool? Any loose stool or red color stool?**

- BINDS
- In Social history in BINDS ask –any other kids at home? (If she has other kids, and if there's no one to take care of them, in the management say that you will arrange a social worker for them)
- Past medical/Surgical history
- Family history
- Medication
- Allergies

PEFE

- General appearance: alert/drowsy/irritable/lethargic
- Dysmorphic features
- PICKEL (pale while crying?, icterus, cyanosis, Klubbing, oedema, Lymph nodes)
- Rash –if yes –ask rash questions
- Skin pigmentation (CAH)
- Vitals: Pulse, temperature, BP, RR, Saturation (*Hypovolaemic shock is a late sign)*
- Growth Chart
- Signs of dehydration –CRT, skin turgor, sunken eyes, mucous membranes, Anterior fontanel

Systemic Examination:

- **Abdominal examination**
- Inspection –**Distension**?
- Palpation-**masses**
- Tenderness?
- Auscultation –**bowel sounds**
- With Consent of parent -hernia orifice, genital examination, perianal inspection
- **Examination of stool** –can I see any red color stool?
- other systems: Respiratory, Cardiovascular, Abdomen, CNS
- Office tests: urine dipstick –ask any Leukocytes? Nitrites? RBCs? Blood sugar level

- Don't forget **Inguinal orifices (Firm, tender, irreducible, inguinoscrotal swelling) + genital inspection + Inspection of the rectum**
- **Symptoms of an incarcerated inguinal hernia -RCH**
- •child appearing ill
- •pain in the groin
- •nausea and vomiting
- •bloating or full abdomen
- •fever
- •Groin swelling that appears red or dusky in color and is noticeably tender
- •Groin swelling that does not change in size when crying.

- A hernia is protrusion of part of gut or fatty material through a weakness or opening in the tummy wall. It is usually seen as a bulge under the skin.
- In a simple hernia, the bowel and fatty tissue are able to move freely in and out of the defect. Called reducible hernia.
- If part of the bowel becomes trapped and cannot return to the tummy, it is at risk of having its blood supply cut off. This is then called irreducible / incarcerated hernia.
- So its an Emergency condition
- It is not uncommon

- Urgent referral to tertiary hospital > seen by specialist > do not feedthe child now
- In the hospital –I/V access>blood for investigations> I/V fluid and Surgery to reduce the hernia
- Don't forget 4 'R's (reading materials, review after been discharged from hospital….)
- Support!!

CASE 7

- 10 years old boy with pain in abdomen for 3 days, getting worse, your colleagues check vital sign and urine dipstick (ketones +++, no WBC, no RBC), BSL normal.
- **Tasks:**
- History
- Physical examination findings from examiner
- Most likely diagnosis
- Investigation with reasons

Abdominal trauma

- Positives- child has trauma to abdomen after fall from bicycle
- PEFE- bluish discoloration at hypogastrium, slight abdominal distention with sluggish bowel sounds

- Patients at risk include those with: -High impact / deceleration injuries; Direct blows to the abdomen; Evidence of injuries above and below the abdomen, suggesting the abdomen is unlikely to have been spared. -Seat-belt injuries (duodenum or pancreas).
- Bicycle handlebar injuries to upper abdomen (duodenum or pancreas). -Straddle injuries, astride a bar or beam (perineum, vagina or urethra).

History

- **Hemodynamic stability check**
- **Pain details** -How sever is his pain from 1 to 10? Offer pain killer after allergy question. (Very severe)
- When did it start? Suddenly or gradually? Constant or come and go? Is it getting worse? (For 3 days and getting worse)
- Can you point out exactly where the pain is? Does it go anywhere else? (The whole tummy)
- Can you describe it for me? anything make it better or worse? has this happened before? what was he doing when the pain started? Any history of trauma or injury? (Injury with bicycle crash few days back to his upper tummy)
- Was he wearing helmet, protective clothes? have you consulted any doctor at that time? (Pain was minor at that time that is why I did not consult to doctor immediately)

