Congenital Diaphragmatic Hernia

Anatomy

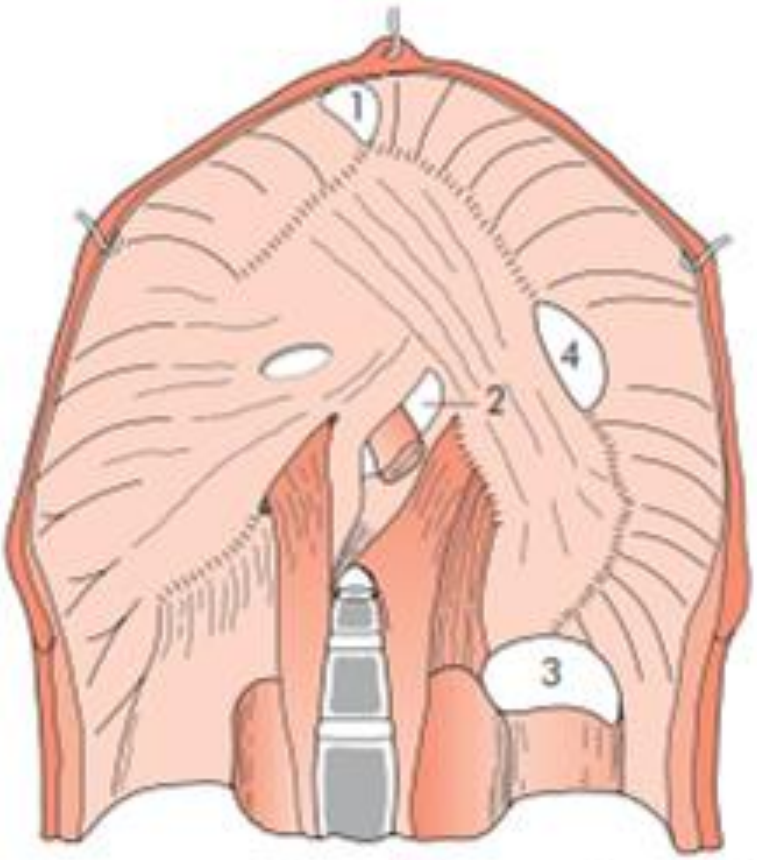
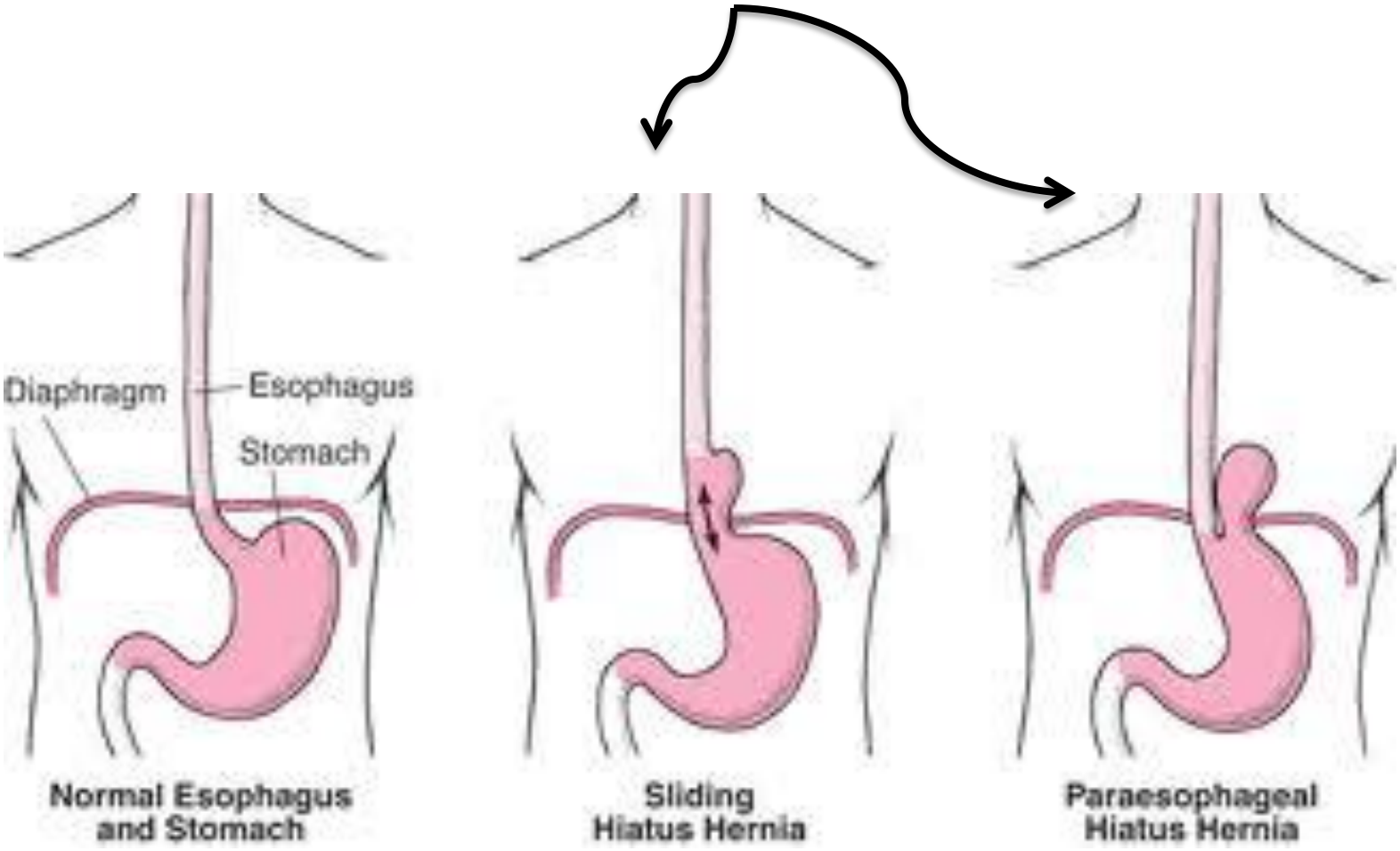


Figure 52.30 Diagram of sites of hernias. The usual sites of congenital diaphragmatic hernia: 1, foramen of Morgagni; 2, oesophageal hiatus; 3, foramen of Bochdalek (pleuroperitoneal hernia); and 4, dome

Hiatus Hernia



Congenital diaphragmatic hernia

Bochdalek Hernia

postrolateral

85-90%

80-90% Lt. side

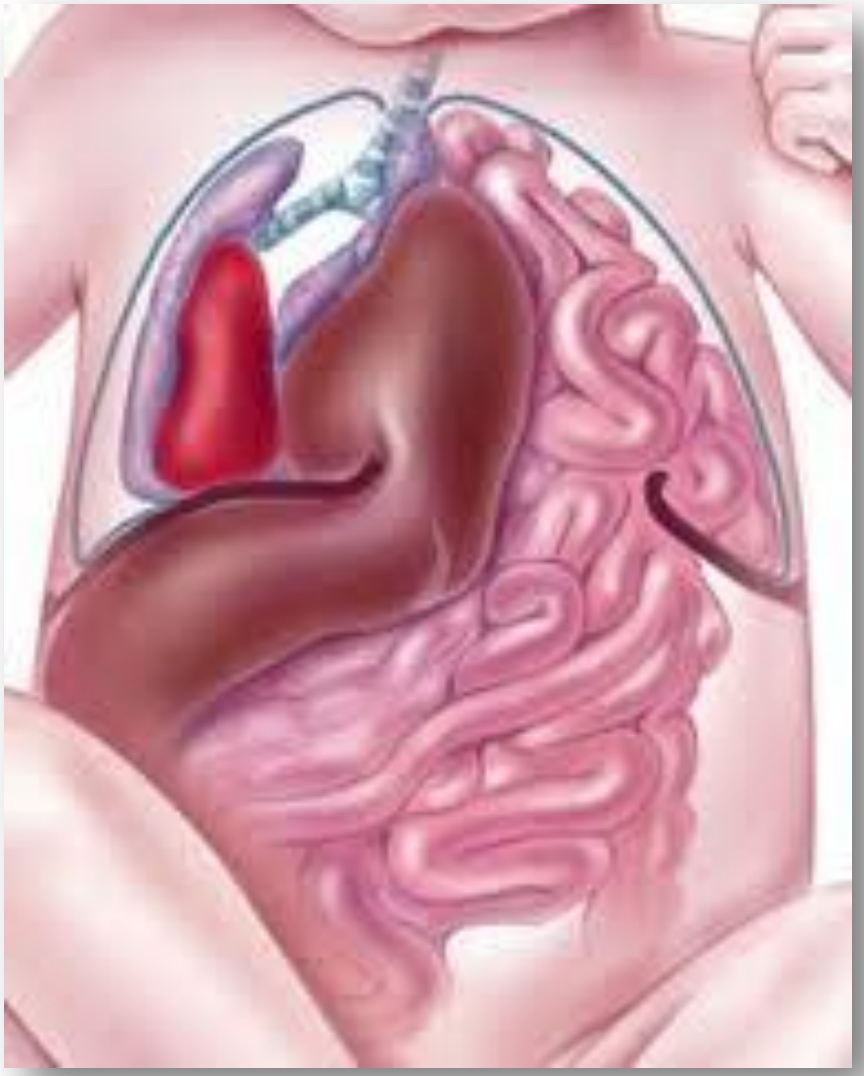
Morgagni Hernia

retrosternal

2-6%

Pathophysiology:

- Pulmonary hypoplasia.
- Pulmonary hypertension
- Persistent fetal circulation



C/F:

➢ Prenatal:

US → 24-26 wk ……. 50-60% polyhydraminous
Echogenic chest mass
bowel loops in the chest
Mediastinal shift
Intrathoracic liver

➢ Postnatal :

Immediately after birth — *low Apgar score*
tachypnea
grunting
cyanosis

Cry → worsening due to more swallowed air.

