

INTUSSUSCEPTION – THE LIGHT AT THE END OF THE TUNNEL

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ABSTRACT

Background and Aims: Intussusception is defined as the invagination of one segment of the bowel into an immediately adjacent segment. (1) Intussusception, more common in the small bowel and rarely involving only the large bowel, has historically presented as small bowel obstruction. (2) Primary imaging modality of choice is ultrasound scanning. In emergency cases, additional plain films are necessary to detect potential intestinal perforation, to identify intestinal obstruction or other diseases mimicking the clinical presentation. Once the diagnosis of an Intussusception is established, hydrostatic reduction is attempted. A surgical approach is chosen in patients with signs of perforation, shock or peritonitis or failed attempt at non-surgical reduction. (1) This case series finds the correlation of various clinical presentations and the different line of management in paediatric age group. **Materials and Methods:** 5 Paediatric cases diagnosed with radiologically confirmed Intussusception presented in the ER with classical signs of pain, vomiting, and red currant jelly stools. The various treatment modalities each used for different clinical presentations at different age groups, the chances of recurrence associated with them and the overall outcome including hydrostatic reduction and Exploratory Laparotomy with intra-operative reduction. **Results:** Patients presenting with Intussusception, managed with Hydrostatic reduction or explorative laparotomy with definitive management for the lead point and conservative management have varied outcomes and the step wise approach of management in successfully reducing Intussusception **Conclusion:** Hydrostatic reduction has a huge role in managing the 1st and earliest presentation of Intussusception with minimal invasion and shortest course of treatment but is associated with high recurrence rate. Explorative Laparotomy can be reserved for cases with complications like intestinal obstruction. Hence early diagnosis with an aggressive approach for the treatment can be helpful in minimizing the risks, complications, and the chance of recurrence for the same.

KEYWORDS : Intussusception, Exploratory laparotomy, Hydrostatic reduction

INTRODUCTION

- Intussusception is the invagination of 1 segment of intestine into another. (1)

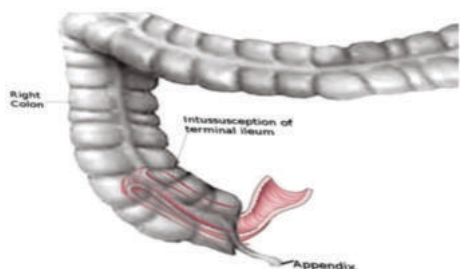


Figure -1: Ileocolic Intussusception

- The classical symptoms of abdominal pain or vomiting & 2 classical signs of abdominal mass or rectal bleed are present in 85% of patients
- USG is the primary adjunct to clinical diagnosis. Additional plain films are necessary to detect potential intestinal perforation, to identify intestinal obstruction or other diseases mimicking the clinical presentation.

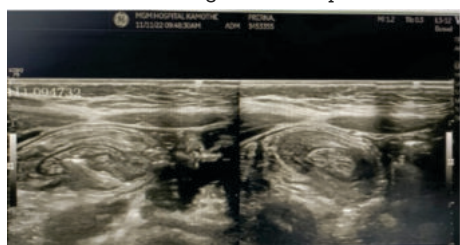


Figure 2: Intussusception as visualized on USG

Once the diagnosis is established, hydrostatic reduction is attempted. A surgical approach is chosen in patients with signs of perforation, shock or peritonitis or failed attempt at non-surgical reduction.

Hydrostatic reduction was done-An T.U.R.P set (Transurethral resection of prostate) with a Foleys catheter fitted is then filled with warm normal saline and hung on a drip stand at an initial height of 3 feet, the height may be increased depending on how difficult it was to reduce the mass. The Foleys catheter was inserted into the rectum, the balloon inflated and the normal saline allowed to flow into the colon. The ultrasound machine was then used to guide the reduction till the mass went beyond the ileocecal valve. The Intussusception was only said to have reduced if the following criteria were met:

1. Disappearance of the intussusceptum.
2. Visualization of reflux of fluid and air bubbles through the caecum and ascending colon into the ileum through the ileocecal valve
3. Demonstration of fluid distended ileum and
4. Absence of intussusceptum noted during the post evacuation ultrasound examination.

Once complete reduction was achieved, the fluid was evacuated from the colon by connecting a drainage bag to the Foleys catheter and allowing the fluid to drain under gravity. The procedure was abandoned if the intussusceptum failed to reduce/move after three attempts, each lasting about 3 minutes. After successful reduction, the patient was admitted to the ward and discharged only when he/she tolerated a regular diet and had normal bowel movement. Partially reduced cases of intussusceptions and those that failed to or had complications were managed surgically.

Case Study

5 Pediatric cases diagnosed with radiologically confirmed Intussusception presented in the ER

CASE 1

Clinical presentation –

- A 16-month female patient presented to the ER with intermittent abdominal pain associated with vomiting in the last 4 days with history of red currant jelly stool in the last 2 days.
- H/o 2 episodes of Intussusception reduction done 4 and 7 months back.

Examination -

- Abdomen was soft and non-tender with no guarding and rigidity.

