Umbilical Hernia

Congenital umbilical hernia (Exomphalos : Omphalocele)

Patholoqical: protrusion of a viscus or part of the viscus

through congenital defect in abdominal wall

Glinical:

1. Reducible or gives history of reducibility
2. Gives expansile impulse on cough.
3. On the anatomical site of hernia.

It presents at birth.

Etiology

. Failure of all or part of the midgut to return to the abdomen (persistence of physiological umbilical hernia)

. There is a defect in the anterior abdominal wall

Exomphalos minor

Defect: small (< 5 cm) at the umbilicus (central cord). . Sac: small (peritoneum).

. Coverinqs: Wharton's jelly and layer of amniotic membrane.

Gontent: one loop of small intestine or Meckel's diverticulum. Complications: during ligation of the umbilical cord, a loop of intestine may entangled in the ligature accidentally) resection (umbilico-enteric fistula?).

Treatment:

- Content is reduced.
- Sac is excised.
- Defect is repaired in layers

Exomphalos major

Defect: larger (> 5 cm) in the center of abdominal wall (usually supraumbilical, eccentric cord).

. Sac: large (peritoneum).

. Coverinqs: only a layer of amniotic membrane covers the sac.

. Content: any abdominal viscera e.g. liver (specifically, it is adherent to the sac), stomach, bowel, spleen...etc.

. Complications: rupture of the sac and coverings may occur) infection) peritonitis (the cause of death).

Treatment: Urgent surgerv

A. lt the abdominal cavity can accommodate the contents:

Primary closure under moderate tension is done.

B. lf the abdominal cavity can't accommodate Skin flap closure:

staged closure the contents

Gastroschisis:

It is a congenital umbilical hernia but the peritoneal sac is not intact.

The viscera may or may not be covered with amniotic membrane.

There is controversy whether to consider it a separate entity or not.

Management of gastroschisis remains the same as congenital umbilical hernia

Infantile Umbilical Hernia

Patholoqica!: protrusion of a viscus or part of the viscus through defect in abdominal wall.

Clinical

1. Reducible or gives history of reducibility.
2. Gives expansile impulse on cough.
3. On the anatomical site of hernia.

More in black

Due to Weak umbilical scar (due to infected umbilical stump, Cicatrix

Sac: peritoneum, small, conical with wide neck.

Contents: omentum, bowel or both.

Goverinqs: stretched umbilical scar & extra-peritoneal fat.

Neck of the sac is wide) rare to be strangulated

Clinical Picture of the case: painless swelling (unless complicated), characterized by:

1 . Reducible or gives history of reducibility.

2.Gives expansile impulse on cough or crying (unless complicated).

3.On the anatomical site of hernia.

B. Clinical picture of complications (if present).

C. Historv of precipitatinq factors e.g. phimosis (constricted foramen of prepuce).

treatment

Reassura nce of the parents & follow up arc the usual measures.

(The defect usually closes spontaneously within 2 years in 95% of cases)

Treatment of the precipitating factors e.g. phimosis) circumcision.

. Goin & plaster strap!!! (No need as defect closes spontaneously).

. lndications for surgical correction:

1. Large defect (> 2 fingers). 2. > 2 years old and strangulated.

) Anatomical repair with proline sutures.

Adult Umbilical Hernia [Para-umbilical)

Patholoqical: protrusion of a viscous or part of the viscous usually within peritoneal sac through a defect in linea alba immediately above (more common) or below the umbilicus.

Glinical:

Reducible or gives history of reducibility

Gives expansile impulse on cough.

the anatomical site of hernia.

Incidence and etiology

More common in middle-aged females due to multiple pregnancies.

1. Raised intra-abdominal pressure (precipitating factors) due to:

- Chronic cough. - Obesity.

2.Weak anterior abdominal wall due to: repeated pregnancy.

pathology

. Defect in the linea alba just above (more common because linea alba is wide and weak from stretch by the stomach) or below (less common) the umbilicus.
. lt does not occur in the side of the umbilicus because of the rectus abdominis muscle. . Linea alba doesn't perforate, but becomes weak & lax, so peritoneum bulges in between the weak points (i.e. it is multilobulated).

FSac:

. Has a narrow neck.
. Multi-loculated with adhesions inside the sac which are very common (especially at the fundus) rendering the hernia irreducible.

Contents:

. lt might contain omentum, transverse colon or small intestine (so, it is liable for strangulation & becomes gangrenous).

Goverings:

. Skin, subcutaneous tissue & extra-peritoneal fat

Clinical picture

Clinical picture of the case: painless swelling (unless complicated), characterized by:

1 . Reducible (directly backwards) or gives history of reducibility.

2. Gives expansile impulse on cough (unless complicated).

3.On the anatomical site of hernia.

4.The hernia may be large to the size of an orange but the neck of the sac remains dangerously small.

S.The overlying skin may be affected by intertrigo > should be treated first as it may cause post-operative wound sepsis & recurrent hernia.

