Gastro- Intestinal Bleeding in Children

• Upper G1 Bleeding.
• Lower G1 Bleeding.

Upper G1 Bleeding :-
Presentation : Hematemesis

Causes :-

**Neonate**

• reflux esophagitis (dark, small amount)
• PyLoric stenosis ( dark, small amount )
• Peptic Ulcer ( Bright, Large amount )

**Older Children :-**

• esophageal Varices (Bright, Large amount )
• Acute gastric erosion (Bright, variable in amount )

Lower G1 Bleeding :- Malena

Infant:

Intussusception (Bright, small rectal bleeding )

• VOLVOLUS .(dark, small rectal bleeding )
• Duplication of intestine

**Toddlers age :-**

• Anal Fissure ( Bright, small rectal bleeding )
• Rectal prolapse ( Bright, small amount )
• Ulcerative Colitis ( Bright, Large amount bleeding )

Older children :-
- Rectal Polyp( Bright, small amount ).
- Mickel's diverticulum ( maroon in colour, large amount).
- Ulcer ative Colitis (Bright, Large amount bleeding).
- Esophageal varices (dark, Large amount).
- Stress ulcer (dark, Large amount).

**MECKEL'S DIVERTICULUM**

Anatomy:- Congenital diverticulum present in 2 percent of the human race, it is situated upon the antimesenteric Border of the small intestine, commonly 60 cm. From the ileo- caecal valve, and it is usually 5 cm. Long many variation occur (The Rule of 2 include 2 percent -2 Feet -2 inches is a useful aide memoire). In nearly 90 percent of cases the diverticulum arises from the antimesenteic Border of the ileum, and being congenital, it possesses all the three coats of the intestinal wall. It has its own blood supply (like the appendix) in 20% of cases the mucosa contains Heterotopic epithelium viz gastric, colonic or sometimes pancreatic tissue. When present heterotopic tissue lines the greater part of the proximal end of the pouch, and not infrequently extends for a short distance in to the nearby ileum. Although meckels diverticulum occurs with equal frequency in both sexes symptomatic cases, due almost entirely to the epithelium (Heterotopic mucosa) contained in the diverticulum are predominant in the male.

**Associated anomalies :-**
- esophageal artesia, imperforat anus, omphalocele minor.

**Clinical manifestation :-**

In order of frequency are as follows :-
- sever Haemorrhge, due to peptic ulceration the blood is passed PR, and is maroon in color.
- intussusception in the majority of cases the apex of the intussusception is swollen inflamed, heterotopic epithelium at mouth of the diverticulum, not inversion of the diverticulum as is commonly stated.
• meckelian diverticulitis with or without perforation is usually due to lodgement of coarse food residue or sharp foreign body.

• The symptoms of meckelian diverticulitis without perforation are those of acute appendicitis and unless the appendix has been removed the diagnosis is impossible before operation.

• When perforation occur so rapid is the onset of peritonitis that the symptoms simulate those of perforated duodenal ulcer. Whether or not the diverticulum has perforated, urgent operation is required.

• chronic peptic ulceration because the diverticulum is part of the mid gut, the pain those related to meals is felt around the umbilicus.

• intestinal obstruction the presence of band between the apex of the diverticulum and the umbilicus may cause obstruction either by the band itself or by the volvolus around it.

• silent meckel's diverticulum Ameckl's diverticulum usually remains symptomless, throughout life. When silent meckels diverticulum is encountered in the course of an abdominal operation and can be excised without appreciable additional risk this should be done in order to exclude the possibility of subsequent complication, exceptionally a meckel's diverticulum is found in an inguinal or femoral hernial sac-litter's hernia.

• **Diagnosis:-**

• -Ba.emema

• -Technetium $^{99m}$ (TC-$^{99m}$) concentrated this will localize the heterotopic gastric mucosa in meckeles diverticulion in 90% of cases.

• **Treatment:-**

• - maintain vital signs.

