Acute intussusception

This occurs when one portion of the gut becomes invaginated within an immediately adjacent segment; invariably it is the proximal into distal bowel.

Aetiology

The condition is encountered most commonly in children, where it occurs in an idiopathic form with a peak incidence at 3—9 months. Seventy to 95per cent of cases are classed as idiopathic, and an associated illness such as gastro-enteritis or urinary tract infection is found in 30 per cent. It is believed that hyperplasia of Peyer's patches in the terminal ileum may be the initiating event. This may occur secondary to weaning. In light of the seasonal variation with peak incidence in spring and summer, it may be related to upper respiratory tract infection pathogens such as adenovirus or rotavirus.

Children with intussusception associated with a lead point Such as Meckel's diverticulum, polyp, duplication, Henoch Schonlein purpura or appendix are usually older than the idiopathic cases. Adult cases are invariably associated with a lead point which is usually a polyp (e.g. Peutz—Jegher syndrome), a submucosal lipoma or tumour, the exception being after periods of long fasting. The colocolic variety is common in adults.

Pathology

An intussusception is composed of three parts:

• The entering or inner tube;
• The returning or middle tube;
• The sheath or outer tube (intussuscipiens).

The part which advances is the apex; the mass is the intussusception and the neck is the junction of the entering layer with the mass.

An intussusception is an example of strangulating obstruction as the blood supply of the inner layer is usually impaired. The degree of ischaemia is dependent on the tightness of the invagination, which is usually greatest as it passes through the ileocaecal valve. Intussusception may be anatomically defined as ileo-ileal, ileo-caecal and ileo-colic depending on the site and extent of invagination.

Clinical features

The presentation of intussusception in a child is classical. An otherwise fit and well male child of 6 months develops sudden onset of screaming associated with drawing up of the legs. The attacks last for a fewminutes, recur every 15 minutes and become progressively severe. During attacks the child has facial pallor whilst between episodes he is listless and drawn.Vomiting may or may not occur at the outset but becomes conspicuous with time. Initially the passage of stool may be normal, whilst later blood and mucus are evacuated — the 'redcurrent' jelly stool.

Examination should be undertaken, wherever possible, between episodes without disturbing the child. Classically, the abdomen is not distended, a lump may be felt which hardens on palpation but this is present in only 50—60 per cent of cases. There may be an associated feeling of emptiness in the right iliac fossa (the sign of Dance). On rectal examination blood-stained mucus may be found on the finger. Occasionally, in extensive ileocolic or colocolic intussusception, the apex may be palpable or even protrude from the anus.

Unrelieved, the pain will become continuous with abdominal distension and profound vomiting. Ultimately death occurs from small bowel obstruction or

peritonitis secondary to gangrene. Rarely, natural cure may occur due to sloughing of the intussusceptium.

Radiography

A plain abdominal film usually reveals evi-dence of small or large bowel obstruction with an absent caecal gas shadow in ileo-ileal or ileo-colic cases. A barium enema may be used to diagnose the presence of an ileo-colic or colocolic form (the claw sign) but would be negative for the ileo-ileal variant in the presence of a competent ileocaecal valve. Equivocal cases of ileo-ileal intussusception may be further evaluated by CT scan which should reveal the presence of a small bowel mass.

Barium enema may also be used therapeutically in selected cases to reduce an infant intussusception. Hydrostatic reduction is contraindicated in the presence of obstruction, peritonism or a prolonged history (greater than 48 hours) and is unlikely to succeed where a lead point is likely. It is successful in 50 per cent of cases with a recurrence rate in the order of 5per cent. Complete reduction must be confirmed by the visualization of contrast entering the terminal ileum. In cases where complete reduction is not possible, the intussusception may be so reduced in size and near its origin that only a grid-iron incision is required for surgical management.

Unfortunately, in many cases the clinical scenario is not clear-cut enough for an early diagnosis to be made and the bowel is already ischaemic by the time treatment in hospital is instituted.

Differential diagnosis

• Acute enterocolitis — whilst abdominal pain and vomiting are common with occasional blood and mucus in the stool, diarrhoea is a leading symptom and faecal matter or bile is always present in the stool.

• Henoch—Schönlein purpura (HSP) — HSP is associated with a characteristic rash and abdominal pain but intussusception may also occur. Laparotomy should be considered in equivocal cases.

• Rectal prolapse — this may be easily differentiated by the fact that the projecting mucosa can be felt in continuity with the perianal skin whereas in intussusception the finger may pass indefinitely into the depths of a sulcus.

Operative management

This is required where hydrostatic reduction has failed or is contraindicated.