10% discovered outside the neonatal period.

Later in life — *incidentally*
recurrent chest infection

Late presentation has good prognosis due to minimal or absent pulmonary hypoplasia and hypertension.

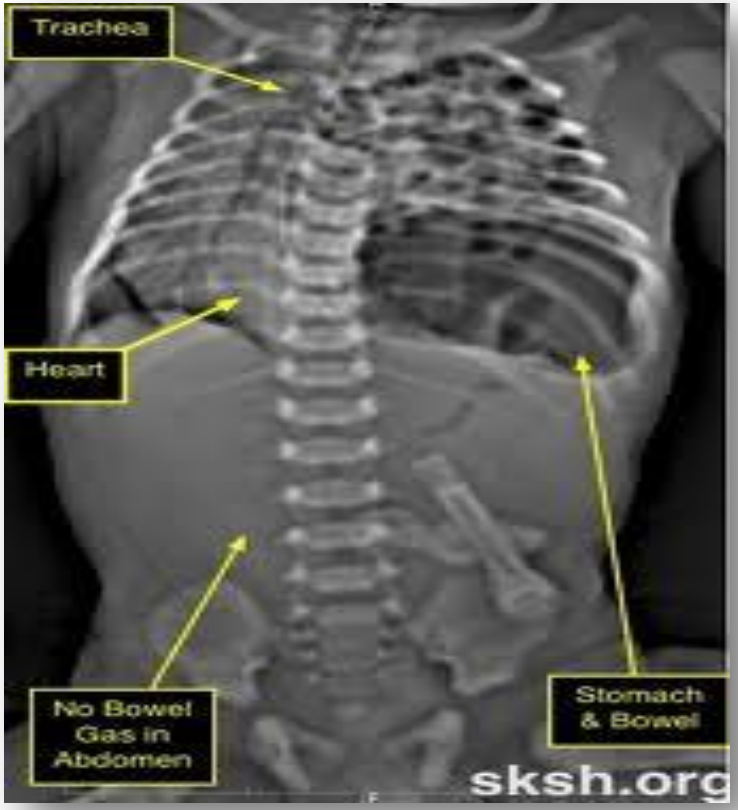
O/E:

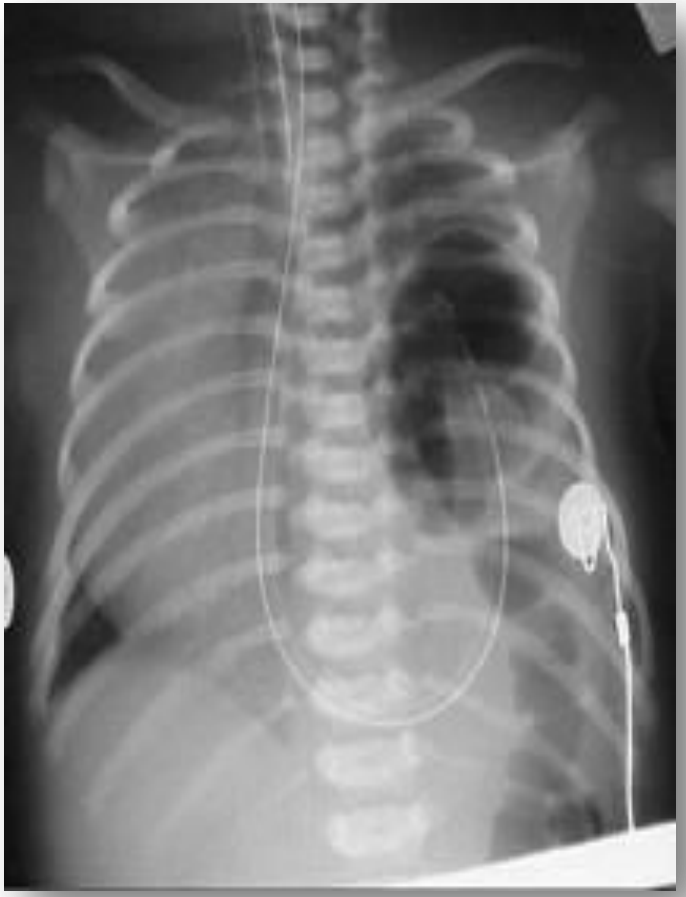
- Scaphoid abdomen.
- Increased antero-posterior diameter of the chest.
- Decreased air entry on the affected side with decreased tidal volume.
- Bowel sound may be heard in the chest.
- Shifting of cardiac impulse to the right.

Diagnosis:

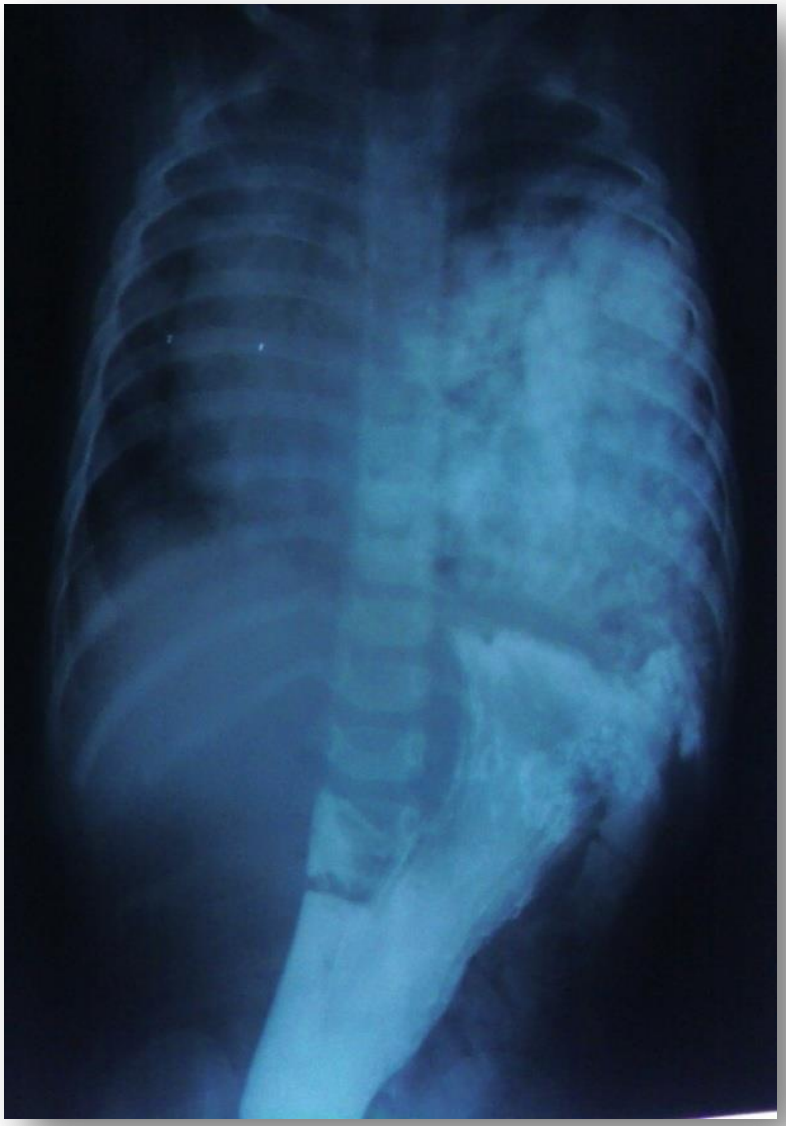
-- *CXR*

- Air & fluid filled loops of bowel in the chest.
- Paucity of intestinal gas in the abdomen.
- Mediastinal shift (heart shifted to the right).
- Tip of NG tube seen in the chest.





-- Barium study



Treatment:

➢*Resuscitation*

NG tube

Bag mask ventilation is contraindicated

Endotracheal intubation + oxygen.