- **nausea and vomiting**
- Any nausea or vomiting? (Yes vomiting)
- Since when? (Last evening)
- How often? (Multiple times)
- What is the colour? Is it greenish? (No) –if the vomitus is greenish, then more likely it is a duodenal injury
- Any blood in it? (No)
- Does it affect his feeding? (Cannot tolerate food)
- **Fever and rash (No)**

- **Bowels and bladder**
- How is his waterworks? Any change in colour of urine? (No)
- How is his bowel motions? (Normal)
- **Ass. s/s:** -any Loss of consciousness, shortness of breath (no)
- **General**-medications -PMH, PSH

PEFE

- General appearance (PRINCCLED)
- dehydration (Painful distress, dehydrated) -rash, bruising, signs of trauma or injury (bruise in epigastrium)
- pallor (look pale)
- Vitals- BP- 90/60, PR- 102, RR- 18, SpO2- 99%, Temp- 37
- Abdomen -Inspection: wound, bruising, seat belt or handlebar marks, distension (bruise in epigastrium)
- Palpation: tenderness including pelvic tenderness/instability, guarding (tenderness + on epigastrium, no guarding or rigidity, murphy sign – negative, no liver dullness obliteration, no organomegaly).
- Auscultation: bowel sounds (Bowel sound is minimal)

- Inspection of the back, hernia orifices and genitals (hernia orifices intact, genitals normal)
- Urethral meatus for blood
- **urine dipstick already given in the stem, so don‘t need to ask again.
- Diagnosis and differential diagnosis **-Acute duodenal injury most likely**
- Other D/Ds or accompanying injuries to look for: -Pancreatic injury, Spleen injury -Liver injury, Bowel injury, Renal injury

EXPLANATION

- From history and examination, I suspect that at the time he got accident, he might have injured any organ inside the tummy.
- There are some organs around there (draw a pic): solid organs like liver on the right, spleen on the left, and pancreas in the middle and back, hollow organs like stomach, duodenum small intestine. Most likely, the 1st part of the small bowel or the duodenum is injured. Other possibilities could be an injury to the pancreas, spleen, liver, bowel or kidney. The bowel might have perforated.
- Need to order some investigations to find out more about problem. And call the specialist surgeon to come and see him

INVESTIGATIONS

- 1-Bloods: FBC, lipase/Amylase & LFTs, Crossmatch
- 2-Urine analysis: All abdominal trauma patients should have urine analysis done.
- 3-CT scan is the imaging modality of choice. Intravenous contrast, preferably supplemented by simultaneous oral contrast, is essential. Patients must be stable enough to move to CT scan.
- 4-X-ray. Only require supine and decubitus lateral / right-side-up abdominal X-rays if there is a suspicion of intestinal perforation. Will show air under diaphragm if intestinal, Will show ground glass appearance because of retroperitoneal haemorrhage in case of duodenal perforation.

CASE 8

Gp setting, 7 years old boy Ronnie was brought in by mom Julie complaining of abdominal pain for 8 weeks. On further questioning, Julie describes the pain as intermittent and mainly around the umbilicus sometimes severe enough that Ronnie had to miss school. Ronnie is otherwise well and had no significant medical or surgical problems. Ronnie lives with his parents at home and had started school this year

Tasks:

- Relevant focused history
- PEFE
- Dx and DDx
- Mx accordingly

Differentials

Organic

- Constipation
- Childhood migraine equivalent (pain with extreme pallor)
- Lactose intolerance
- Intestinal parasites
- Non-organic – psychogenic factors, anxious child, obsessive or perfectionist personality

- Features of organic pain-
- Periumbilical
- Radiates
- Wakes the child from sleep
- Associated with nausea and vomiting
- Child is not completely well between attacks
- Weight loss
- Failure to thrive

- Features of non-organic pain:
- Acute and frequent colicky abdominal pain
- Localized or just above the umbilicus
- No radiation
- Lasts less than 60 mins
- Nausea frequent and vomiting rare
- Diurnal (never wakes the child)
- Minimal umbilical tenderness

History

- Pain questions – where? How long? Continuous or off and on?
- How frequent? How severe?
- How does it look like? How long does each episode last? Any radiation?
- Any relieving or precipitating factor? (like passing motion relieves the pain?)
- Happen on weekends? Does it wake her up?
- Associated features – any nausea and vomiting? Diarrhoea? Any constipation?
- Changes in stool like blood or mucus? Any changes in urine? Any pain while passing urine? Any fever? Any rash?
- Turning pale? (abdominal migraine)

- BINDS
- Social - any recent changes or stress at home? (grandmother passed away with cancer)
- how is her relationship with her grandmother?
- who takes care of the child most of the time?
- How is her school performance?
- Is she generally an anxious child? Or a perfectionist? Family history of migraine?

