

Ileoileal Intussusception - Rare Variety

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A 23 years old man presented in emergency with acute onset of pain in the centre of abdomen. He had a history of pain in abdomen & vomiting off and on for one week only. In emergency he was investigated by plain X-Ray abdomen (erect) and other routine laboratory tests. On plain X-ray abdomen multiple air fluid levels were noted & laboratory investigations were within normal limits. He was advised routine abdominal ultrasound which revealed a gut mass measuring about 8x6.5cm showing multi-layered pattern. The mass was mobile while pressing with ultrasound probe. The appearances were suggestive of Ileoileal Intussusception (rare variety of intussusception). Barium follow through was done which revealed typical coil spring appearance indicative of Ileoileal intussusception. Surgery was done which confirmed the ultrasound & Barium study findings. There was another finding on surgery after the reduction of intussusception. A rounded mass was seen at the site of intussusception which was found to be the leading factor for this ileo-ileal intussusception. Resection and end to end anastomosis was done. On histopathology this mass was turned out to be Fibroliposarcoma.

Discussion

Types of Intussusception

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

Intussusception is when one portion of gut becomes invaginated into another immediately adjacent; almost always it is the proximal into the distal. In few cases there is some obvious cause e.g a Polyp, a Papilliferous carcinoma, submucous lipoma, Lymphoma, Haematoma, Cystic Fibrosis, Meckels' diverticulum or Duplications etc. Intussusception is composed of three parts:

- 1) The entering or inner tube
- 2) The returning or middle tube
- 3) The sheath or outer tube

The outer tube is called the intussuscipiens. The inner and middle tube together forms the intussusceptum. The neck is the junction of the entering layer with the mass. That part which advances is the apex and the mass which constitutes the intussusception increases as it advances. The blood supply of the inner layers of the intussusception is liable to be impaired. The onset of gangrene is

dependent upon the tightness of invagination. Most of the time it is sudden in onset. Children usually present between the age of 3 months & 2 years with paroxysmal abdominal pain & may start vomiting shortly after the onset of attack. In early stages a normal stool is frequently passed; later blood & mucus are evacuated, the well known red-currant jelly' stool. Unrelieved, the pain become continuous. After 24 to 36 hours the abdomen commences to distend & vomiting becomes copious. Absolute intestinal obstruction follows, & death from this cause or from peritonitis secondary to the gangrene is probable.

In patients suspected of having intussusception barium study is the examination of choice for diagnosis and treatment. However, intussusception can also be recognized on ultrasound. In author experience ultrasound should be used to screen particularly children's suspected of having intussusception. On ultrasound the transverse images of intussusception appears as a complex mass with alternating high and low reflectivity rings surrounding a very highly reflective centre. The number of rings varies with the extent of edema. With marked edema only two layers are seen; the configuration is referred to as the 'Doughnut sign'. The echo-poor rim represents the edematous wall of the intussuscipiens, whereas the reflective centre represents the mesentery enclosing the entering limb of the intussusceptum. In cases with mild edema there is less stretching & thinning of the intervening layers of mucosa & serosa, resulting in multiple concentric rings. This appearance has been called the target sign. On longitudinal images the intussusception has reniform shape.