Watch O_2 saturation (pulse oxymetry)

Urinary catheter

Arterial & venous line

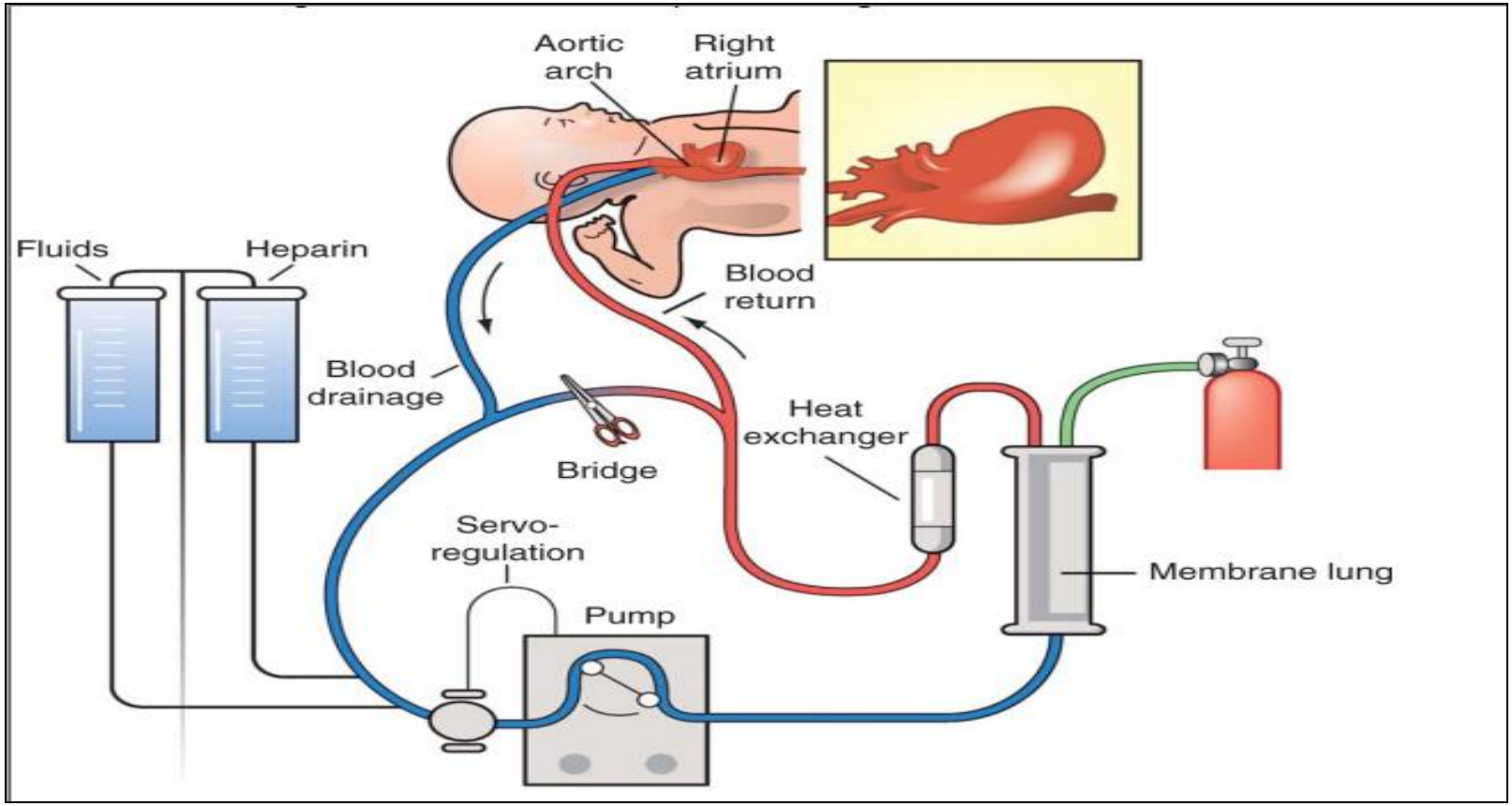
Fluid therapy

Echo study

Refer to pediatric surgical center

Therapeutic options for stabilization prior to surgery

- mechanical ventilation: high frequency oscillatory ventilation(HFOV).
- inhaled nitric oxide (NO).
- surfactant therapy.
- ECMO (extra corporeal membrane oxygenation).



- *SURGERY:*

  delayed repair

  transabdominal X transthoracic

  subcostal incision

  Reduction of hernial contents

  1^0 closure

  Prosthetic mesh

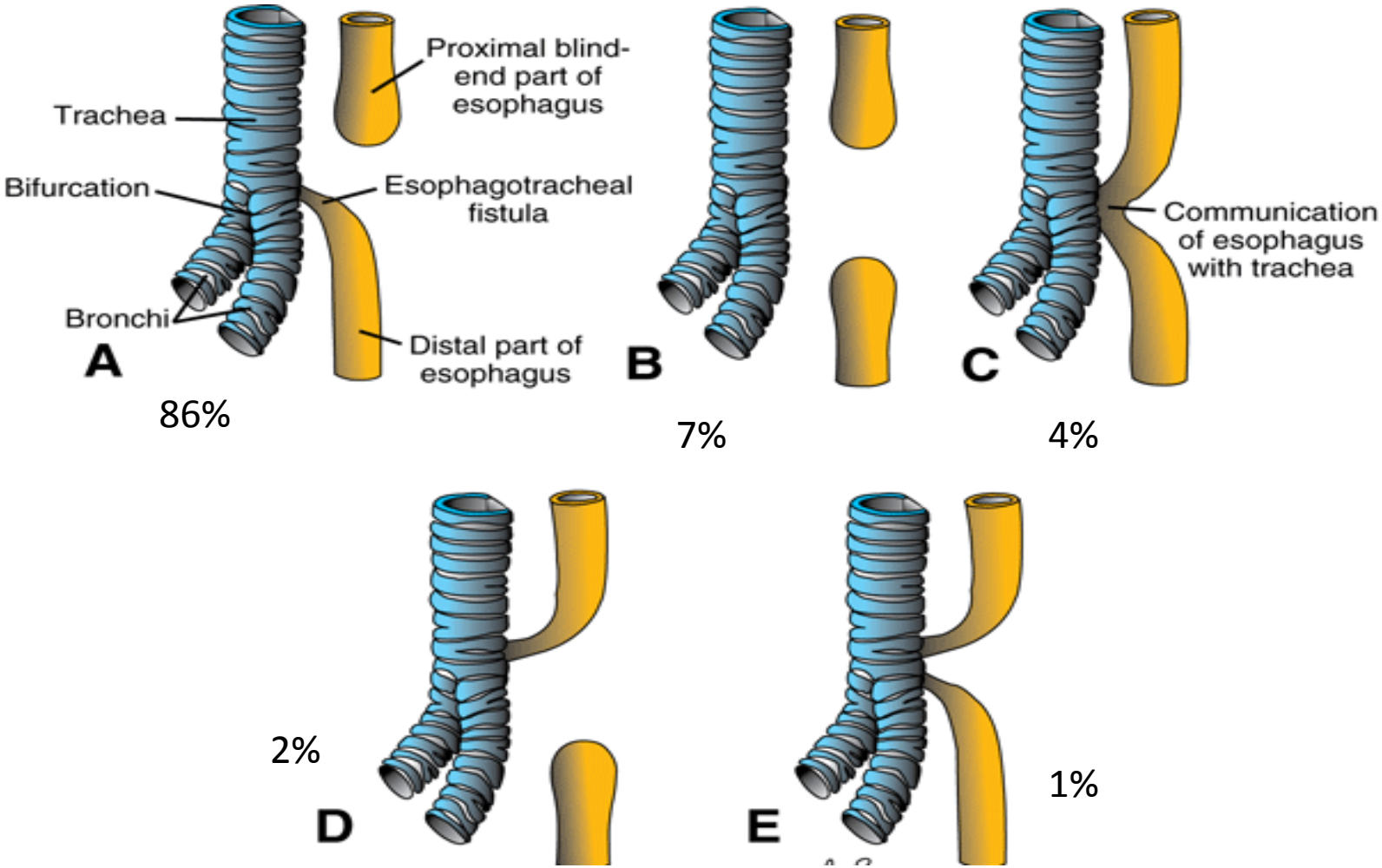
  ventral hernia for big defects

  Fetal intervention:

