Abstract:
Intussusception of the bowel is defined as the telescoping of a proximal segment of the gastrointestinal tract within the lumen of the adjacent segment. This condition is frequent in children and presents with the classic triad of cramping abdominal pain, bloody diarrhea and a palpable tender mass. However, bowel intussusception in adults is considered a rare condition, accounting for 5 of all cases of intussusceptions and almost 1-5 of bowel obstruction. Primary (idiopathic) intussusception is common in children while Secondary intussusception caused by organic lesions, such as inflammatory bowel disease, postoperative adhesions, Meckels diverticulum, benign and malignant lesions, metastatic neoplasms or even iatrogenically, due to the presence of intestinal tubes, jejunostomy feeding tubes or after gastric surgery are common in adults. Computed tomography is the most sensitive diagnostic modality and can distinguish between intussusceptions with and without a lead point.

Surgery is the definitive treatment of adult intussusceptions. Reduction of the intussuscepted bowel is considered safe for benign lesions especially for small bowel lesions. Here we present a case of adult intussusception who presented to our emergency ward with intestinal obstruction with no identifiable pathology.

Keyword: adult intussusception, CT scan, surgery.

A 47 year old painter from Chetpet got admitted with complaints of abdominal pain for 1 day with vomiting for 1 day and bleeding per rectum for 1 day. The abdominal pain was sudden in onset more around the umbilical region, initially intermittent which later became continuous and severe. Vomiting was non projectile, bilious in nature, 10 episodes. There was no history of fever, abdominal trauma, hematemesis, loss of appetite, loss of weight, loose stools. PAST HISTORY: no history of previous major abdominal surgeries and no other significant
past history. PERSONAL HISTORY: He is a known smoker and an alcoholic for more than 10 years. No significant family history. GENERAL EXAMINATION: patient was conscious, oriented, moderately built and nourished, dehydrated. There was no pallor. Vitals were stable. Cardiovascular system and respiratory system examination were normal.

LOCAL EXAMINATION: Abdomen was mildly distended; umbilicus was in midline. Tenderness was there in epigastric, umbilical and right iliac fossa. A tender mass of size 5X4 cm was felt in the right iliac fossa which was firm, smooth and resonant. Bowel sounds were exaggerated. Hernial orifices were free. External genital was normal. Per rectal examination - blood stain present. INVESTIGATIONS

Routine investigations like complete hemogram, and liver function test, random blood sugar, blood urea, serum creatinine were within normal limits. PLAIN X RAY ABDOMEN: showed multiple fluid levels. USG ABDOMEN: revealed ileoileal intussusception with illdefined hyperechoic mass in RIF with proximal bowel dilatation and evidence of obstruction.

TREATMENT - Emergency laparotomy. Midline incision. Findings: Ileoileal intussusception was found. Intussusception was 6-7 cm from ileocecal junction. Around 20 cm of the distal intussuscepted ileum was gangrenous which was subsequently resected and primary ileoileal anastomosis done. Ileum was fixed to the ascending colon. No macroscopic pathology made out in the resected specimen on mucosal as well as on the serosal side and it was sent for HPE. No other pathology was found per operatively. Abdomen closed in layers with drain. Post operative period was uneventful.

FOLLOW UP – the patient was followed up periodically at 6 wks, 3rd month, with colonoscopy, CECT abdomen and barium meal follow through which were normal. HPE - report revealed gangrenous bowel, no other pathology made out.

K.M.C. STATISTICS FOR PAST 5 YRS.
Discussion: Intussusceptions was first reported in 1674 by Barbette of Amsterdam. It is defined as the telescoping of a proximal segment of the gastrointestinal (GI) tract, called intussusceptum, into the lumen of the adjacent distal segment of the GI tract, called intussuscipiens. The apex is part which advances first into the bowel. Intussusceptions are rare in adults constituting 5% of intussusceptions. In adults it accounts for 1%-5% of the intestinal obstructions. 90% of Peadiatric intussusception are idiopathic (primary) where as in adult 90% are due to secondary causes Such as carcinomas, polyps, Meckel's diverticulum, colonic diverticulum, strictures or benign neoplasms , chronic caecal ulcer, peutz jegher, typhoid, are the secondary causes. 15% of malignant lesion occur in small bowel. 60% malignant lesions occur in large bowel. Pathophysiology: The pathogenesis of idiopathic intussusception is not well established. It is believed to be secondary to an imbalance in the longitudinal forces along the intestinal wall. In enteroenteral intussusception, this imbalance can be caused by a mass acting as a lead point or by a disorganized pattern of peristalsis (eg, an ileus in the postoperative period). As a result of imbalance in the forces of the intestinal wall, an area of the intestine invaginates into the lumen of adjacent bowel. The invaginating portion of the intestine (ie, the intussusceptum) completely "telescopes" into the receiving portion of the intestine (ie, the intussuscipiens). This process continues and more proximal areas follow, allowing the intussusceptum to proceed along the lumen of the intussuscipiens. If the mesentery of the intussusceptum is lax and the progression is

