Hernia in animals (5th theory surgery) lecture 6

Dr. khalaf H.A. El-Budari

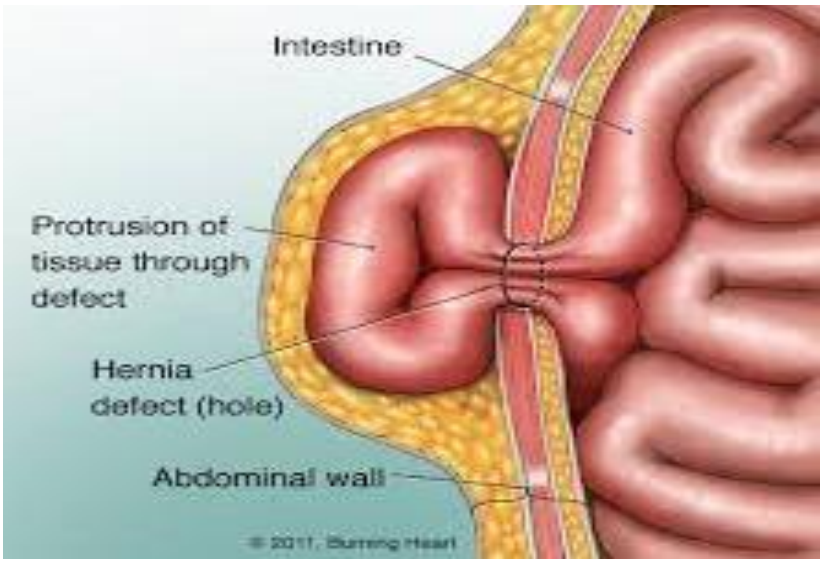
Hernia:

A condition displaced or protrusion part of viscera or organ through the wall of the cavity that containing it (intestine, stomach at a weak point in the abdominal wall like muscle).

A hernia occurs when an internal part of the body pushes through a weakness in the muscle or surrounding tissue wall.

Hernia consists of three parts:

1. **Hernial sac:** Having an inner lining of peritoneum (in abdominal cavity) and outer layer of skin and subcutaneous tissue.
2. **Hernial contents:** consisting of omentum, intestine or other viscera.
3. **Hernial ring:** an opening in the abdominal wall or other tissue which may be natural or acquired.



Classification of hernia:

A. **according to the location**: umbilical, scrotal, inguinal, perineal.

B. **according to the contents:** Enterocele, omentocele.

C. **according to the condition**: reducible, irreducible, strangulated, incarcerated.

D. **according to the cause**: traumatic, inherited, and incisional.

The Types of Hernia:

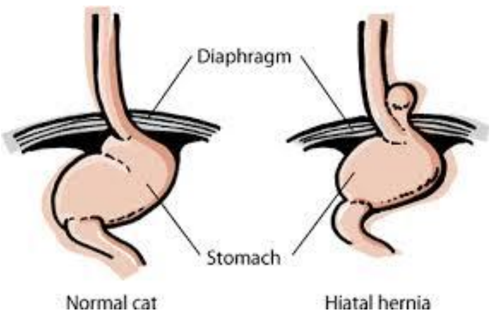
1. **Reducible Hernia:** In this type can be manually return the hernial contents into the abdominal cavity.
2. **Irreducible Hernia:** in this type, the hernial content cannot be return into the abdominal cavity. Due to complication of this type

Complication of hernia:

1. **Strangulation:**
   If the hernia orifice is narrow content may not go back easily, and later the blood flow to herniated tissue may be blocked due to constriction. This can cause dead of protruded intestine.
2. **Intestinal obstruction:**
   This occurs when the whole portion of the intestine is protruded in the hernia sac. The narrow hernia orifice will block the passage of bowels.
3. **Infection and peritonitis:**
   If there is strangulation with dead of a portion of intestine there will be spread of infection to the abdomen resulting in peritonitis.

There are two types of hernia:

A. **Internal hernia:** is protrusion of organs through a normal or



pathological opening within the abdominal cavity. There is generally no hernial sac (diaphragm hernia).

B. External hernia: Protrusion of abdominal content outside the abdominal cavity, which include inguinal, umbilical, scrotal hernias .

1. Umbilical hernia:

This hernia is common observed in young calves. The sac may be very large, while the ring is quite small. If the ring is large the contents may be affected very little.

Etiology:

a. lack of development of normal abdominal musculature.

b. Trauma.

c. Infection of umbilical area.

D.D:

a. umbilical abscess.

b. umbilical hematoma.

c. omphalophlebitis.

Treatment:

An uncomplicated hernia can be treated by pressure bandaging around the middle part of the abdomen for a few weeks.