  1. Tracheal occlusion.
  2. Prenatal steroid.
  3. Intrauterine surgical repair.

Esophageal Atresia
+ / —
Tracheoesophageal Fistula

Classification



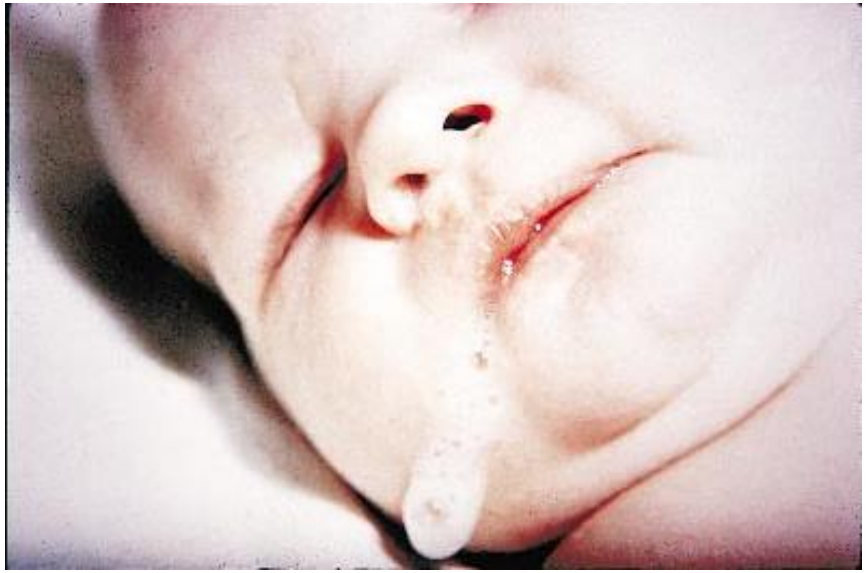
Pathophysiology :-

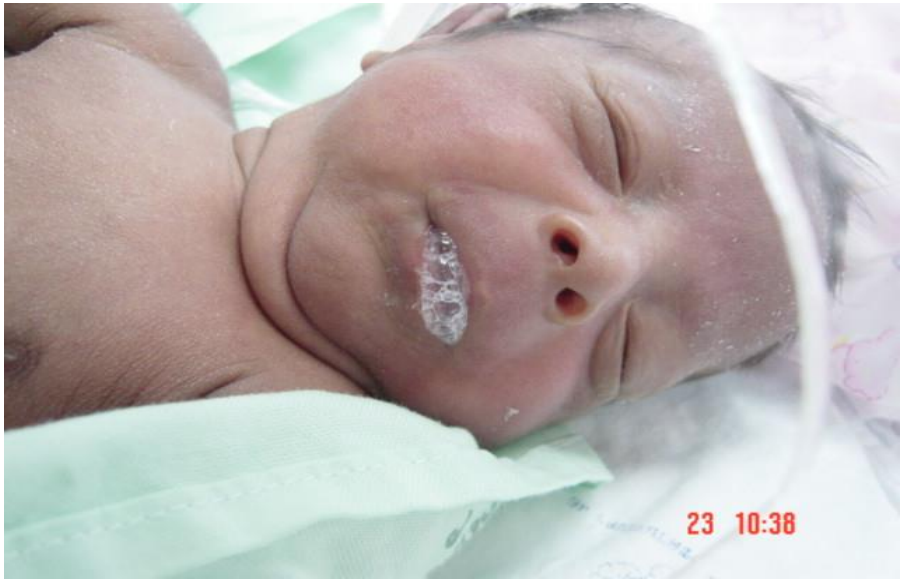
- Blind end esophageal pouch = pooled secretion.
- Fistulous connection with trachea = aspiration.
- Disordered peristalsis in lower esophagus = GERD.
- Tracheomalacia = respiratory obstrucrtion.

Presentation :-

Polyhydraminous.
Frothy secretion.
Respiratory distress.

- ➢ Resistance to NG tube insertion.
- ➢ Plain X-ray.

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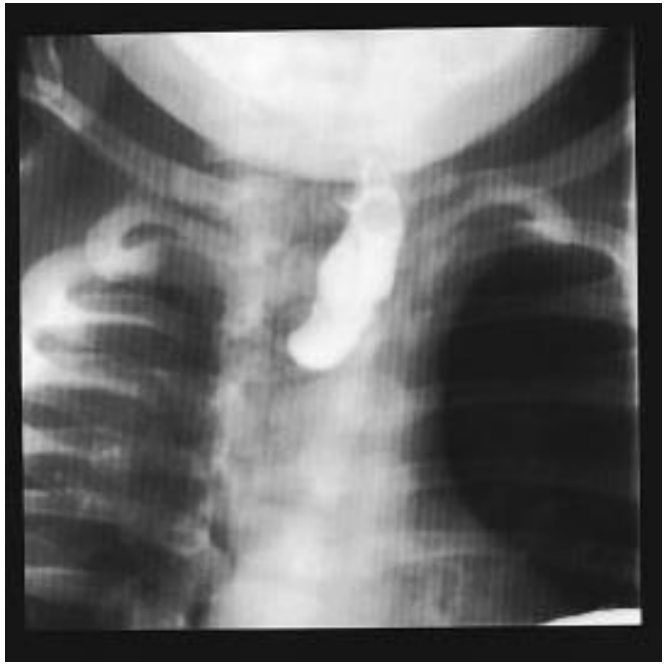
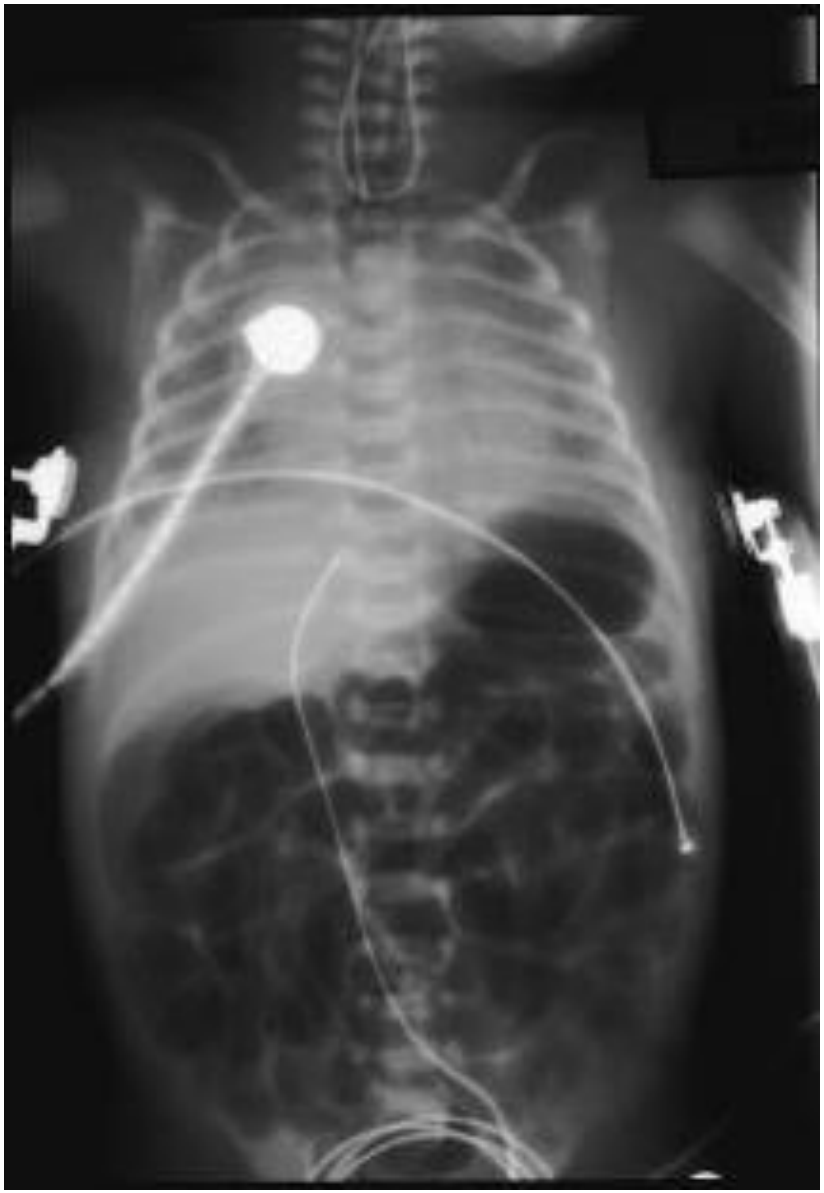
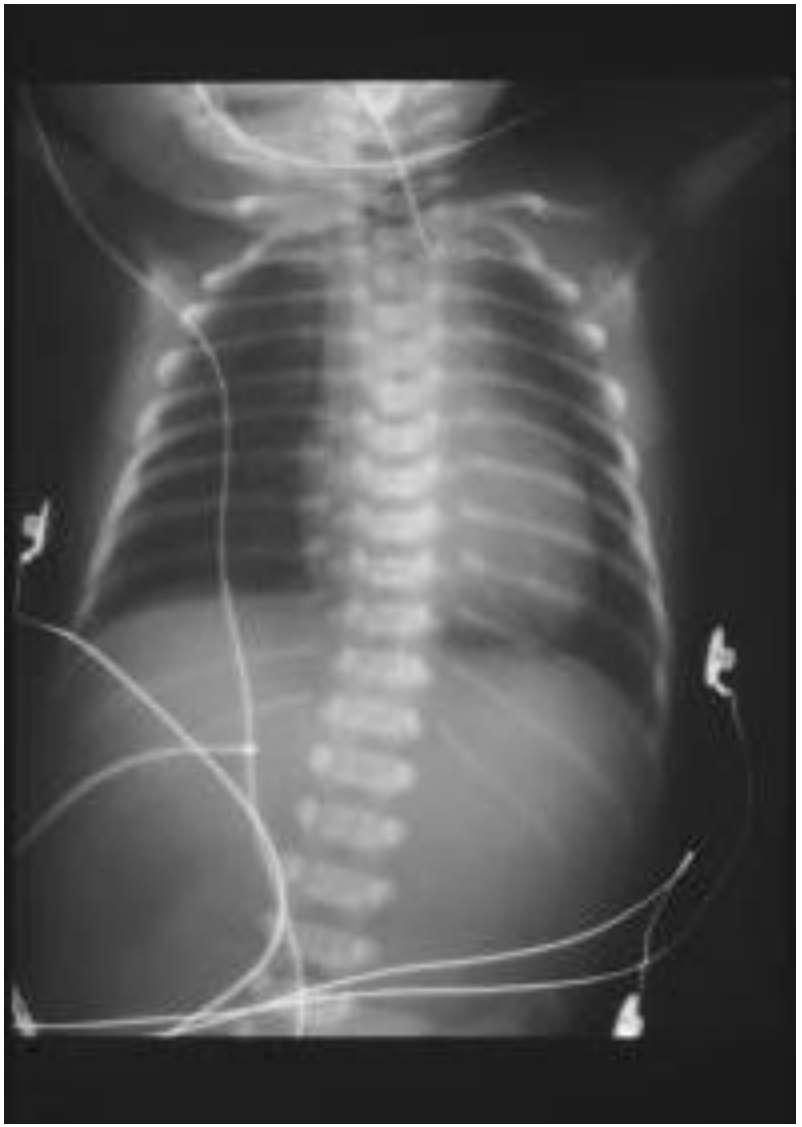
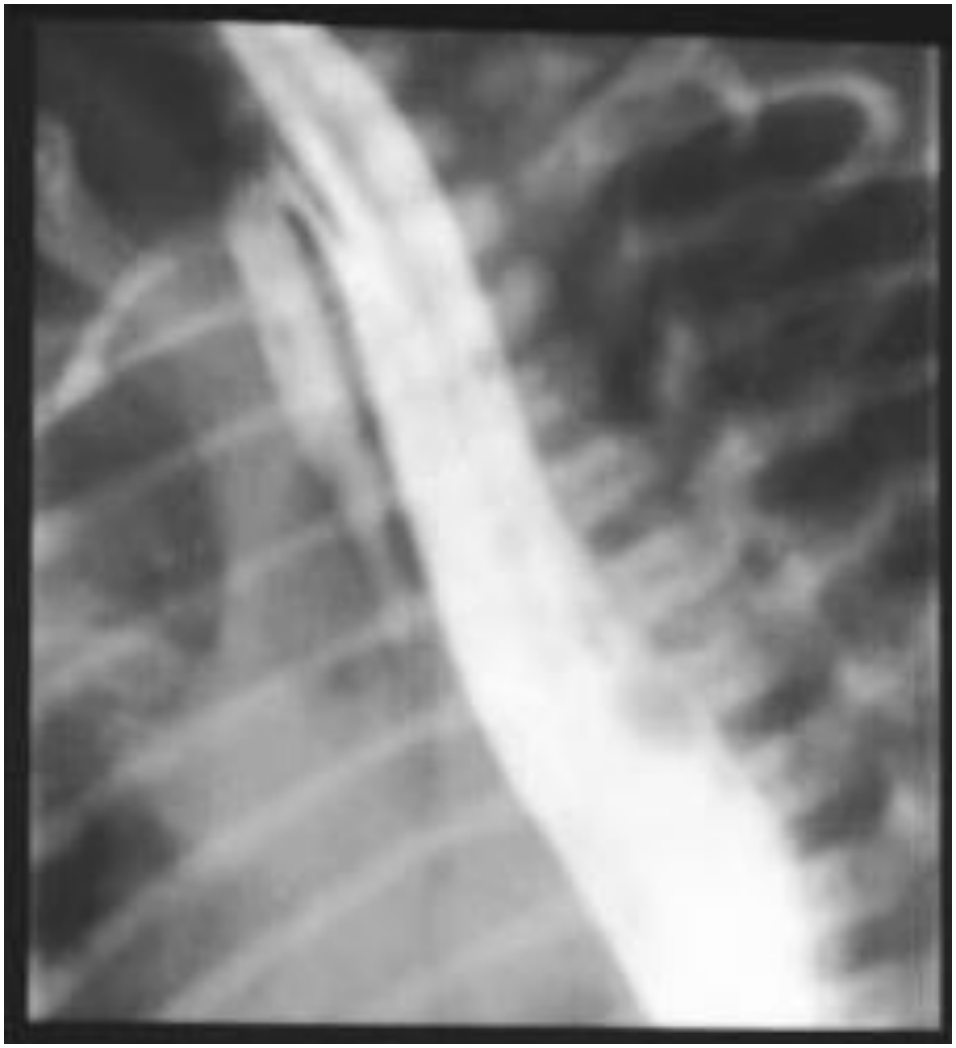
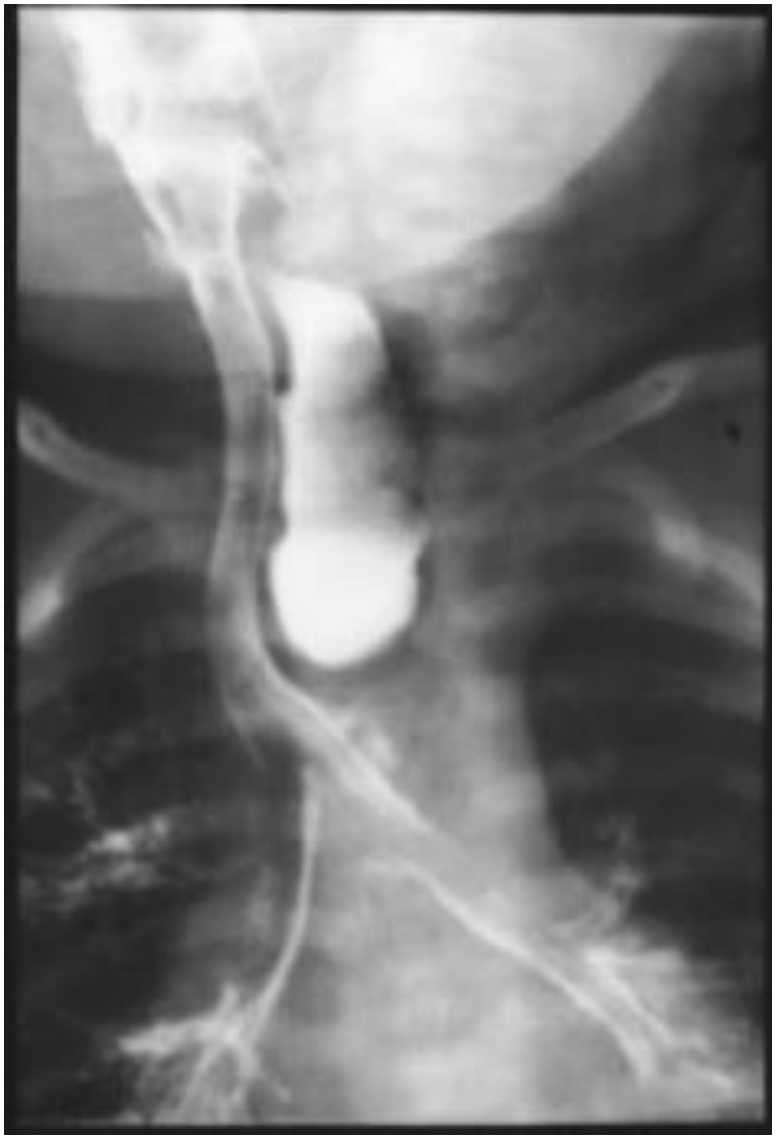