- How is her school performance?
- Is she generally an anxious child? Or a perfectionist?
- Family history of migraine?

PEFE

- GA,
- Vitals,
- Growth chart
- Abdominal examination – Inspection, palpation, percussion, auscultation
- Hernia orifices and genital and anal area
- Other CVS and respiratory
- UDT

Non Organic Abdominal Pain

- Most likely Non organic or psychogenic abdominal pain. I haven't found anything pathological according to the history and examination.
- I would like to perform full blood exam, urine and stool test and USG to make sure that she is ok but they are likely to be normal.
- Our mind and body are connected together so whenever the mind is getting stressed the body can give such symptoms like tummy pain, headache or other symptoms.
- In her case, I found that she had a major change in life recently as beloved grandmother passed away.
- Her sadness is affecting on the body as abdominal pain which is a bodily symptom. This is very common situation.
- But the pain is real even though it is not serious

Management

- These kind of pain usually transverses childhood without ill effects.
- You can try simple measures like local warmth or rest for painful episodes.
- For life stresses like this, insight therapy will be helpful.
- I would refer her to psychologist for full assessment and counselling too.
- Reassure

Case 9

The father, John, of a 6 year old boy, Peter, comes to your GP surgery seeking your help because Peter's bowel habit has changed. He has been soiling his pants for several months and his friends have been teasing him for that. The parents did not realize the problem for quite a while because the boy goes to the toilet by himself and did not really need any help for a few years. Examination: +ve findings-

- **Abd Ex-Faecal mass in lower quadrant**
- **PR- anus normal with some faecal staining, no fissure,**
- **On rectal Examn- Rectum packed with firm faeces**

- **Your task is to:**
- Take a further history
- Explain to the father the boy's condition and management

Encopresis

- History-
- Since when has he been soiling his pants, how often,
- Any blood/mucus in his stool- no
- tummy pain- yes- all pain questions (on and off, whole tummuy)
- h/o pain while defecating and constipation, (history of chronic constipation, history of a fissure that has been treated)
- toilet train, vomiting.
- R/o Hirschsprung disease (h/o constipation from birth and delay passage of meconium)
- Weight, appetite,
- Dry at night time and any urine problem

- BINDS-
- Family and school/childcare Hx – any bullying, how is he coping with it, can be very embarrassing and distressing for the child.
- Thyroid disease
- Medication Hx- any medication used for constipation
- Diet Hx – is he a picky eater, does he eat enough veg and fruit, drink enough water and fluids?

- Explanation: Involuntary passage of faecal material in underpants.
- Cause: constipation, Inadequate dietary intake, fear of pain during defecation.
- Chronic Faecal Retention→enlargement of Large intestine and less to nervous stimulation(child does not know when to go to toilet) Liquid stools from small intestine leak around faecal mass leading to soiling of underwear
- Manageable and not his fault

- **Treatment :**
- **Empty by enema and laxative for long time till there is diarrhea for a few days to make sure his system is washed out**
- Toilet training and Diet – can refer to a nutritionist for a balanced diet and get ideas of how ro encorporate more veg and fruit in his diet
- Do not scold the child, praise him, star chart. Talk to teacher.
- Red flags and review

Case 10

- A 16-year old boy comes with abdominal pain and recurrent diarrhea since 4 months.

