

ORAL CAVITY - GENERAL

The oral cavity is easily examined during clinical and postmortem examinations. A thorough examination of all structures will reveal not only local lesions but often those which may be due to systemic disease.

1. *Icterus* – The oral mucous membranes and gingiva appear yellow.
2. *Anemia* – The mucous membranes appear pale.
3. *Cyanosis* - A gray tinge to the mucosa is an indicator of inadequate oxygenation and may be a reflection of cardiovascular disease.
4. *Uremia* - Ulcers on the epithelium adjacent to the salivary duct openings are an indication of uremia.

Congenital Anomalies

Cleft palate, or *palatoschisis*, is one of the most common anomalies in calves. It is a congenital defect that occurs as a result of failure of growth and fusion of the palatine shelves from the maxillary processes. Consequently, a “cleft” or central defect allows oral and nasal cavities to communicate in the hard palate area, which makes for problems, like can’t suckle, and/or stuff headed for the stomach goes to lungs instead.

Anomalies in the growth of the jaws are quite common.

1. *Agnathia* is the absence of the mandible altogether. Not compatible with life.
2. *Brachygnathia* (shortened jaw) and *prognathia* (lengthened jaw) are named according to where they occur. That is, picture on the left is mandibular brachygnathia or brachygnathia inferior. The picture on the right is mandibular prognathia or prognathia inferior.



Brachygnathia (shortened jaw)



prognathia (lengthened jaw)

Inflammation of the oral cavity

The general word for inflammation of the oral cavity is **stomatitis**. Inflammatory processes may be localized to specific tissue and given specific names *See the list below*.

lips – cheilitis

pharynx – pharyngitis

tongue – glossitis

gums – gingivitis

tonsils – tonsillitis

Types of stomatitis:

A). Infectious stomatitis:

1). Thrush, or oral candidiasis: It is a mycotic infection occurred due to infection with *Candida albicans* which consider normal flora of oral cavity, If the balance becomes altered, the endogenous flora may take advantage of the situation and proliferate to cause disease. It is a common indicator of severe immunosuppression and may be associated with severe stress.

2). **Wooden tongue:** - Caused by *Actinobacillus lignieresii*, it is a granulomatous reaction in the deep tissues of the tongue, in cattle. This organism is part of the normal oral flora; when the defenses are disrupted, such as might happen with a penetrating wound, the organism is allowed access to deeper structures, and incites this granulomatous reaction.

The tissue becomes very firm, so much so that the common name for this disease is "wooden tongue." Sometimes yellow granules are seen grossly in this inflammation - these are called "sulfur granules", are very characteristic, and consist of individual inflammatory foci with abundant bacteria.



Wooden tongue, tongue becomes so firm with the presence of sulfur granules

3). **"lumpy jaw: ."** It often causes a grossly disfigured mandible, hence the name. The cause is *Actinomyces bovis*. This organism also is common in the oral cavity but with a penetrating wound will move even farther than *A. lignieresii* cares to venture, and will destroy bone. The main lesion is a pyogranulomatous osteomyelitis, with disfigurement of the mandible.



4).Necrotizing Stomatitis: caused by *Fusobacterium necrophorum* which is an anaerobe that commonly found in the oral cavity and will get in to cause trouble whenever possible. The hallmark of inflammation with this organism is necrosis. It is a supreme secondary invader, often coming in to complicate and prolong a simple ulceration due to trauma or viral infection that, without the aid of *F. necrophorum*, would heal simply

B) Toxic stomatitis:

- ☞ Many plants can cause a toxic stomatitis due to the corrosive properties in their leaves or stems. *Diffenbachia*, *Croton* and *Caladium* spp. (elephant ear) are all plants that can cause a toxic glossitis and stomatitis.
- ☞ *Uremia* is an important endogenous toxin that leads to oral ulceration. The oral ulcers due to uremia are fairly typical and occur opposite salivary gland openings on tongue and oral mucosa. Uremic “toxins” excreted in saliva react with bicarbs (also in saliva),

DISORDERS OF THE ESOPHAGUS

DYSPHAGIA

Dysphagia is the term for disorders of swallowing. Since swallowing is a highly complex activity, it is divided into three phases. A disorder in any of these 3 phases may cause difficulty in swallowing, or dysphagia.