Initial management :-

Suctioning.

Positioning.

Vascular line.

Endotracheal intubation.

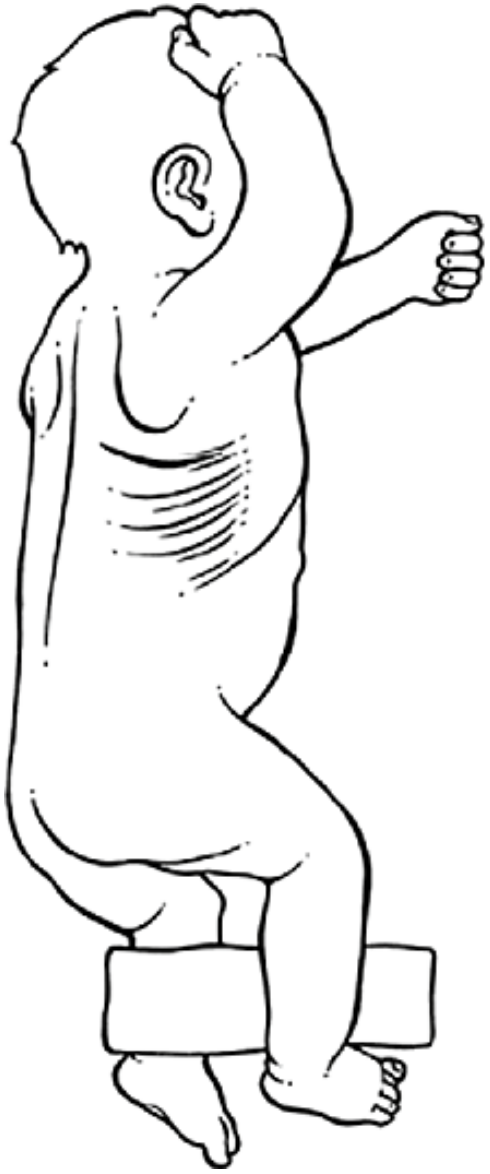
Incubator , warm , humidity.

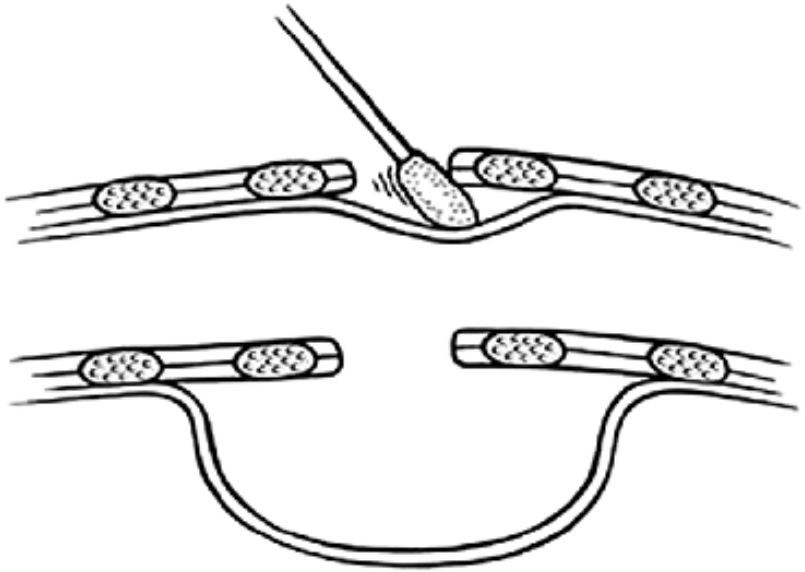
Check for associated anomalies.

