

# DUODENAL ATRESIA AND STENOSIS

**Dr. Narinder Singh, Associate Professor, Pediatric Surgery  
Department of Surgery**

# Duodenal atresia and stenosis

Incidence 1 in 5000-10000 live births.

More in males.

30% have associated trisomy -21.

## **Causes of Duodenal obstruction:**

1. intrinsic lesion (complete obstruction) failure to recanalization
  - a. web
  - b. atresias
  - c. stenosis
2. Extrinsic lesion (incomplete obstruction)- defective development of surrounding structures.
  - a. annular pancreas
  - b. malrotation of gut
  - c. preduodenal portal vein

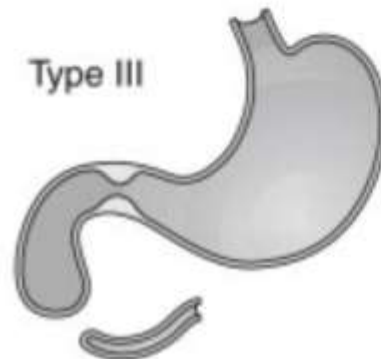
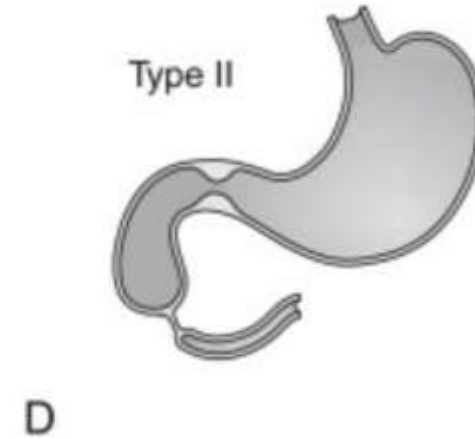
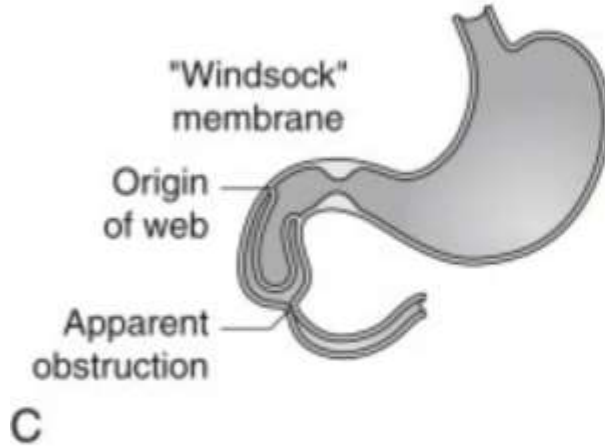
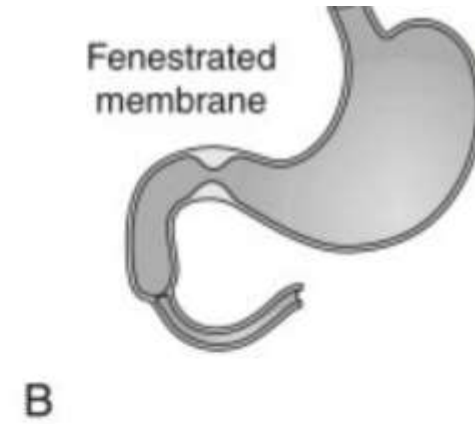
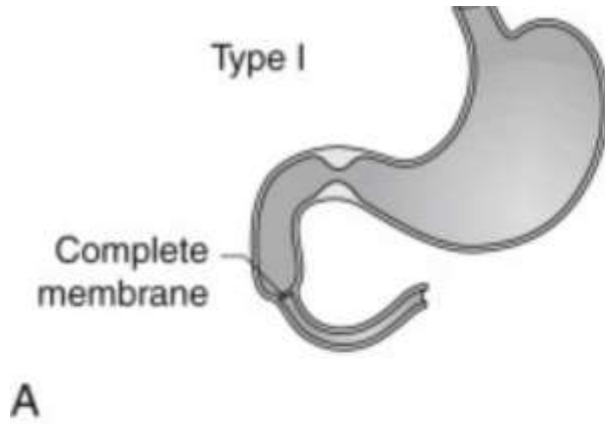
# Duodenal atresias and stenosis

- **Stenosis** - Narrowing of the duodenum usually present in 3<sup>rd</sup> or 4<sup>th</sup> portion can be associated with annular pancreas. Obstruction is incomplete.

## Atresia types:

- **Type I** - narrowing with mucosal or submucosal diaphragm which can be fenestrated with a central hole. Wind sock deformity is a special type where the diaphragm gets distended and goes distally and dilates the duodenum distal to obstruction.
- **Type II** – Dilated proximal and collapsed distal segment connected by a fibrous band.
- **Type III** – Obvious gap separating the proximal and distal segments.