Investigation -

- USG demonstrated “target sign” & suggested ileo-colic Intussusception with few mesenteric lymph nodes. [figure 3]

Management -

- Successfully reduced via USG guided hydrostatic reduction

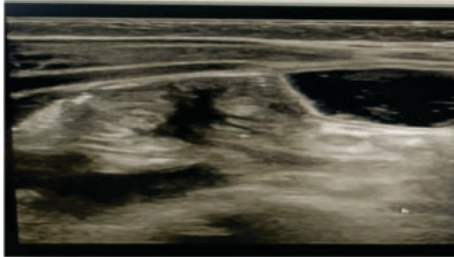


Figure 3: Case 1 – Target Sign on USG Scan

Case 2

Clinical presentation –

- A 6-month male patient presented to the ER with intermittent abdominal pain associated with per rectal bleed since 2 days
- Not able to pass flatus or feces since 1 day.

Examination -

- Abdomen was distended, tense and tender on examination with signs of guarding.

Investigation -

- USG demonstrated “target sign” & suggested ileo-colic Intussusception with severe bowel edema with signs of intestinal obstruction. [figure 4]

Management -

- USG guided hydrostatic reduction was done but failed
- Exploratory laparotomy with ileocolic Intussusception reduction was done.

[Figure 5]



Figure 4: Case 2 – Target Sign with signs of intestinal obstruction on USG Scan

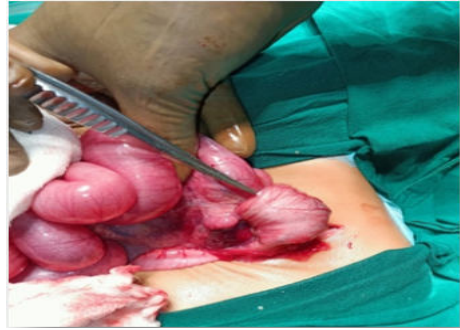


Figure 5: Exploratory Laparotomy with ileocolic Intussusception reduction

Case 3

Clinical presentation –

- A 7-month male patient presented to the ER with abdominal pain in the last 1 day
- History of red currant jelly stool in the last 1 day

Examination -

- Abdomen was soft and non-tender on examination

Investigation -

- USG demonstrated “target sign” & suggested ileo-colic Intussusception.

Management -

- Successfully reduced via USG guided hydrostatic reduction

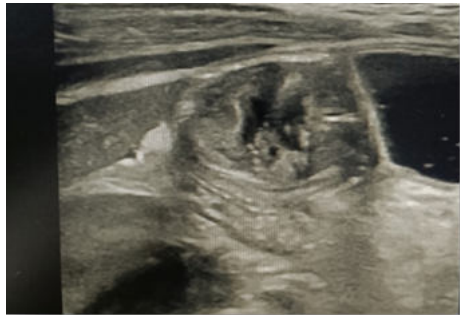


Figure 6: Case 3 – Target Sign with signs of ileo-colic Intussusception

Case 4

Clinical presentation –

- A 2-year 4 month male patient presented to the ER with abdominal pain since 2 days with 3-4 episodes of vomiting and bloody stools

Examination -

- Abdomen was tense and tender on examination

Investigation -

- USG demonstrated ileo-colic Intussusception with small bowel obstruction.

Management -

- Successfully reduced via USG guided hydrostatic reduction

Case 5

Clinical presentation –

- An 8 month female patient presented to the ER with red currant jelly stool since 2 days and 2 episodes of vomiting since 1 day

Examination -

- Abdomen was soft and non-tender on examination

Investigation -

- USG demonstrated “target sign” & suggested ileo-colic Intussusception.

Management -

- Successfully reduced via USG guided hydrostatic reduction
- After 48 hours of observation, patient complained of pain abdomen and 2 episodes of vomiting
- USG confirmed recurrence of intussusception.
- Repeat USG guided hydrostatic reduction of intussusception was done



Figure 7: Exploratory Laparotomy

DISCUSSION

- The proximal invaginated bowel (intussusceptum) carries its mesentery into the recipient bowel (intussusciptens) and the mesenteric vessels are angulated, squeezed, and compressed between the layers causing intense local edema, venous stasis and outpouring of mucus and blood from it often producing stool with the appearance of currant jelly stool.
- Patients with 1st presentation of Intussusception, recurrences, or complications like intestinal obstruction. That are managed with 1) Hydrostatic reduction 2) Explorative laparotomy with definitive management for the lead point and 3) Conservative management having varied outcomes and the step wise approach of management is successful in reducing Intussusception

CONCLUSIONS

- Due to varied symptomatology that mimics acute abdomen in paediatric age group we believe that Hydrostatic reduction has a huge role in managing the 1st and earliest presentation of Intussusception with minimal invasion and shortest course of treatment in other wise hemodynamically stable patient under close monitoring but is associated with high recurrence rate.
- Explorative Laparotomy can be reserved for cases with complications like intestinal obstruction. Hence concluding early diagnosis with an aggressive approach for the treatment can be helpful in minimizing the risks, complications and the chance of recurrence for the same.

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