1. *Oral phase dysphagia* is caused by lesions in the oral cavity or tongue. Any lesion or abnormality which interferes with the delivery of the bolus to the pharynx will cause oral phase dysphagia. Stomatitis, glossitis, gingivitis, and cleft palate are all examples. A cow with foot-and-mouth disease that is drooling liters of saliva has oral dysphagia.

2. *Pharyngeal phase dysphagia* can be caused by pain in the pharyngeal region (from pharyngitis, tonsillitis, abscesses) or proliferative masses that intrude on the pharyngeal space causing inability to swallow. Neuromuscular diseases affecting the tongue and pharynx can cause dysphagia.

3. *The third phase of swallowing involves the esophagus.* The bolus must enter the esophagus - if the esophagus fails to dilate or the upper esophageal sphincter does not accept the bolus, it is *esophageal dysphagia*. Most commonly, this is a result of a neurologic defect and the disorder is termed *achalasia*.

Megaesophagus :it means dilatation of the esophagus, Megaesophagus may be due to a congenital defect or may be an adult-onset, acquired disorder,in both the muscles of esophagus fail to force food into the stomach, The frequency of regurgitation occurred, Regurgitation associated with megaesophagus occurs several minutes to several hours after feeding.

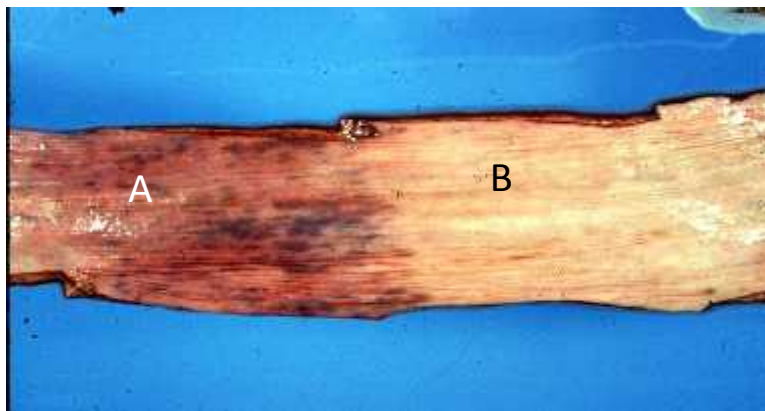
Megaesophagus occurs predominantly in dogs. It can be congenital (born that way) or it can occur as a result of a neurologic problem later in life.

CHOKES

The lodging of foreign bodies in the esophagus, a.k.a. “choke,” is a notorious cause of esophageal obstruction in cattle and horses. Both cattle and horses have a tendency to try to swallow items larger than they should. When these objects become lodged in the esophagus, obstruction results. In cattle, this can be an emergency, because if cattle can't eructate and release gas from their rumen, they bloat and bloat is life threatening.

Bloat will be covered in more detail in the section on forestomachs. However, the characteristic postmortem lesion of bloat is present in the

esophagus so we'll cover that here. The pathognomonic lesion of bloat is a "*bloat line*" that occurs at the thoracic inlet in cattle that bloat. It's not really a line, but rather a border. The increased thoracic pressure from the rumenal distention results in esophageal ischemia (in the thoracic part), while the esophagus in the neck region is normal or congested. So, there is a line at the thoracic inlet, separating congested from ischemic tissues.



Bloat line; separating ischemic tissues (A) from congested or normal tissues (B)

A complication of choke occurs when the stuck object presses against the esophagus hard enough to cause *segmental necrosis*. This leads to ulceration. And, if the necrosis is severe enough, scarring occurs and there is a stricture left. These *strictures* can hinder an animal's production for the rest of its life. Another sequela to having a foreign body in the esophagus is that a *diverticulum* will form, that is, the foreign body will push hard enough on the mucosa that it herniates through the muscularis and develop a fibrous wall surrounding it. This is better than the alternative which is that the foreign body pushes through the esophagus so that the esophagus perforates completely (esophageal fistula) and the foreign body ends up in the adventitia and can incite a tremendous cellulitis and, if within the thorax, severe thoracic inflammation.