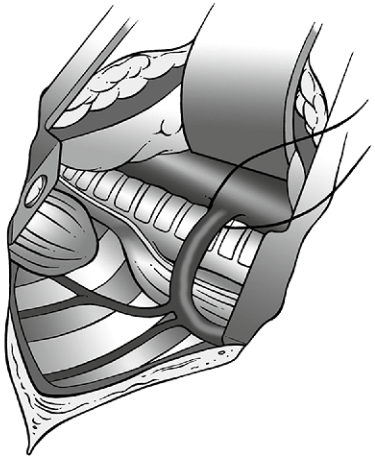
Referral to pediatric surgical center.

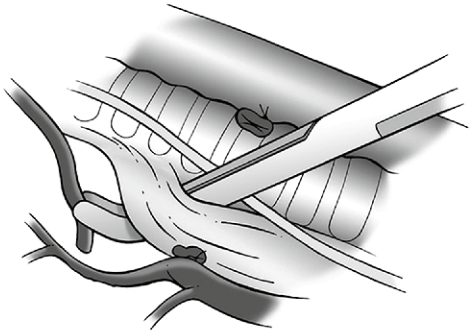
Operative management :-

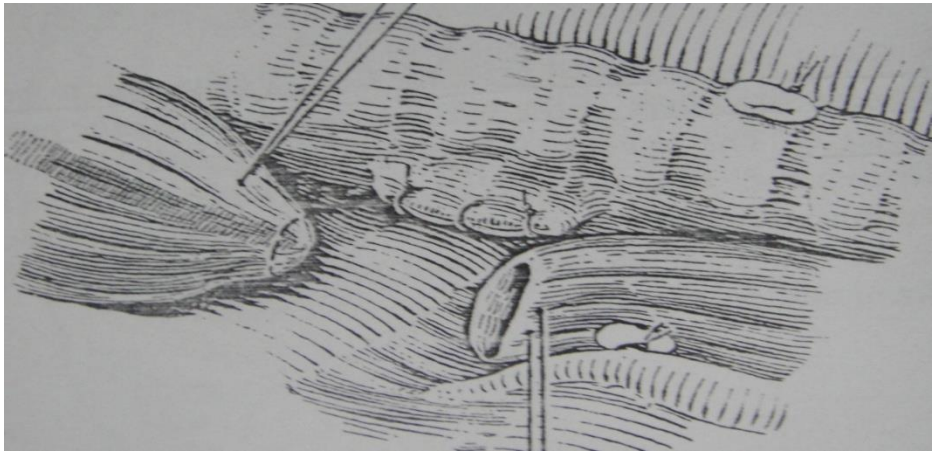
Pre-op. Echo study.
Intra-op. Esophagoscopy.
Intra-op. Bronchoscopy.
thoracotomy.

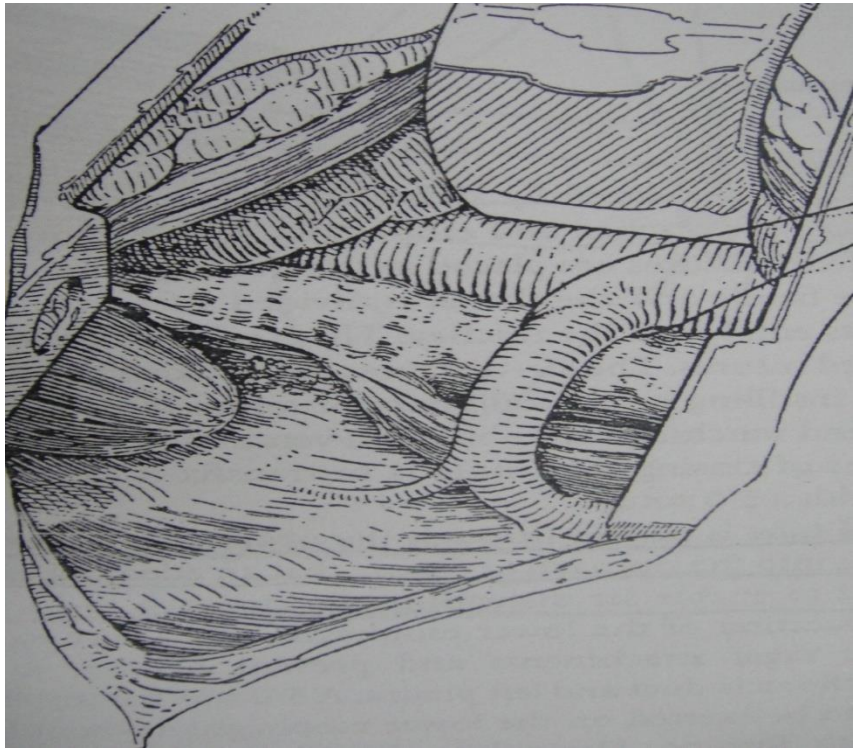


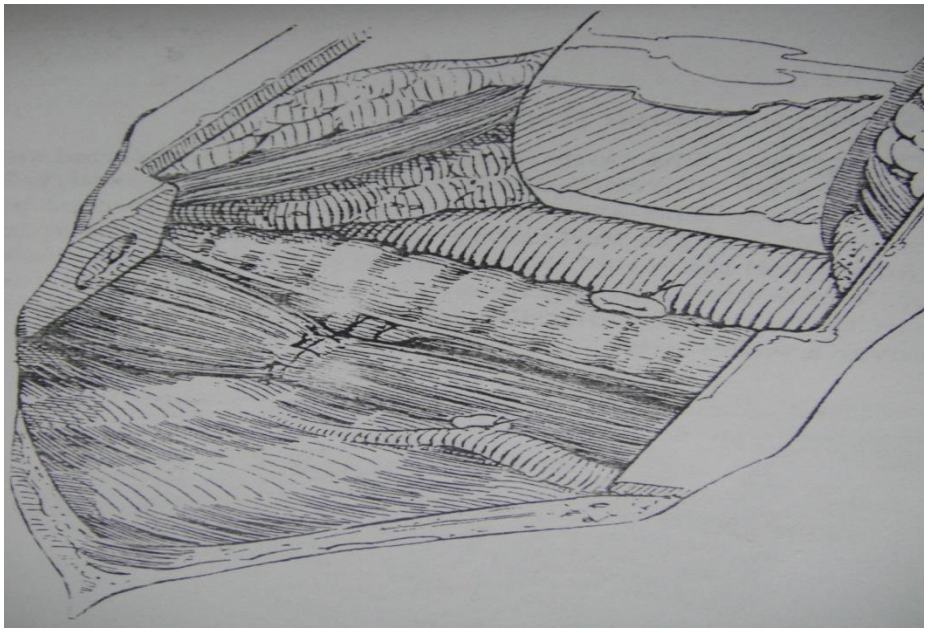


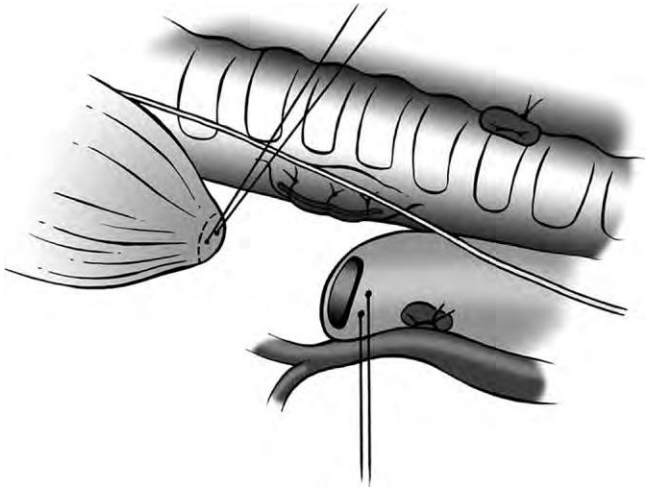


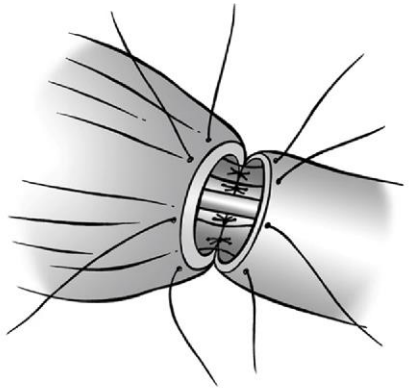


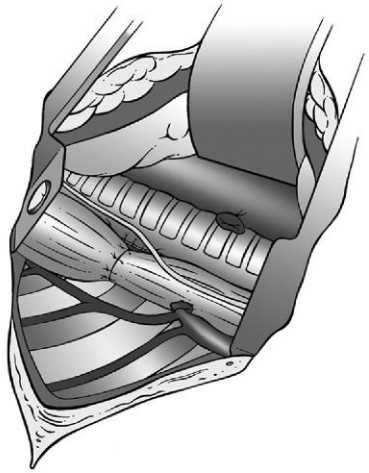












Childhood tumors

The commonest malignancies in childhood are :-

1- leukemia.

2- CNS tumors.

