

Calf diphtheria

Calf diphtheria
(Oral necrobacillosis)
(Necrotic stomatitis,
Necrotic laryngitis)

- It is a bacterial disease of beef calves, and housed lambs
- characterized by an acute necrotizing ulcerative inflammation of the buccal and pharyngeal mucosa, and also of the laryngeal mucosa.
- It is frequently fatal in young animals, in which extension often occurs to other organs.

Cause

Fusobacterium necrophorum

❖ usually a secondary invader following previous mucosal damage, that may include trauma, infectious bovine rhinotracheitis, papular stomatitis and in the gums about erupting teeth.

Clinical Signs

- fever
- anorexia
- depression
- moist painful cough
- dysphagia
- inspiratory dyspnea

Gross Findings

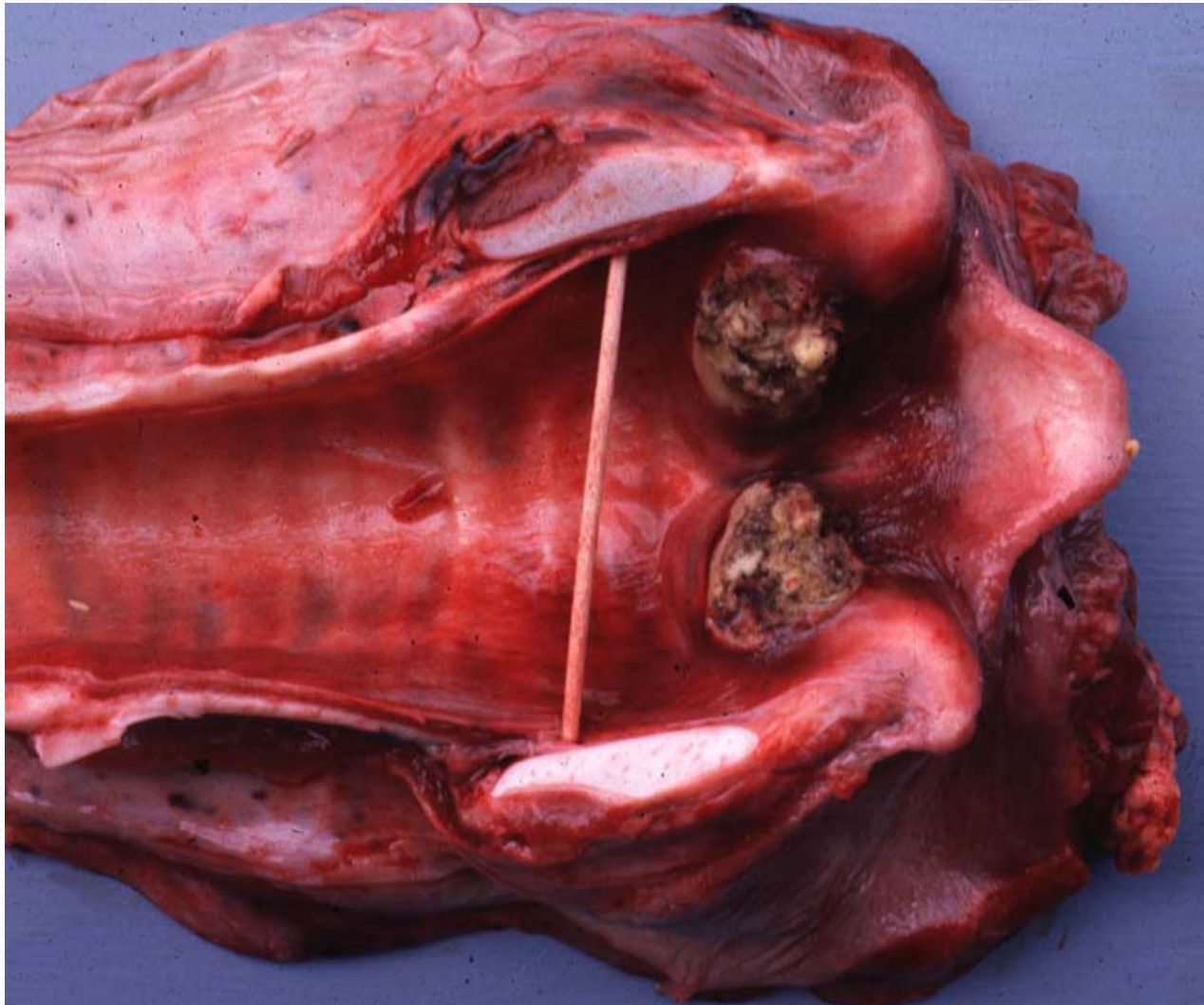
- The lesions are found grossly in the mucosa overlying the sides or dorsal groove of the tongue, the cheeks, gums, palate, larynx, and pharynx.
- The early lesions are large, well-demarcated, dry, yellow-gray areas of necrosis, surrounded by a zone of hyperemia.
- The necrotic tissue projects slightly above the normal surface and is friable but adherent and is not easily detached.