# Diagram



# Pathology

- Obstruction- preampullary- non bilious vomitings  
postampullary 85%- bilious vomitings
- Stomach and duodenum become hugely dilated.
- Distal segment collapsed except 'wind sock deformity' when duodenum distal to obstruction is also dilated.

# Clinical features

- Early Presentation - Bilious vomitings within 1 hr of birth in neonates in 85% of cases.
- Upper abdominal distension with visible peristalsis.
- Rest of the abdomen looks scaphoid.
- Any neonate with more than 20% bilious aspirate is highly suggestive of obstruction.
- If patient comes late, neonate presents with dehydration, electrolyte imbalance and sepsis.

## **Late Presentation**

in duodenal stenosis/ duodenal web- when child is started on solid diet starts vomitings with gastric distension.

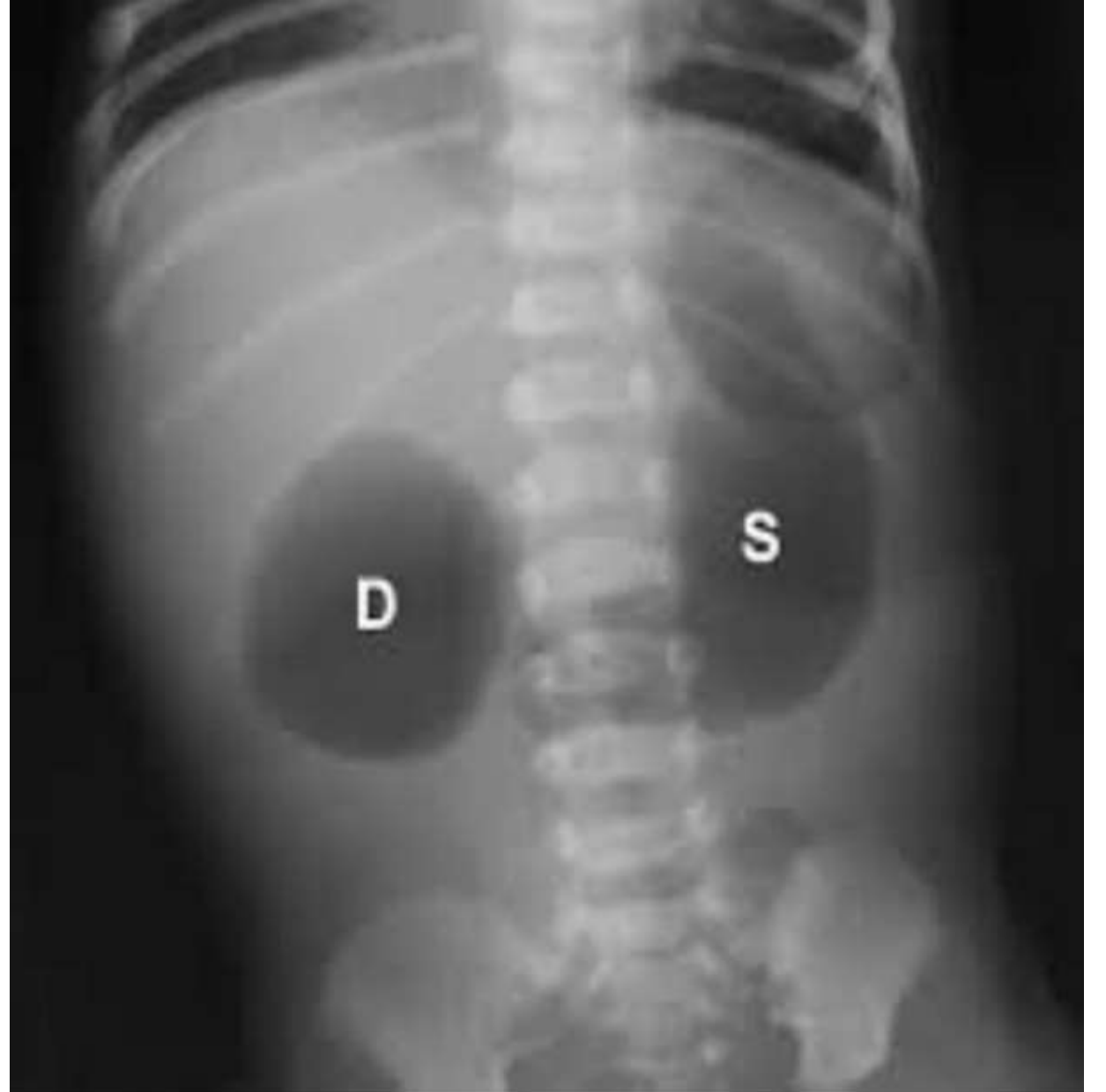
Growth retardation and failure to thrive in children.