**TYPES**

ANTEGRADE – Common type.
RETROGRADE- rare (eg. Jejunogastric in gastrojejunostomy stoma)

**Etiology:**
In children idiopathic cause accounts for 90%. It occurs most commonly during weaning and change in diet due to inflammation of payers patches, upper respiratory tract viral infections.
In adults secondary causes accounts for 90%, idiopathic only 10%. Carcinomas, polyps, Meckel's diverticulum, colonic diverticulum, strictures or benign neoplasms, chronic caecal ulcer, peutz jegher, typhoid, are the secondary causes. 15% of malignant lesion occur in small bowel. 60% malignant lesions occur in large bowel.
rapid, the intussusceptum can proceed to the distal colon or sigmoid and even prolapse out the anus. The mesentery of the intussusceptum is invaginated with the intestine, leading to the classic pathophysiologic process of any bowel obstruction. Early in this process, lymphatic return is impeded; then, with increased pressure within the wall of the intussusceptum, venous drainage is impaired. If the obstructive process continues, the pressure reaches a point at which arterial inflow is inhibited, and infarction ensues. The intestinal mucosa is extremely sensitive to ischemia because it is farthest away from the arterial supply. Ischemic mucosa sloughs off, leading to the heme-positive stools and subsequently to the classic "currant jelly stool" (a mixture of sloughed mucosa, blood, and mucus). If untreated, transmural gangrene and perforation of the leading edge of the intussusceptum occur.

Clinical features: IN ADULTS: Peak incidence is 4-5th decade. Enteric type in males and colic type in females. Males and females have equal incidence. In adults symptoms are nonspecific and the majority of cases in adults have been reported as chronic, consistent with partial obstruction. The classic pediatric presentation of acute intussusception (a triad of cramping abdominal pain, bloody diarrhea and a palpable tender mass) is rare in adults. Nausea, vomiting, gastrointestinal bleeding, change in bowel habits, constipation or abdominal distension are the nonspecific symptoms and signs of intussusception. IN CHILD: it occurs usually in males who are 6-9 months of age during the spring and winter. The classical triad of symptoms in children are abdominal pain, red current jelly stools and the sausage shaped mass felt either right or left of the umbilicus, with Empty right iliac fossa (sign of dance). Since the most common cause of intestinal obstruction in children
is intussusception features of intestinal obstruction may also be present. Complications: Intestinal obstruction, perforation, peritonitis

INVESTIGATIONS:
Plain X-ray abdomen: shows multiple air fluid level (signs of intestinal obstruction).
USG ABDOMEN: shows target sign or doughnut sign in transverse view or pseudo kidney sign or hay-fork sign in longitudinal view.
BARIUM ENEMA: shows claws sign or coiled spring sign. CT
SCAN -85% sensitivity (60-100%) it may show “target” or “sausage”- shaped soft-tissue mass with a layering effect, mesenteric vessels within the bowel lumen are also typical. It defines the location, the nature of the mass, its relationship to surrounding tissues, and additionally it may help staging the patient with suspected malignancy causing the intussusceptions.

TREATMENT:
Adults usually present with acute, subacute, or chronic nonspecific symptoms, the initial diagnosis is missed or delayed and is established only when the patient is on the operating table. Adult intussusception requires surgical intervention because of the large proportion of structural anomalies and the high incidence of occurring malignancy. So preoperative reduction with barium or air is not suggested as a definite treatment for adults as in pediatric population.

The risks of preliminary manipulation and reduction of an intussuscepted bowel include intraluminal seeding and venous tumor dissemination, perforation and seeding of microorganisms and tumor cells to the peritoneal cavity increased risk of anastomotic complications of the manipulated friable and edematous bowel tissue.

Also reduction should not be attempted if there are signs of inflammation or ischemia of the bowel wall. In patients with ileo-colic, ileo-cecal and colo-colic intussusceptions, and patients more than 60 years of age, due to the high incidence of bowel malignancy as the underlying etiologic factor, formal resections using appropriate oncologic techniques are recommended, with the construction of a primary anastomosis between healthy and viable tissue. When a preoperative diagnosis of a benign lesion is safely established especially in illeo-ileal intussusception, the surgeon may reduce the intussusception by milking it out in a distal to proximal direction, allowing for a limited resection. But reduction should not be done if there are signs of inflammation, ischemia/gangrene of the bowel wall.

Moreover, in patients complicated with postoperative bowel obstruction due to an intussusception, reduction is also recommended, provided that the bowel appears non-ischemic and viable.

Conclusion: Adult Intussusception is rare and is also an uncommon cause of intestinal obstruction in adults, which poses diagnostic challenges for surgeons, due to its varied presenting symptoms and time course. Diagnosis is thus often delayed and results in delayed surgical intervention which may lead to the development of bowel ischaemia. This case is presented as it is a rare case of intussusception in adults with no underlying pathology, (wherein 90% of intussusception in adults have a pathological lead point and only 10% is idiopathic). A high index of suspicion, physical examination, and imaging modalities is necessary for diagnosis, and the treatment for adult intussusception is always surgical.
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