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# Small bowel atresias

Small bowel obstruction i.e. jejunoileal stenosis and atresias.

Stenosis is narrowing of lumen with continuity of outer wall.

Atresias - 4 types

- Type I- intraluminal mucosal diaphragm with continuity of proximal and distal segments-20%. Diaphragm may have a hole or fenestrations.
- Type II- cord like atretic segment between blind ends of the bowel-35%
- Type III- A and B - 35%
- Type IIIA- atresias with complete separation of blind ends and V shaped mesenteric defect - 35%.
- Type IIIB- Christmas tree/apple peel deformity

Atresias with extensive mesenteric defects and absent superior mesenteric artery distal to the origin of the middle colic artery. Distal ileum gets its blood supply from single ileocecal vessel and coils around it giving Christmas tree/apple peel appearance.

- Type IV- multiple atresias of the small bowel-6%

# Types of atresias



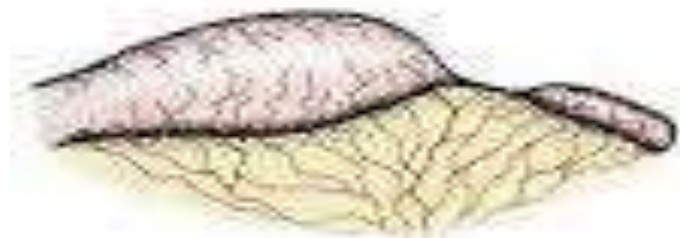
(A)

Stenosis



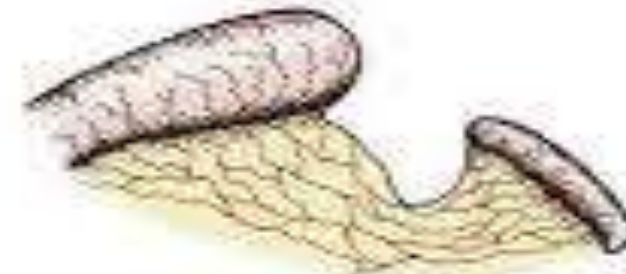
(B)

Type I



(C)

Type II



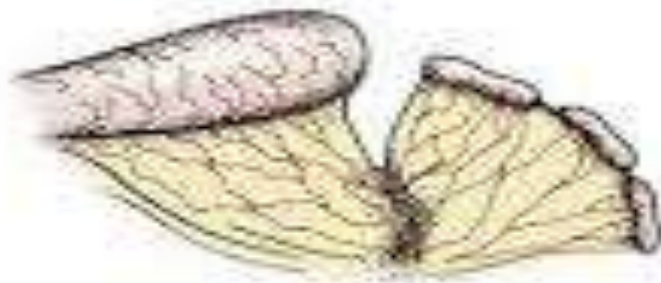
(D)

Type III (a)



(E)

Type III (b)



(F)

Type IIIc

- **Pathophysiology**- There is gross dilatation of the proximal segment and collapse of the distal bowel. Discrepancy usually 2-3 fold but can be 15-20 folds sometimes.
- Embryogenesis- Ischemic injury to the gut after midgut has returned to abdominal cavity i.e. vascular disruption.
- Other causes- intrauterine fetal intussusception, midgut volvulus, thromboembolic occlusion, trans mesenteric internal hernia and incarceration of the bowel.

## **Associated anomalies - 10%**

- Hirschsprung's disease
- Cystic fibrosis
- Malrotation
- Down's syndrome
- Anorectal anomalies
- Vertebral defects
- Congenital heart diseases

# Clinical features

- Proximal jejunal atresia presents with bilious vomitings and high bile stained gastric aspirate.
- More distal the obstruction, baby may present late after 3-4 days of life with bilious vomitings.
- Abdominal distension with palpable and distended gut loops.
- Visible peristalsis.
- Severe abdominal distension may lead to respiratory distress.
- 10% of patient presents with perforation of proximal dilated gut with meconium peritonitis and septicemia.

- There is failure to pass the meconium but patient with proximal atresia may pass meconium normally in about 30% of cases.
- Patients with stenosis can present in later life with growth retardation, failure to thrive, recurrent abdominal obstruction or malabsorption like picture.

# Diagnosis

Xray abdomen - supine and upright will show air fluid levels and dilated gut loops.

- More proximal obstruction - few air fluid levels.
- More distal obstruction - air fluid levels increase.
- Pneumoperitoneum in perforation of proximal dilated bowel.

Contrast study- not indicated except proximal obstruction where 40-50cc air can be used as a contrast.

Antenatal diagnosis

- H/o polyhydramnios
- Dilated gut loops on antenatal USG
- High contents of bile acids in amniotic fluid.



# Differential Diagnosis

- Midgut volvulus
- Meconium ileus
- Duplication cysts
- Internal hernia
- Ileus due to sepsis

# Management

Preoperative stabilization for 24-48hrs in NICU.