Gross Findings

- In time it may slough and leave **deep ulcers**, which may heal by granulation.
- Spread from the oral foci occurs down the **trachea** (causing **aspiration pneumonia**), down the **esophagus**, and via blood vessels **metastases** may occur in other tissue.

Microscopic Findings

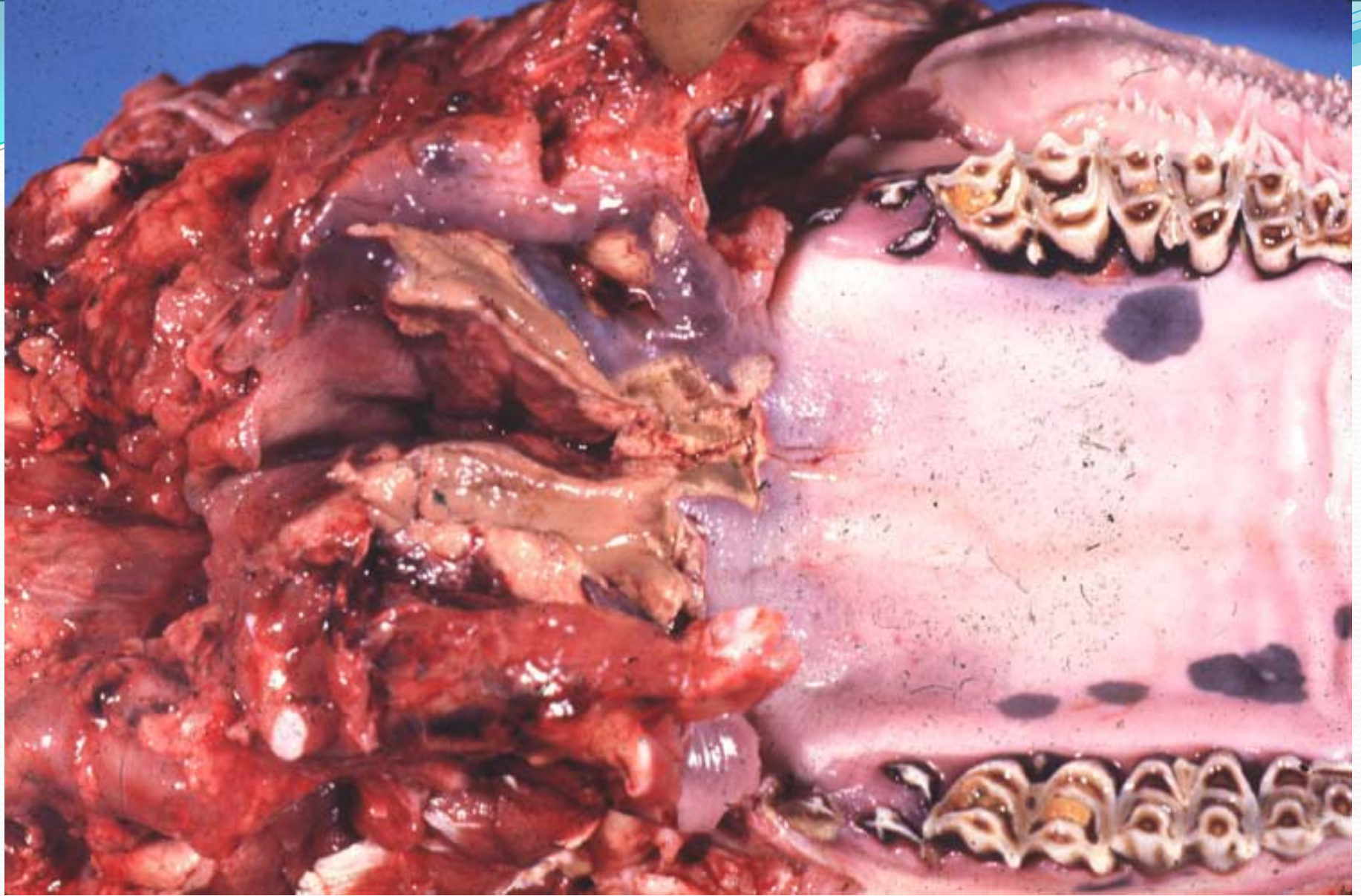
- The necrotic tissues are **structureless** and are surrounded at first by a **zone of vascular reaction**, later by a dense narrow rim of **leukocytes**, and finally by thick encapsulating **granulation tissue**.
- The bacteria are arranged in long filaments, particularly at the advancing edge of the lesions.
- The lesions can extend **deeply** into the **submucosal** tissue, the **underlying** soft tissues and **bone**.