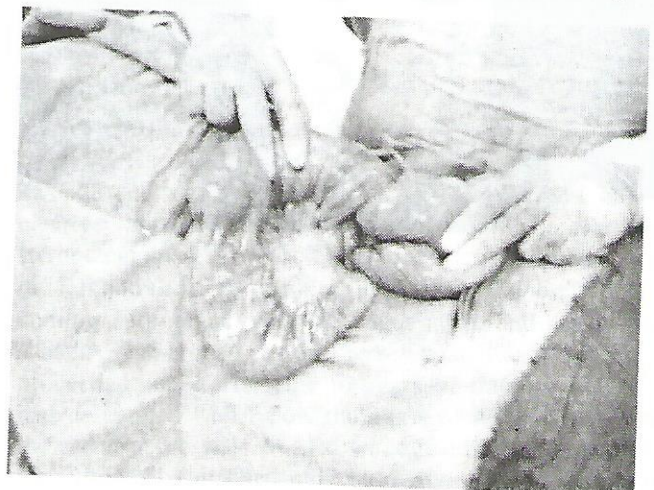
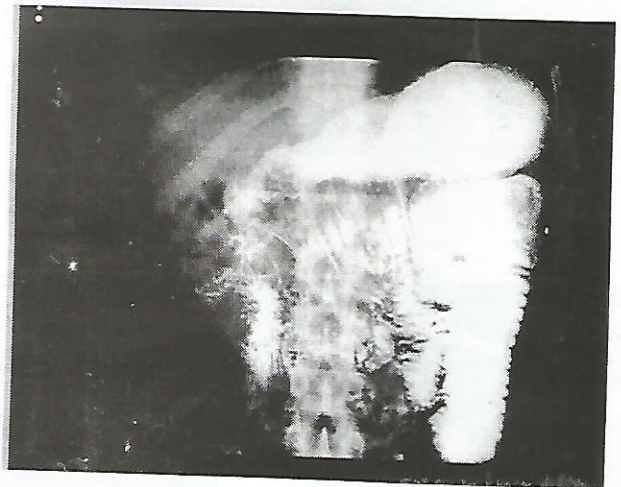
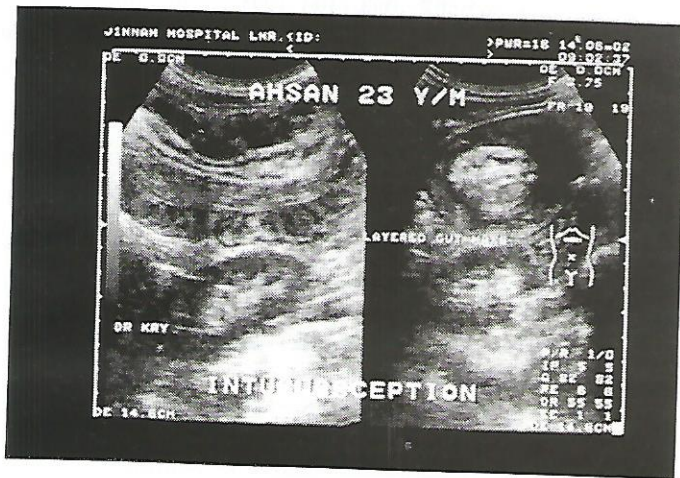
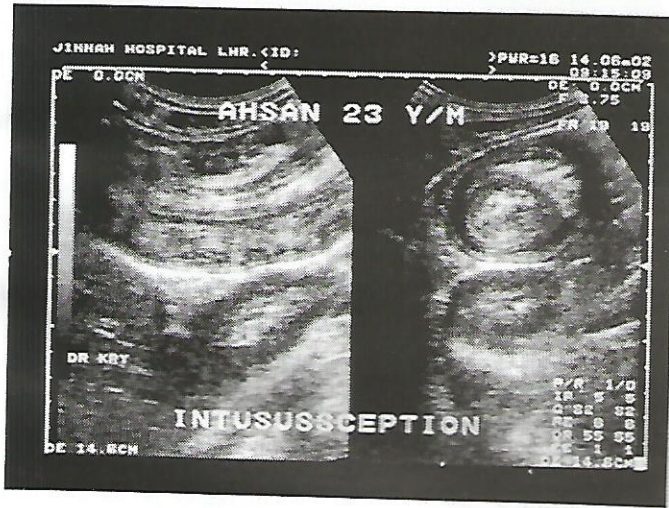
Several reports have suggested that hydrostatic reduction can be monitored with ultrasound. The success of contrast reduction enemas appears to vary with the ultrasound appearance. The presence of a doughnut like sign with a thick echo-poor rim has been proposed as a predictor of irreducibility. Large amount of fluid within the intussusceptum is also associated with irreducibility & ischemia.