NG aspiration

Correction of fluids and electrolytes imbalance

Maintain temperature

Blood gas analysis

Inotropic support

Oxygen therapy

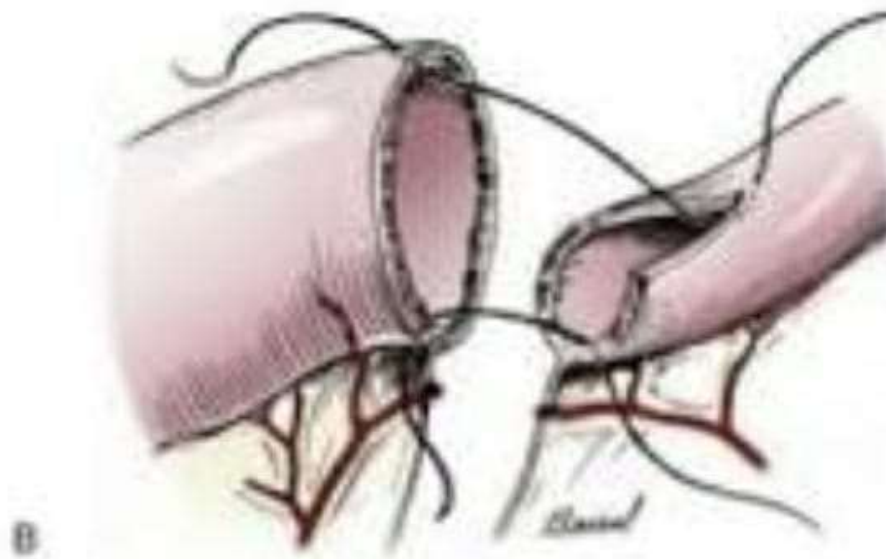
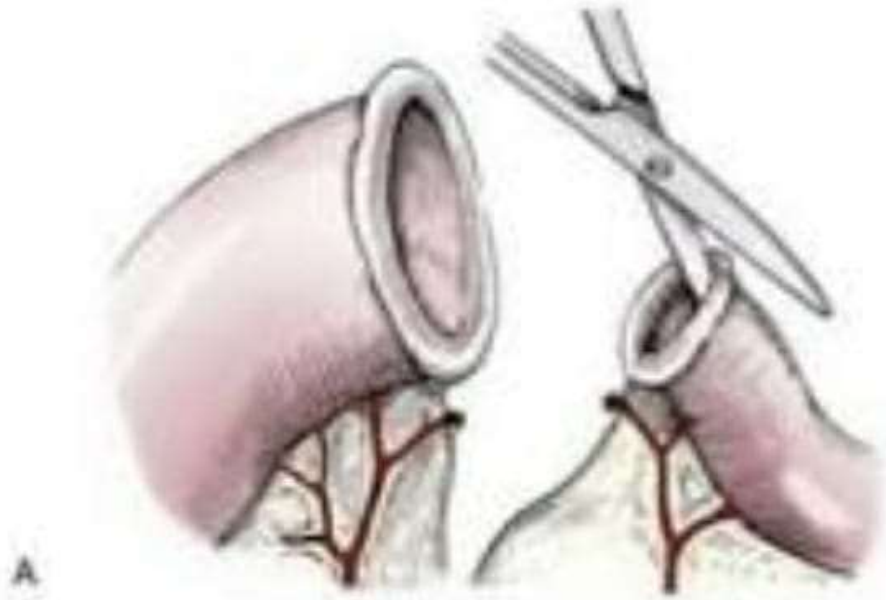
antibiotics

## **Surgical treatment –**

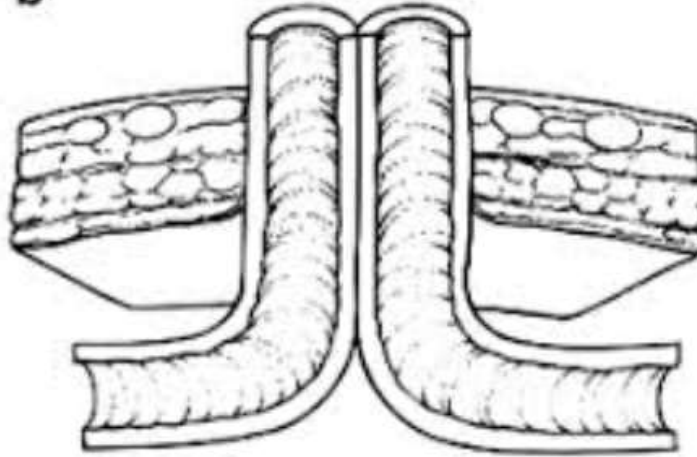
- 1. Resection –Anastomosis :** Resection of the dilated proximal bowel with primary end to end or end to back anastomosis (Dennis Brown type).
- 2. Stoma formation:** perforation with peritonitis or in patient with sepsis - stomas are created.

**Postoperative parenteral nutrition is must for survival of the baby.**

# Resection Anastomosis

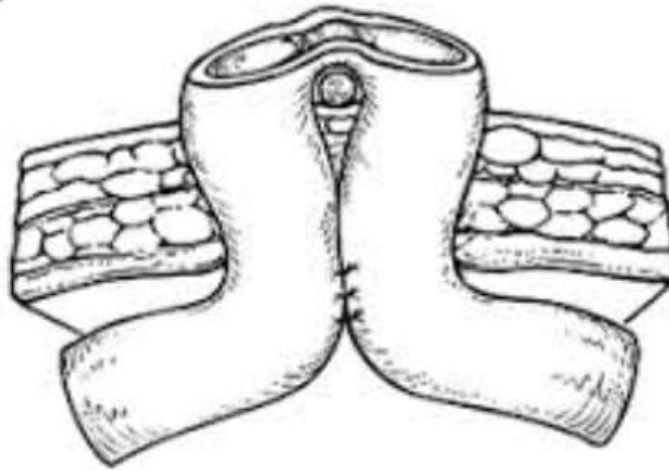


b



Stoma  
formation

e



THANKS