# Diagnosis

- Antenatal history of polyhydramnios and USG showing two fluid filled structures in abdomen (stomach and duodenum).
- **Xray abdomen-** an upright x ray abdomen will show double bubble sign proximal left to midline stomach and on right side of midline dilated duodenum.
- Rest of the abdomen is gasless.
- Contrast study is rarely required in early presentation but in delayed presentation to rule out malrotation and in duodenal stenosis/web cases.



# X RAY ABDOMEN



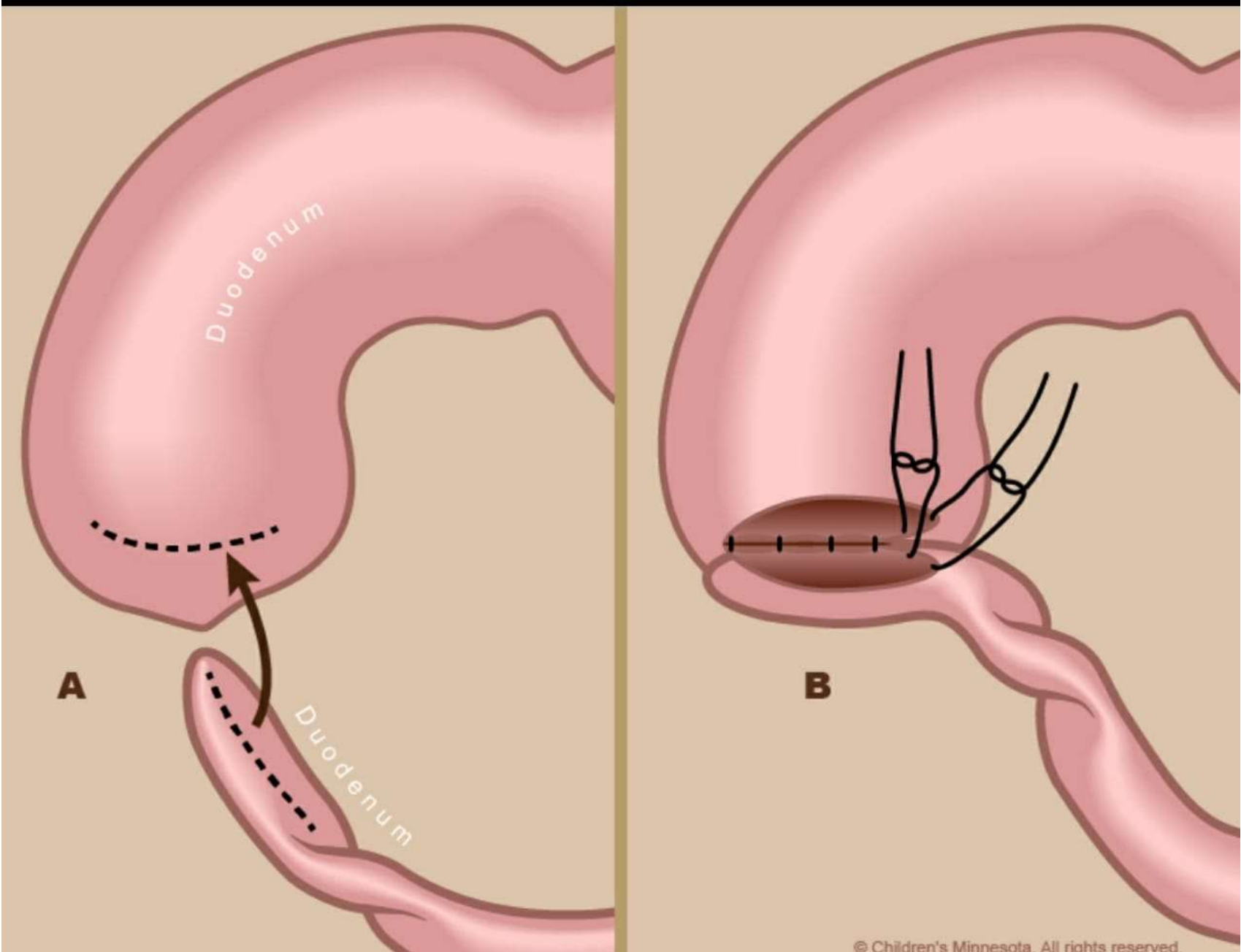
# Management

- Preoperative stabilization in NICU
- NG aspiration
- Correction of fluids and electrolyte imbalance
- Blood gas analysis and correction of acid base balance
- Antibiotics
- Echocardiography

# Operative treatment

1. Open surgery
2. Laparoscopy surgery
3. Duodenoduodenostomy is the operative procedure
4. Diamond shaped anastomosis is made between dilated proximal and non dilated distal segment.
5. Proximal incised transversely and distal longitudinally.
6. Anastomosis done with interrupted vicryl sutures

- In wind sock deformity/ duodenal web /duodenal stenosis - the duodenum is opened up vertically and web / diaphragm excised and duodenum closed transversely.
- In annular pancreas treatment is duodenoduodenostomy without dividing the pancreas.



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**THANKS**