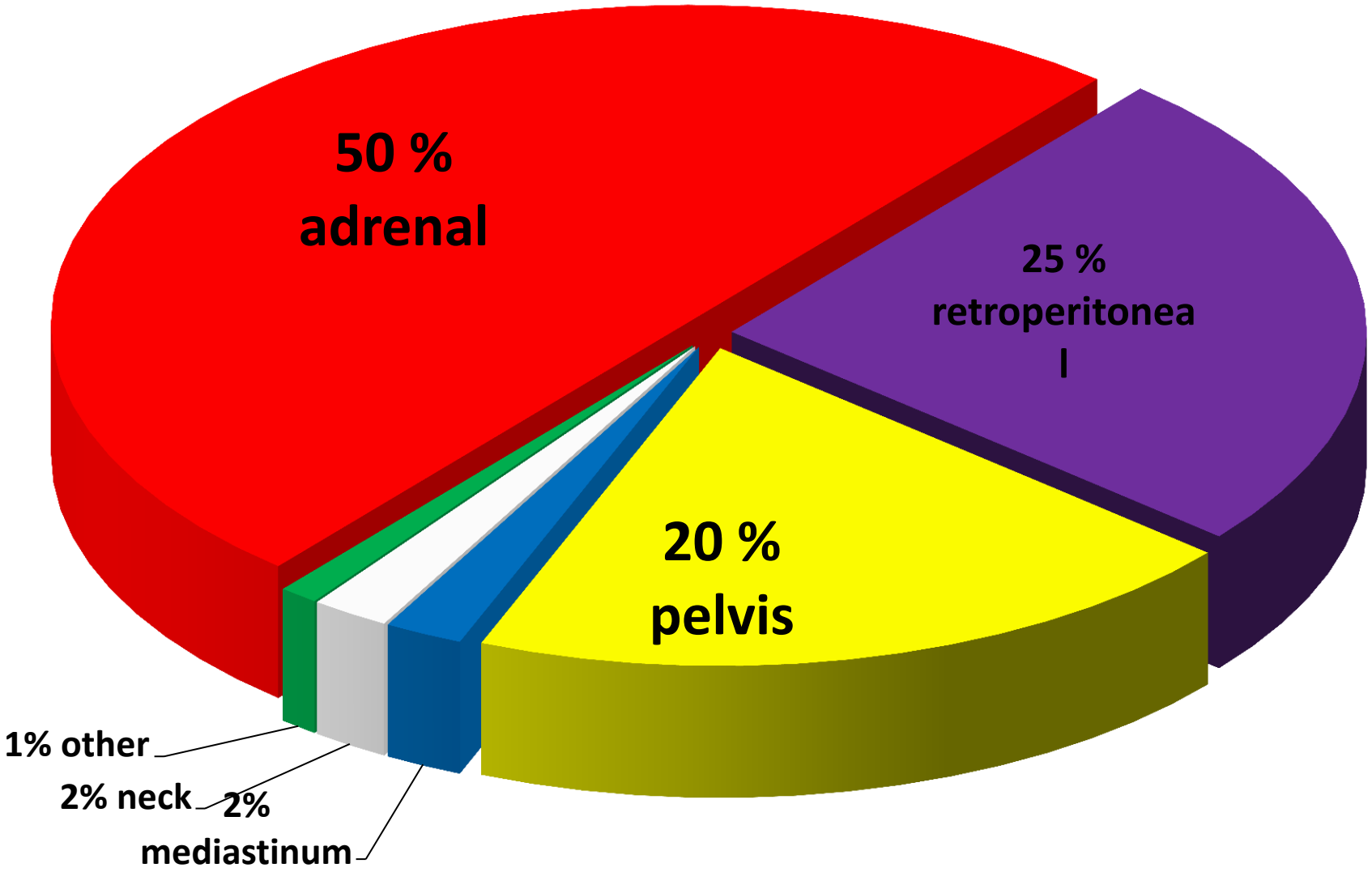
3- lymphoma.

4- neuroblastoma.

5- Wilm's tumor. (nephroblastoma).

6- the other are retinoblastoma, hepatic tumor, bone tumor, soft tissue tumor.

Neuroblastoma



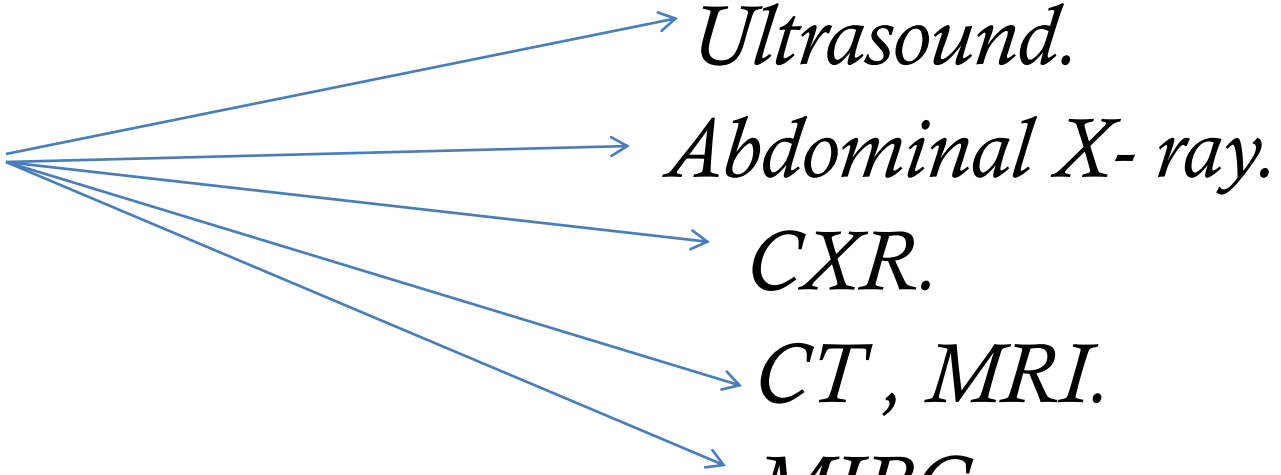
Presentation :-

Patients with NB usually present with signs and symptoms that reflect the primary site and extent of disease, although localized disease is often asymptomatic.

- Fever , weight loss , anorexia , sweating.
- Skeletal involvement (bone and joint pain).
- Orbital sign (ecchymosis and proptosis).”black eye”
- Horner syndrome.
- Pelvic involvement.
- Cervical involvement (dysphagia)

Investigation

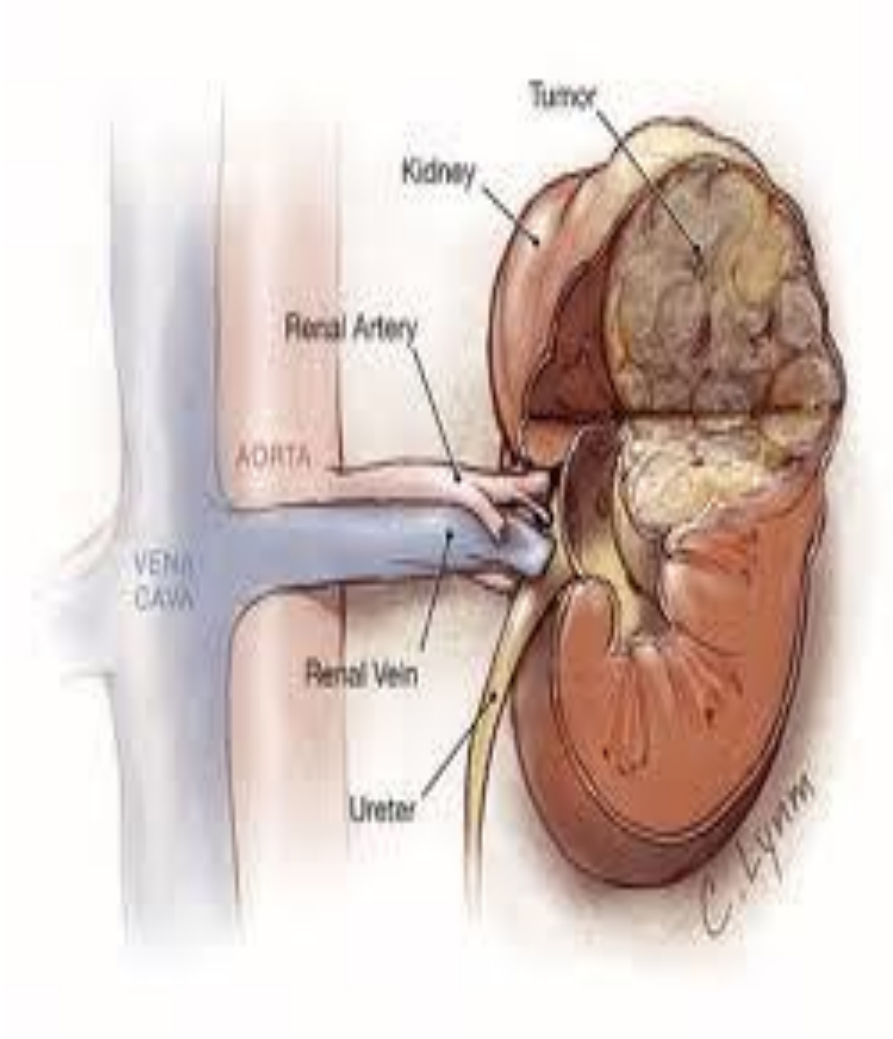
- *24 hr urinary catecholamine metabolites (VMA & HVA)*
- *Basic evaluation. (CBC, biochem., RFT, LFT, LDH, …)*
- *Imaging.*
- *Biopsy.*



TREATMENT

- MDT
- Chemotherapy.
- Surgical intervention.
- Radiotherapy.