Table Types of intussusception in children

	Percentage of series
Ileoileal	5
Ileocolic	77
Ileoileocolic	12
Colocolic	2
Multiple	1
Retrograde	0.2
Others	2.8

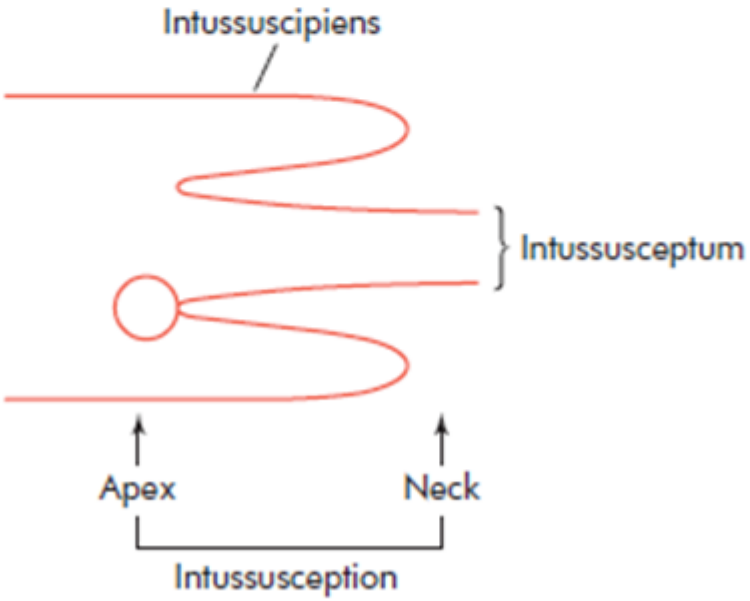
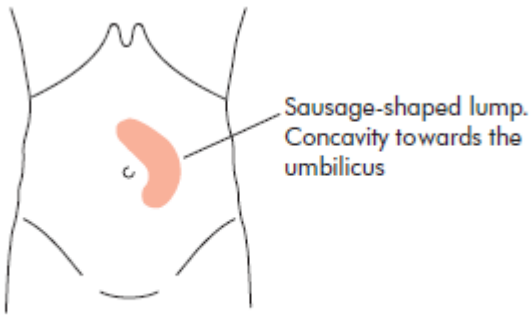
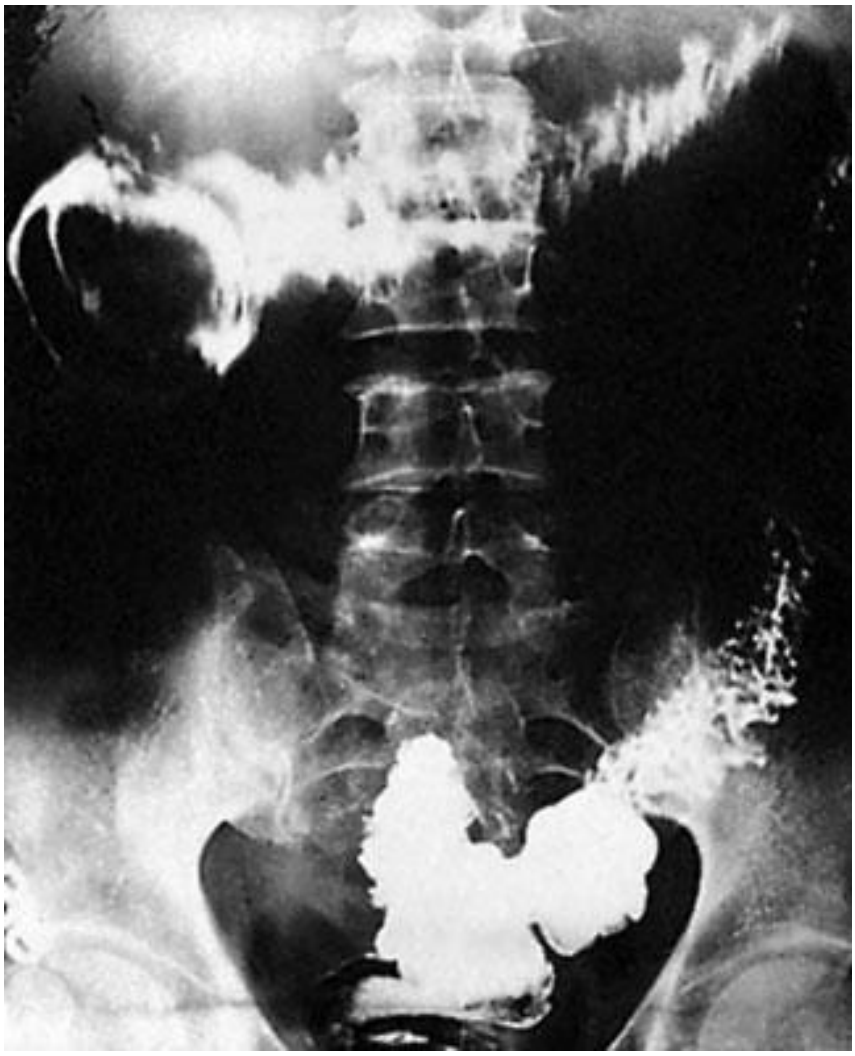
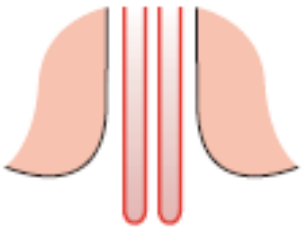


Figure Mechanism and nomenclature of intussusception.

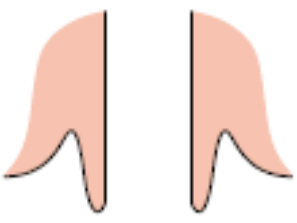


The physical signs as recorded by Hamilton Bailey in a typical case of intussusception in an infant.





Intussusception protruding from the anus.



Partial prolapse of the rectum.