B. Clinical picture of complications (if present).

C. Historv of precipitatinq factors e.g. obesity of repeated pregnancy

treatment

Surgery is the onlv method of treatment

A- Prophvlaxis: avoid predisposing factors.

B- Curative: - Treatment of predisposing factors first to avoid recurrence & TTT of intertrigo if present. - Then surqical repair is done:

1- Anatomical repair (repair of the whole linea alba).

2- Mayo's repair (repair the defect only). - lf the hernia is larqe) post-operative ventilator is advised (because reduction of a large hernia will cause respiratory distress since the abdominal cavity needs time to accommodate the content).

G- Palliative: truss is contraindicated due to high possibility of strangulation

Epigastric Hernia

Protrusion of the extra-peritoneal fat through a defect in the supra-umbilical part of linea alba and is called "fatty hernia of linea alba". lt is irreducible, giving no impulse on cough sometimes painful due to incarceration of fat. . As the protrusion enlarges, the fat pulls through the defect small peritoneal pouches which contain intestine or omentum and is called "epigastric hernia

Clinical picture

On examination: painless swelling (unless complicated), characterized by:

1- Reducible or gives history of irreducibility.

2- Gives expansile impulse on cough (usually absent early as it contains fat, fatty hernia of linea alba).

3- On the anatomical site of hernia "separated from the umbilicus by interval". . It might contains part of the greater omentum (decreases the mobility of the stomach) and gives dyspeptic symptoms resembling peptic ulcer but here there is epigastric swelling.

treatment

Prophvlaxis: avoid predisposing factors.

B- Curative:

- Treatment of predisposing factors first to avoid recurrence.
- Then, surgical repair is done:

1- Mayo's repair.

2-Anatomical vertical repair of the linea alba.

3- Mesh repair if large to avoid recurrence.

Incisional Hernia

Pre-operative

1. Weak abdominal muscles.
2. Obesity.
3. Chronic cough
4. Chronic constipation
5. Senile enlarged prostate.
6. Nature of 1ry disease e.g. peritonitis, neglected l.O. or abdominal malignancy.
7. General debilitating disease e.g. uremia, obstructive jaundice or DM

Operative

1. Excessive trauma to the tissues.
2. Bad hemostasis, with loss of > 1000 ml blood during operation.
3. The repair is too loose or too tight.
4. Vertical more than transverse incisions.
5. Muscle cutting more than muscle splitting incisions.
6. Closure of abdominal wall with absorbable sutures. lt's recommended to take good bites on either sides of the wound using non-absorbable sutures as prolene.
7. lnserlion of foreign bodies like tube drains in the main wound.

Post operative

1. Wound infection () friable tissues, consumption of nutrients, dissolve of catgut).
2. Vomiting or vigorous coughing due to bad recovery from anesthesia.
3. Early return to work.
4. Persistent precipitating factors.
5. Abdominal distension due to prolonged paralytic ileus.
6. Wound hematoma

Clinical feature

1.The cause.

2.Type of operation (especially midline & subcostal incisions), timing, postoperative period (vomiting, early ambulance, wound infection).

B- On examination: e General: anemia, obesity, chest problems or BPH. e Local:

. Scar -+ Vertical or transverse, ugly.

-+ Healing by 1v or 2ry intension.

. Hernia -+ reducible + expansile impulse with cough.

-+ lntertrigo.

-+ Defect: . Narrow & sharp liable for strangulation

treatment

Prophylactic treatment

1. Avoid the precipitating factors e.g. reduction of weight, treatment of anemia.
2. Use of non-absorbable prolene sutures in closure of the abdominal incision.

Curative

- Treatment of predisposing factors first to avoid recurrence.
- Then surgical repair is done:
  1. Anatomical repair.
  2. Maingot (Keel) repair.
  3. Tension-free hernioplasty especially if large.

Palliativ€ (abdominal corset)

' lf the operation is contra-indicated

Burst Abdomen

Complete disruption of an abdominal incision in the early post-operative period.

Etiology

As incisional hernia.

Abdomen is likelv to burst if:

. lt is swollen for any reason such as ileus, intestinal obstruction or large tumor.

. Severe intra-abdominal sepsis.

. Suturing the abdomen with absorbable sutures.

. Suturing in layers taking bites of tissues that are too small.

. Debilitating disease, e.g. uremia, obstructive jaundice or malignancies.

0 Abdomen will never burst if:

. Non-absorbable sutures.

. Taking wide bites of tissues.

. You use delayed skin suture if the wound is infected or potentially so

Clinical picture

Either partial or complete

at 6th - 8th day post-operative.

. A serosanguinous discharge is often a warning sign and called)

Red sign (most important) . The patient feels as if something gives away.

intestinal obstruction may be present.

treatment

Prophvlaxis: Avoid and treat any predisposing factor

) Complete burst

. Pre-operative measures:

1. Cover the wound with a sterile towel and warm saline.

2. NG tube + lV fluids + antibiotics

Operative:

1. Protruded intestinal loop are washed with saline and returned to the abdomen, the omentum is spread over the intestine, the abdominal wall is closed as one layer using tension "through and through" suture