Preparation for surgery should consist of fasting the animal for 24 hours or even 48 hours if the rumen is well filled. A longitudinal elliptical incision is made through the skin including the umbilicus and hernial mass. This is then dissected directly down towards the hernial ring After sure from the contents had been returned to abdominal cavity should be suturing the abdominal wall, the subcutaneous tissues then skin closed. After treatment consists of keeping the animal confined in a clean, dry stall.

2. **Inguinal scrotal hernia**

Inguinal hernia refer to the hernial content descend into the inguinal ring, with scrotal hernia, the hernial content descend into the scrotum.

Etiology:

1. Abdominal trauma.
2. Strenuous work.
3. Castration.
4. Hereditary.

The small intestine, mesentery, omentum may passing down through the Inguinal ring.

Diagnosis:

1. Rectal exam. To detect the organ passing down through inguinal ring.
2. physical examination.
3. Ultrasound.
4. MRI.
5. CT. Scan

Treatment:

Small hernia in size they treat by suturing the edges of the ring by an absorbable suture (Herniorrhaphy), but in case of large hernia must be used mesh to support the muscle in a technique named (Hernioplasty).

Inguinal approach over the neck of the scrotum, exposed vaginal tunica by blunt dissection after incision of skin. The tunica was opened if content intestine and other tissue healthy it is returned to abdominal cavity but when strangulated resected and anastomosis. Castration on the affected side was preferred to minimize the chance of recurrence of the hernia, suture external inguinal ring . By simple interrupted pattern with catgut. If not castrated partial closure of ring.

6. **Diaphragmatic hernia.**

It is a condition that protrusion of abdominal organs or tissue through a congenital opening or traumatic rupture in the diaphragm.

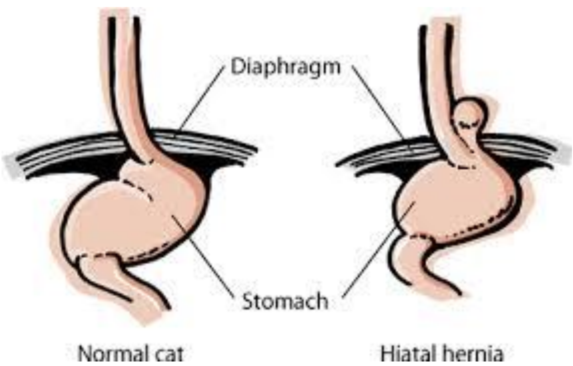
Etiology:

1. Thoracic trauma.

2. Complication of traumatic reticular peritonitis.

3. Sudden increase pressure in intra-abdominal.

4. Congenital



5. The majority of lesion occurs in the tendinous portion of the diaphragm.

Clinical signs:

1. Abdominal pain can be related to excessive tension on the mesentery due to displacement or intestinal obstruction.

2. Respiratory compromise.

Diagnosis:

1. Clinical signs.

2. Auscultation of chest cavity to discover the intestinal sound

3. laparotomy.

4. Thoracic radiography.

Treatment:

A ventral midline laparotomy approach. A mesh implant was used to repair the hernial ring. Positive pressure ventilation is obviously needed for these repair.

Prosthetic materials in hernial repair indication:

1. Weaken tissue around the hernial ring.

2. Circular hernial ring.

3. Previously repaired hernia.

Materials:

1- plastic screen.

2. Tantalum mesh.

3. Stainless steel mesh.

4. Polypropylene mesh.

Surgical Technique and Anesthetic Procedure:

Food was withheld for 24 hours and water for 12 hours before surgery. The appropriate surgical site should be was clipped free of hair, and the skin was prepared for aseptic surgical op-eration. Field block anesthesia by making walls of infiltration of 2% lidocaine hydrochloride enclosing the hernial borders was used for umbilical, small ventral hernias, and, inguinal and scrotal hernias of immature animals. For large ventral hernias, in addition to the local anesthesia, the animal may be subjected to operations under intravenous or intramuscular injection general anesthesia (for non-ruminant) whereas in ruminants they are sedated with a different type of anesthesia. The general techniques of repair in the most common type of hernia are:

1. Elliptical incisions are made through the skin on side of the sac and are joined at each end; the hernia ring is adequately exposed.
2. The patch of skin between the incisions is bluntly dis-sected from the sac and discarded.
3. The edges of the skin are reflected from the sac by blunt dissection.
4. The sac is carefully dissected from the underlying tissue. Care should be taken to avoid severing the sac and expos-ing the peritoneal cavity.
5. The hernia is reduced by pushing the sac into its nor-mal cavity.
6. The hernia ring is closed by overlapping sutures using chromic catgut with umbilical tape in case of a large ring. The edge of the ring along with fascia is fixed to the body wall with a simple continuous suture using chromic catgut.
7. The skin edge is suturing by interrupted sutures using non-absorbable suture materia