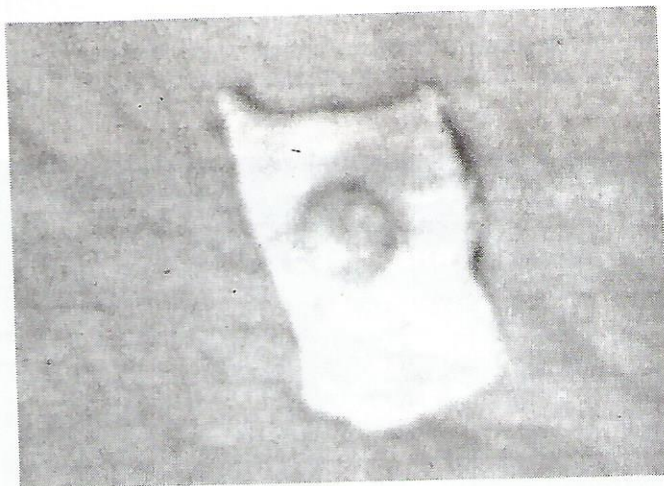
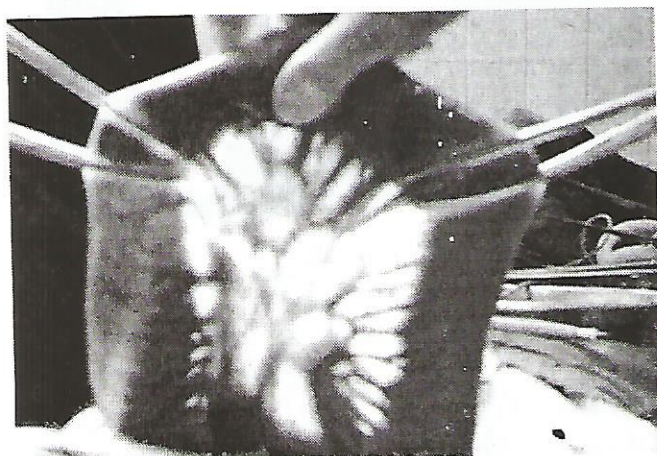
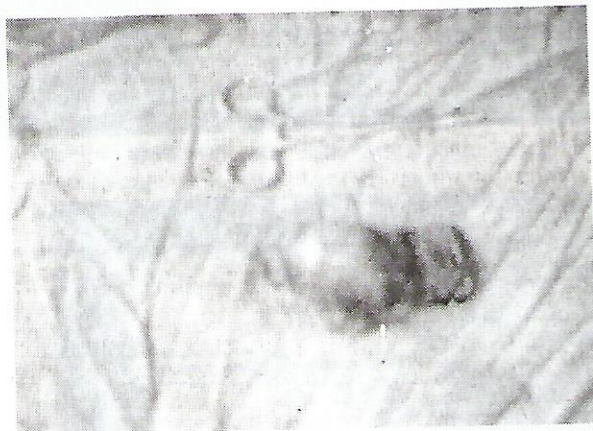
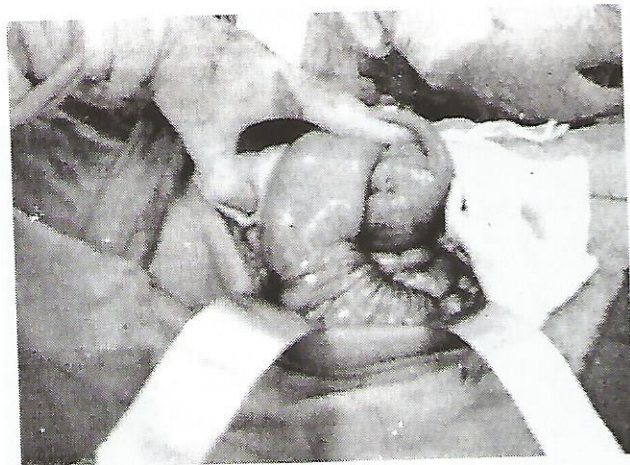
Colour flow imaging has been used to show the presence or absence of blood flow in the intussuscepted bowel. The presence of blood flow suggests viable bowel, whereas its absence suggests that gangrenous changes may have occurred. The success rate of hydrostatic or air reduction also appears to correlate with the amount of Colour signals in the intussusceptum. A success rate of greater than 90% has been reported when blood flow is present & a success rate of only 30% when flow is absent.

Conclusion:

The sensitivity of grey scale & Colour Doppler ultrasound for the diagnosis of intussusception ranges between 95 to 100%, with a negative predictive value of 100%. The

specificity ranges between 88 to 100%. False positive diagnosis is caused by faecal contents, inflammatory bowel disease, intramural haematoma & volvulus.





References

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