



Lecture title: Assist. Prof. Dr. Sahar Mohammed Ibrahim

Lecturer Affiliation: Dept. Surgery and Theriogenology/ College of Veterinary Medicine/ Mosul University

Summary:

Surgical affections of trachea

1. Tracheal stenosis

The lesions that may restrict the tracheal air flow could results from

1- Intraluminal tracheal lesions (space occupying lesions within tracheal lumen itself), stenotic cicatrix formation or granulation following tracheostomy, penetrating lesion into tracheal lumen, neoplastic diseases.

2- Diseases of cartilaginous tracheal rings.

3- Extra luminal tracheal lesions that compress trachea e.g. mediastinal lymph node abscessation

Clinical signs

1-Noise production

2-Exercise intolerance

3-Dyspnea

Diagnosis 1-External palpation 2-Auscultation 3-Endoscopy 4-X-ray

Treatment

1-Intraluminal lesions removed surgically, the wound leave open to heal by 2nd intention.

2-Extraluminal lesions surgically removal and closure of wounds.



Tracheal Collapse (flatting)

Is a common cause of airway obstruction especially in dogs. It is characterized by marked dorsoventral flattening of the tracheal lumen

Causes

- External trauma
- Sequel of tracheostomy
- Fracture of tracheal rings (when healing is occurring in mal alignment).
- Swelling or distortion of tissue surrounding the trachea or mediastinal lymph node abscessation.

Signs and Symptoms

- Harsh dry cough
- Difficulty breathing
- Exercise intolerance
- Abnormal noise during breathing.

Treatment

According to cause

Tracheostomy

Most cases of tracheal collapse are treated with cough suppressants, bronchodilators, corticosteroids (to control inflammation), and/or antibiotics.

Surgery is recommended if medical management produces no response in two weeks. Various surgical techniques have been described, but the application of prosthetic polypropylene rings to the outside of the trachea is the current treatment of choice.



Surgical affections of the Chest wall

1- Fractured ribs and sternum

Fractures of the ribs are uncommon however, it occur in 6-11 ribs.

Causes → Direct violence e.g. falls, kicks, and penetrating foreign bodies

Signs: → shallow breathing, pain, swelling, and crepitus sound during percussion.

Complication → 1-haemothorax or pneumothorax

2-injury to heart, lung, and blood vessels

3-injury to intercostal blood vessels with serous haematoma

4-costal fistula

Treatment → simple fracture by adhesive plaster

→ Compound fracture by fixation

2- **Costal fistula:** It could be due to 1-necrosis of ribs
2-fracture of ribs

Symptoms → discharge from the opening

Treatment → costectomy may be required

3- Sternal Fistula

This is a sinus of the sternum, due to necrosis following injury or infection of the bone or cartilage. It may be a sequel to compound fracture of the sternum or foreign body lodged in its vicinity

Signs:

Inflammatory swelling, the persisting purulent orifice and probe inserted through the latter coming in contact with the bone are characteristic.

Treatment:

1- Caustic may be tried at first

Operation to open up largely the sinuses for the removal of the diseased tissues



Varies with the region of the chest wall injured and the amount of displacement of the rib end.

- 1- Cranial rib are usually not involved, but when such fractures do occur, brachial nerve plexus injury can expect.
- 2- Swelling
- 3- Penetration of the pleura or peritoneum by a fragment of rib may be associated with visceral organ damage. Pneumothorax or hemothorax may result from such an internal injury or from an open wound to the outside.
- 4- A persistent costal fistula may follow compound fractures

Treatment

- 1- Uncomplicated fracture of the ribs are not treated, except by rest
- 2- Open wounds of the thorax or abdominal cavity are always serious and must be handled as emergencies
- 3- Costal fistula can be treated by surgical resection of the diseased rib
- 4- Compound fracture is treated on general principal

Complications

- 1- Hemothorax, or pneumothorax
- 2- Injury of heart, lung, blood vessels
- 3- Injury of intercostal blood vessels with serous hematoma
- 4- Costal fistula

Open Chest Wound

Caused in various ways and may be non-penetrating or penetrating wounds

Sings:



When a penetrating wound is very narrow, it is impossible to see the opening into the chest. But, only by the hissing noise caused by passage of air between the pleural sac and the exterior probing to assist diagnosis.

Complications:

- 1- Collapse of the lung
- 2- Pneumothorax
- 3- Pleurisy
- 4- Penetration of the lung, heart, and large vessels
- 5- Hemorrhage from opening of an intercostal artery
- 6- Penetration of the abdominal cavity

Treatment:

The same lines as recommended for wounds in general.

Intercostal Fistula

A sinus or purulent fistula on the thorax wall due to, necrosis of rib, or presence of a foreign body embedded deeply in an intercostal space

Signs: The same as in sinus

Treatment:

Remove sequestrum or foreign body when present, or curette a caried surface. The subsequent treatment is that of an open wound. Should the foregoing treatment fail in the case of extensive disease of a rib, costectomy is indicated.

Sternal Fistula



This is a sinus of the sternum, due to necrosis following injury or infection of the bone or cartilage. It may be a sequel to compound fracture of the sternum or foreign body lodged in its vicinity

Signs:

Inflammatory swelling, the persisting purulent orifice and probe inserted through the latter coming in contact with the bone are characteristic.

Treatment:

- 1- Caustic may be tried at first
- 2- Operation to open up largely the sinuses for the removal of the diseased tissues.