- Task:
- Take further history (not more than 5 min)
- DDX
- Mx

Positives

- Started **4 m ago** was
- Pain was **5-6/10**, **all abdomen** no radiation, relieving with passing stools,
- No special diet, has tiredness as well ,
- No vomiting, no trauma,
- **No Wt loss**, **going toilet 4-5 times** and has increased,
- No burning sensation, no change in colour of urine or stool, no bumps & lumps, no recent or recurrent infection, **no rash or joint pain**, not sexually active, no smoke alcohol or illicit drug, no FH of any dis no PMH of any dis.
- Mood was ok, intetest ok, stress +
- No medication, no allergy

DDx

- IBS
- IBD
- Coeliac disease
- Infectious diarrhea
- Colorectal cancer

IBS

- Irritable bowel syndrome (IBS) is defined as a group of functional bowel disorders in which abdominal discomfort or pain is associated with defaecation or a change in bowel habit with features of disordered defaecation.
- The abdominal pain is usually in the lower abdomen, frequently on the left side, often worse in the morning and relieved by passing wind or defaecating.
- Commonly, **pain occurs soon after waking and there is an urge to defaecate.** This is repeated several times over a short period of time with a feeling of incomplete defaecation.
- The urgency is sometimes severe and, if there has been damage to the muscular function of the anus (eg. during childbirth) loss of bowel control can occur with involuntary passing of faeces or mucous.
- Gas, bloating and abdominal distention are common and may be worse at the end of the day.
- Offensive wind is also present. While it is socially embarrassing, it has no serious effects on health

Table 1. Rome II Diagnostic Criteria for IBS[2]

At least 12 weeks, which need not be consecutive, in the preceding 12 months of abdominal discomfort or pain that has two of three features:

- Relieves with defaecation, and/or
- Onset associated with a change in frequency of stool, and/or
- Onset associated with a change in form (appearance) of stool

Symptoms that cumulatively support the diagnosis of IBS:

- Abnormal stool frequency (for research purposes 'abnormal' may be defined as greater than three bowel movements per day or less than three bowel movements per week)
- Abnormal stool form (lumpy/hard or loose/watery stool)
- Abnormal stool passage (straining, urgency, or feeling of incomplete evacuation)
- Passage of mucus
- Bloating or feeling of abdominal distention

Note: The diagnosis of a functional bowel disorder always presumes the absence of a structural or biochemical explanation for the symptoms

Table 2. Alarm association symptoms

Weight loss
Rectal bleeding
Family history of colorectal cancer/inflammatory bowel disease
Anaemia
Elevated ESR/CRP
Age over 40 years

Table 3. Management options

Diarrhoea predominant

- Exclude microscopic colitis
- A high fibre diet and bulking agents are as valuable with diarrhoea as with constipation, especially morning urgency
- Antispasmodics, eg. mebeverine (Colafac, Buscopan) are often helpful
- Rarely are loperamide (Imodium), diphenoxylate (Lomotil) or codeine phosphate required

Constipation/pain

- High fibre diet and bulking agents (Agiofibe, Metamucil, Normafibe)
- Antispasmodics
- Amitriptyline (Endep) 10–20 mg at night for pain
- Laxatives may be required, especially with associated bulk (Agiolax, Normacol, Granocol)
- Tegaserod (Zelmac) in women with bloating/constipation may help
- Bloating may require a lower fibre diet plus a laxative

- **IBS important questions in history**
  1-pain related to food
  2-pain reliever by passing stool
  3-history of alternating constipation and diarrhea

  4-straing, urgency, feeling incomplete defecation

  5-stress in life, perfectionist
- • **IBS summary**
  -overactive movements of bowels leading to pain, bloating, diarrhea and even constipation
- -body mind axis
  -certain factors like lack of fibres, spicy food, dairy products
  -common condition, not serious

- IBS is more common in women, and the first presentation is often between 30–50 years of age.
- • In up to 25% of cases, IBS starts soon after a bout of gastroenteritis, suggesting a possible
- aetiological role of toxins.
- • Altered gut sensitivity to distention and the role of neurotransmitter receptors in the gut are thought to be aetiological factors in IBS.
- • IBS is a diagnosis of exclusion. The Rome criteria assist with diagnosis and the presence of alarm symptoms indicate the need for further investigation.
- • Management involves explanation and reassurance. There is no single successful treatment for IBS and management often includes a number of diet, lifestyle, pharmacological, psychological and complementary medicine stratergies.