Nephroblastoma (Wilms' tumor).



Clinical presentation :-

- ***80%*** *asymptomatic flank mass.*
- *Hematuria.*
- *Fever.*
- *Hypertension.*

TREATMENT

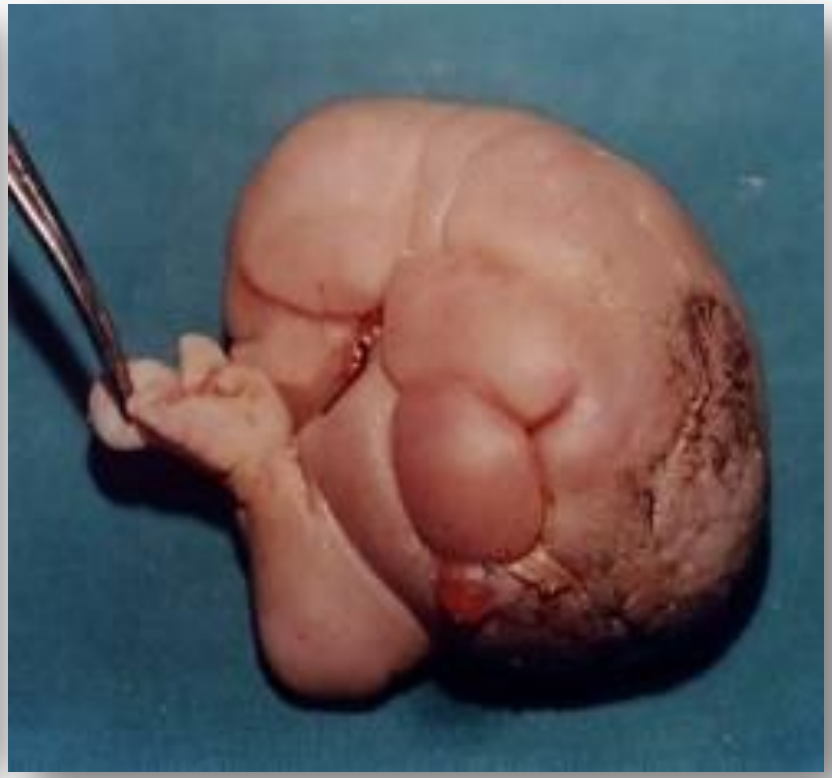
- MDT
- CHEMOTHERAPY
- SURGERY

Sacrococcygeal teratoma

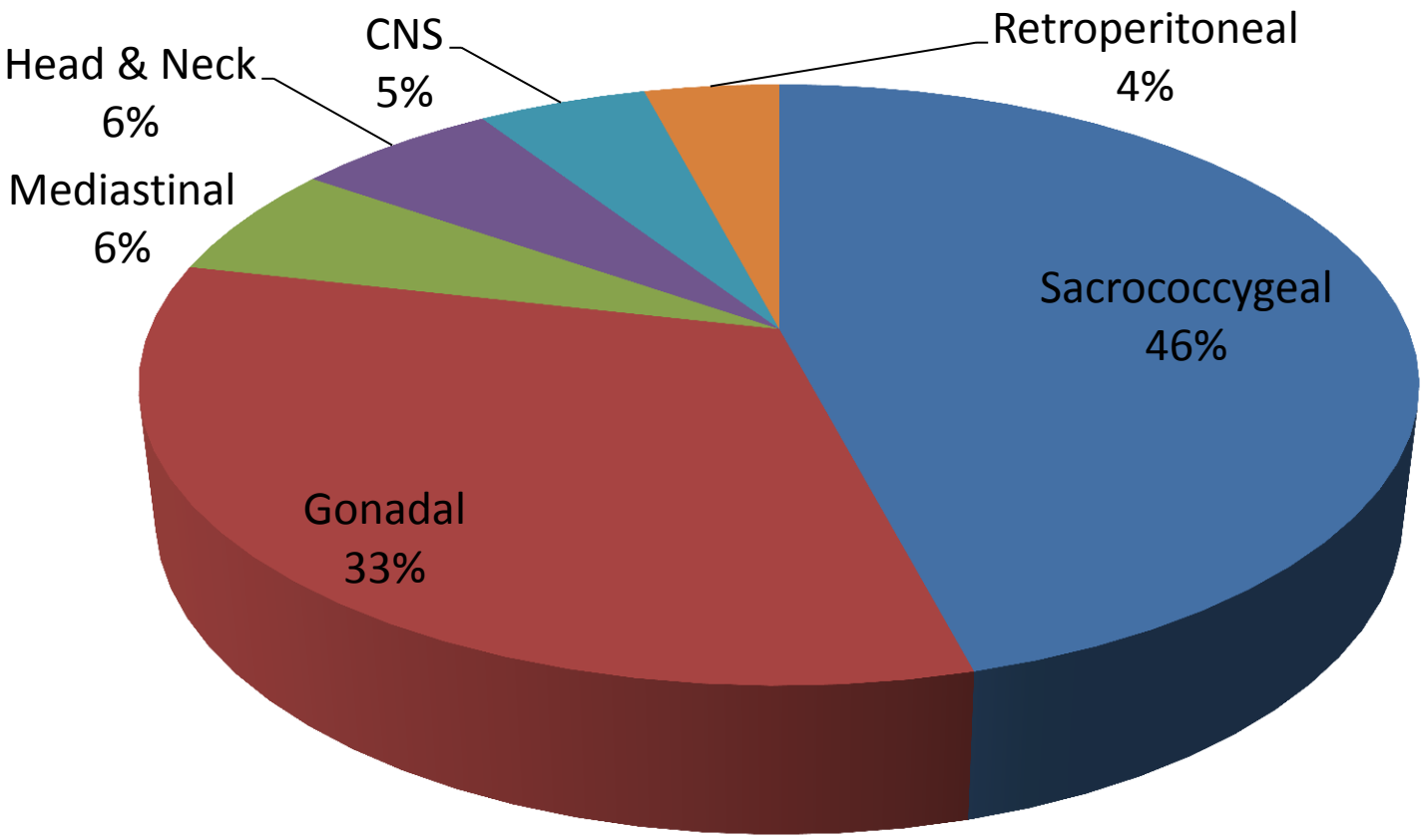
Teratos = monster.

Onkoma = swelling.

The tumor is composed of multiple tissues foreign to the site of origin.

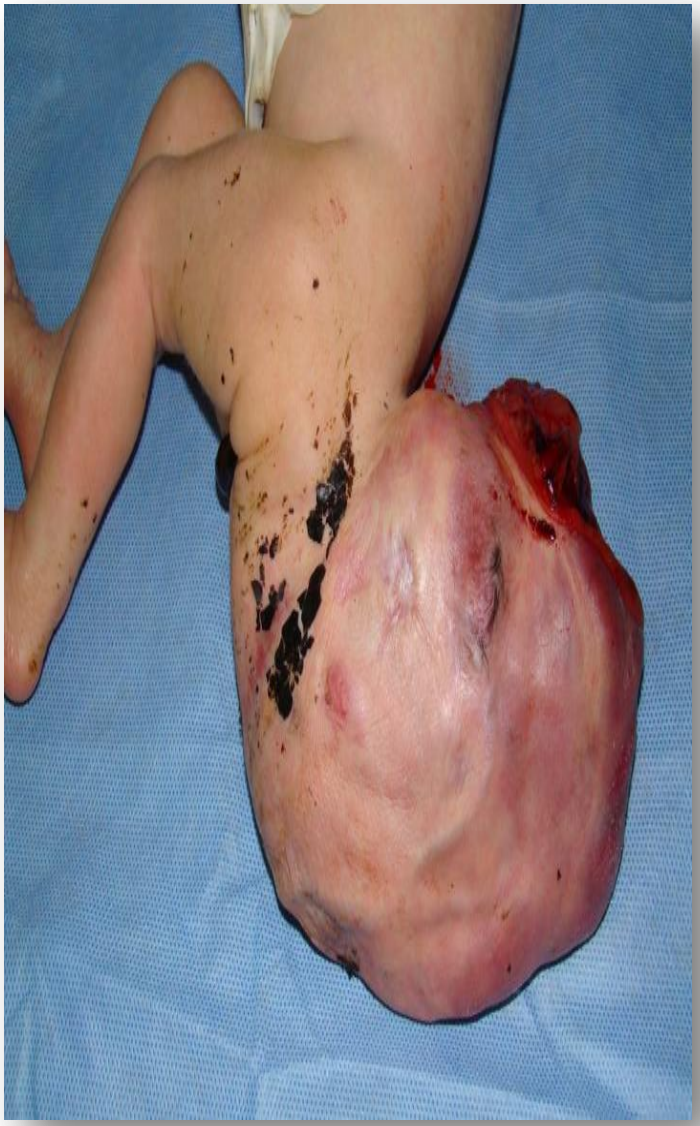


Teratoma


Retroperitoneal
4%
CNS
5%
Head & Neck
6%
Mediastinal
6%
Sacrococcygeal
46%
Gonadal
33%

Clinical presentation :-

- ✓ Visible caudal mass.
- ✓ Constipation.
- ✓ Urine retention.
- ✓ Leg edema.
- ✓ High output cardiac failure.
- ✓ Intrapartum complications.



Surgery

- ***Risk of malignancy.*** *10% birth-----75% 1 year*
- ***En bloc excision with the coccyx.***
- ***Serum tumor markers.*** *Carcinoembryonic Ag., HCG, AFP*