

Gastrointestinal Tract Defects

Saathi

Date ____/____/____

(1) ESOPHAGEAL ATRESIA WITH TRACHEOESOPHAGEAL FISTULA

Esophageal atresia is a failure of the esophagus to form a continuous passage from the pharynx to the stomach during embryonic development. It is usually associated with tracheoesophageal fistula (TEF). TEF is an abnormal connection between trachea & esophagus.

These disorders are commonly found among premature or LBW infants and mothers having polyhydramnios.

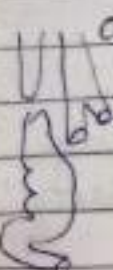
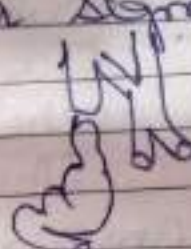
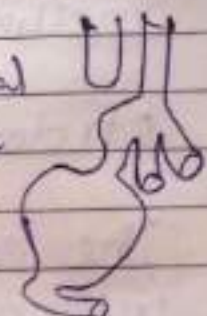
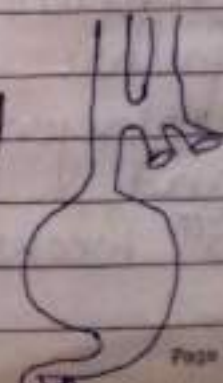
Etiology

The exact cause is not known. Some factors influencing the problem are heritable genetic factor, teratogenic stimuli and intrauterine environment.

These anomalies may develop due to aberration or deviation of the septum between the esophagus & trachea or altered growth of septum. TEF results due to failure of growth along the septum & EA develops due to deficient growth of the dorsal wall. The failure of proper separation of the embryonic channel into the esophagus and trachea occurs during 4th and 5th weeks of gestational life.

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Classification

- a) Type-I: EA without fistula. There is no connection of esophagus to trachea. The upper (proximal) segment & lower (distal) segment of esophagus are blind.
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- b) Type-II: EA with TEF (upper). Upper segment of esophagus open into trachea by a fistula. The distal or lower segment is blind.
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- c) Type-III: EA with TEF (lower). In this condition, proximal or upper segment of the esophagus has blind end. The distal lower segment of esophagus connects into trachea by a fistula.
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- d) Type-IV: EA with TEF both upper and lower segment. There is EA with fistula between both proximal & distal ends of trachea & esophagus.
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- e) Type-V: H type TEF Both proximal / upper and distal / lower segments of esophagus open into trachea by a fistula. No EA present.
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Clinical Features

- Excessive salivation (blowing bubbles)
- Constant drooling
- Large amount of secretions from nose,
- Coughing
- Choking
- Cyanosis
- Grogginess
- On the very first feed, after first or second swallow, the infant coughs, chokes or feed returns out through nose & mouth.

Diagnosis

- History Collection
- Physical examination
- USG
- X-ray
- Passing of radiopaque catheter
- Bronchoscopy

Management

Medical management

- Immediately after diagnosis, the infant should be managed with propped up position (30° angle) to prevent reflux of gastric secretion
- O_2 Therapy
- IV fluid therapy
- The blind pouch to be washed with normal saline to prevent blocking of tube with

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thick mucus

Surgical management

- Gastrotomy is performed in initial stage followed by esophageal anastomosis or colonic transplant after one year.
- Other surgical interventions include Cervical esophagostomy, esophago-cystoplasty & esophago-gastropasty.

Nursing management

- Maintenance of nutritional requirements & warmth.
- Prevention of infections.
- Preventing aspirations by positioning, suctioning ~~or~~ bed.
- Reducing parental anxiety by emotional support.
- Improving knowledge by necessary health education.

② Congenital Hypertrophic Pyloric Stenosis

Hypertrophic pyloric stenosis is a marked and progressive overgrowth or enlargement of circular muscle fibres of pylorus causing partial or total obstruction of the stomach outlet due to narrowing of the lumen.

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• Etiology

The exact cause of hypertrophic pyloric stenosis is not yet fully understood. Previously it was thought to be a congenital problem. But it is now known that the condition is not a congenital problem but an acquired condition.

The etiological factors are considered as maternal stress in last trimester, elevated prostaglandin level, deficiency of nitric acid and immature pyloric ganglion cells with abnormal muscle innervation. The local enteric innervation is involved and primarily vagovagal nitergic neurons are affected.

• Clinical Manifestations

Clinical Onset of the condition usually found in 3 to 12 weeks of age. Initially "occasional regurgitation may be found." Gradually vomiting increases in frequency and intensity. The characteristic projectile nonbilious vomiting occurs forcefully within 30 minutes of feeding. Vomitus contains milk and gastric juices but it may be blood stained and coffee ground in color.

The child presents with other classical

features like constant hunger, irritability, failure to thrive with loss of weight, constipation, decreased quantity of stools and urine output. The child is usually lethargic with shallow respiration. Stomatitis, diarrhea as greenish stools, jaundice and gastric hemorrhage occasionally may be present. Dehydration due to lack of fluid intake is a common feature.

The important clinical findings include epigastric fullness with visible peristalsis in the upper abdomen from left to right and a palpable olive shaped firm mass (2-3 cm) in epigastrium or right hypochondrium.

- Complications

The common complications are fluid and electrolyte imbalance (especially alkalosis and dehydration), hematemesis, jaundice and tetany.

- Diagnosis

History of illness and clinical examination is diagnostic. Plain X-ray abdomen, barium meal X-ray, USG, help to confirm the diagnosis. Blood examination for Hb%, serum electrolyte and urine examination may be done before surgery.

• Management

There is no medical management of the condition. Surgical management is the choice. Ramstedt's pyloromyotomy is done at the age of 4 to 5 weeks after the initial conservative management of dehydration and dyselectrolytemia. In case of pylorospasm, gastric lavage with normal saline, atropine, methyl sulfate and metaclopramide may be used.

Nursing Management

- Correct fluid & electrolyte abnormalities before surgery. Associated metabolic alkalosis (due to loss of HCl acid from stomach) should be treated.
- Stop oral feeds & do a stomach wash with normal saline to reduce edema of the gastric wall.
- After surgery, oral feeds are withheld for 10-24 hours till bowel movements are established. When baby is able to tolerate clear fluids, milk feeds are started & gradually increased in volume.