• - surgery (excision with end to end anastomosis).
Bleeding diverticulum should be widely excised with adjacent ileum because the ulcer may be present adjacent to the diverticulum with end to end anastomosis

Intussusception

Definition:
One portion of the gut becomes invaginated into another immediately adjacent;

Aetiology:
In a few cases there is some obvious cause e.g. polypus, submucous lipoma, meckel's diverticulum. In intussusceptions of infant it is generally agreed that:-

• Idiopathic intussusception occurs most often between the sixth and ninth months.
• There is a change in diet-the infant is weaned.
• An idiopathic intussusception usually commences in some part of the last 50cm of the small intestine.
• Maximum aggregation of peyer's patches is in the lower ileum.
• Theory:-
  (a) Change of diet leads to change of intestinal flora, (b) this predisposes to inflammation of the intestinal tract, (c) which in turn causes inflammation and swelling of peyer's patches, (d) a swollen peyer's patch produces elevation protruding into the lumen of the gut comparable to one of the known causes of intussusception.
• Another Theory:- intussusception often shows a seasonal incidence related to the attacks of upper respiratory Infection, the antibodies to certain viruses might cause swelling of peyer's patches.

Pathology :-
An intussusception is composed of three parts:-
  1. The entering or inner tube.
  2. The returning or middle tube.

The above two called intussusceptum
3. The sheath or outer tube which is called intussuscipliens

Types of intussusceptions:

- Ileoileal 5%
- Ileocolic 77%
- Ileoileoclic 12%
- Colocolic 2%
- Multiple 1%
- Retrograde 0.2%
- Others 2.8%

The blood supply of the inner layers of the intussusception is liable to be impaired.

Clinical feature of intussusception in infants: usually the patient is a fine male child between 6 and 9 months of age. The onset is sudden, the child has paroxysm of abdominal pain, drawing up his legs and screams.

He may vomit shortly after the onset of the attack, but after 24 hr. vomiting is conspicuous feature. The attacks last few minutes and recur every 15 minutes, accompanied by facial pallor, in between attack he lies listless & looks drawn. In early stages, normal stool is frequently passed, later blood and mucus are evacuated the well-known "red currant jelly" stool.

On examination: No abdominal distention found in early cases, in between the spasms with warm hand a mass might be felt, usually sausage-shaped lump, concavity toward the umbilicus, feeling of emptiness in RIF.

On PR examination & in advanced cases the apex of the intussusception might be felt, but in most cases blood stained mucus will be found on the examining finger. In a few cases the intussusception actually protrudes through the anus.

After 24-48 hr the abdomen start to distend, vomiting become copious, absolute intestinal obstruction follows.
Radiography:­

Plain film: increased gas shadows in the small intestine and absence of the caecal gas shadow. Barium ename give(+ve) evidence of the presence of an ileocolic intussusception (claw sign).

u/s abdomen can reveal the mass of intussusception.

Differential Diagnosis :­

• Acute enterocolitis
• Purpura with intestinal symptoms (Henoch's purpura)
• Prolapse rectum.

Treatment :­ (Non- operative)

Preliminary treatment:­

• Nasogaseric suction
• i.v. fluid.

Reduction by hydrostatic pressure :­

In early cases : in the operating theater, an unlubricated catheter is passed in to the rectum of the anaesthetised infant. The catheter is connected to the tubing of a reservoir filled with saline solution, and elevated to the height of 1 meter(3 feet).

The solution is allowed to run in to the bowel for 3 minutes, while the buttocks are pressed together to prevent escape of the fluid, the catheter is then removed and the fluid is allowed to escape in to a bowl. Several such injections are made, often three times, after the first injection the fluid returned is blood stained, subsequently, if reduction of intussusceptions is effected, flatus and fecal matter are passed. If there is the slightest doubt as to whether the intussusceptions has been reduced completely, laparatomy is preformed. Other way of non-operative treatment is by pneumatic reduction

Operative Reduction:­
Laparatomy, if possible without exteriorizing the bowel, the lowest part of the sausage – like mass is squeezed little by little, do not pull, the last part of the intussusceptions is the most difficult part to reduce and is gently compressed in a warm, saline- soaked pack, to lessen the odema.

Resection of an irreducible or gangrenous intussusceptions and end to end anastomosis

Recurrent intussusceptions occur only in 2 % of cases of idiopathic intussusceptions.