Subacute necrotizing bilateral laryngitis, Calf diphtheria
Necrotic debris attached to the laryngeal mucosa



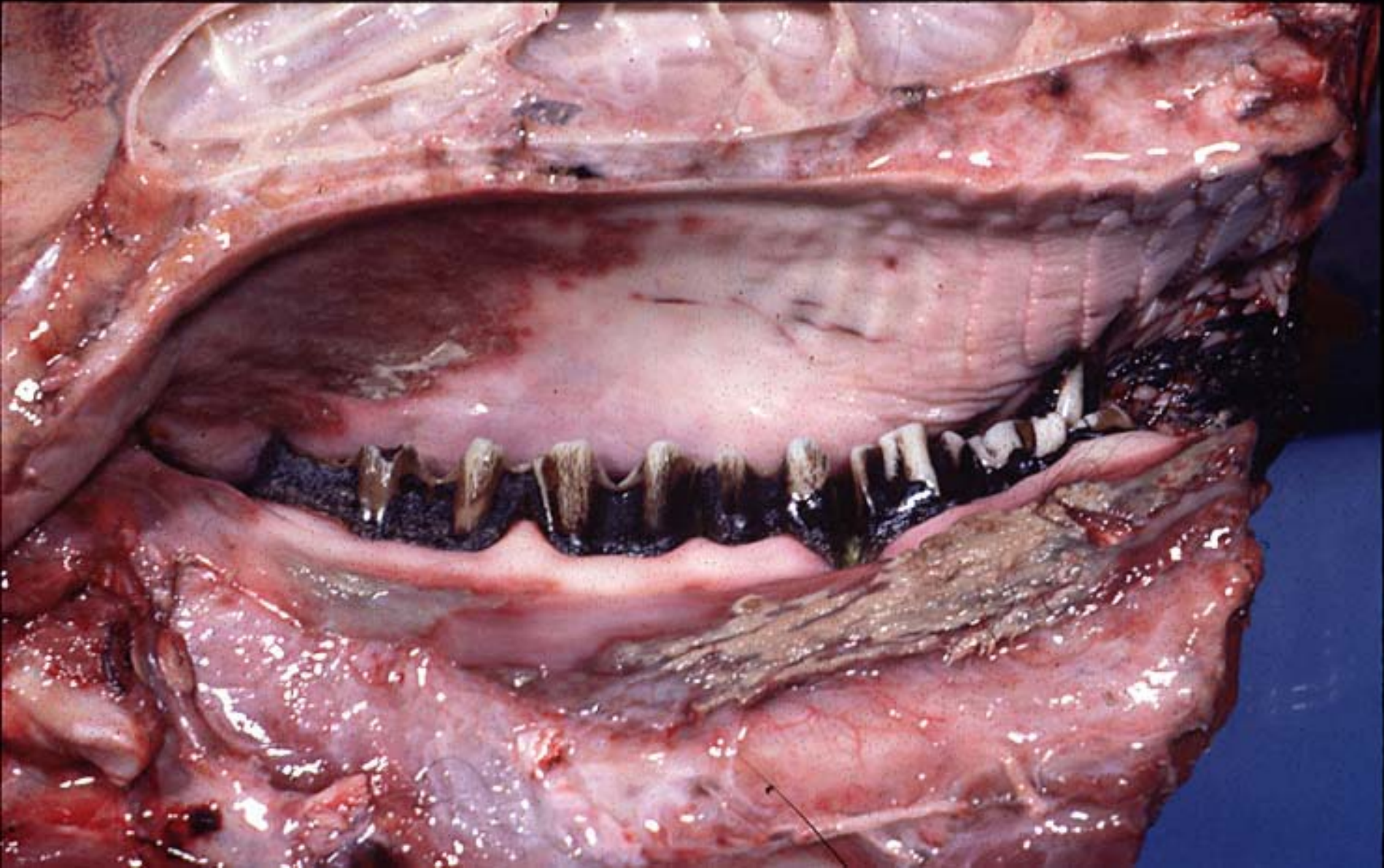
Locally extensive necrotic pharyngitis and tonsillitis. calf diphtheria
Yellow necrotic laryngeal tissue, epiglottis, pharyngeal tonsils and hard palate.
A strong foul odor is usually present



Iatrogenic traumatic pharyngitis and secondary necrobacillosis, Hard and soft palate
Severe tissue damage and subsequent deep infection alongside a linear traumatic line.



Proliferating surface epithelium and debris, Papular stomatitis
This gives the first impression of being necrobacillosis
but it not a deep infection nor is it foul smelling

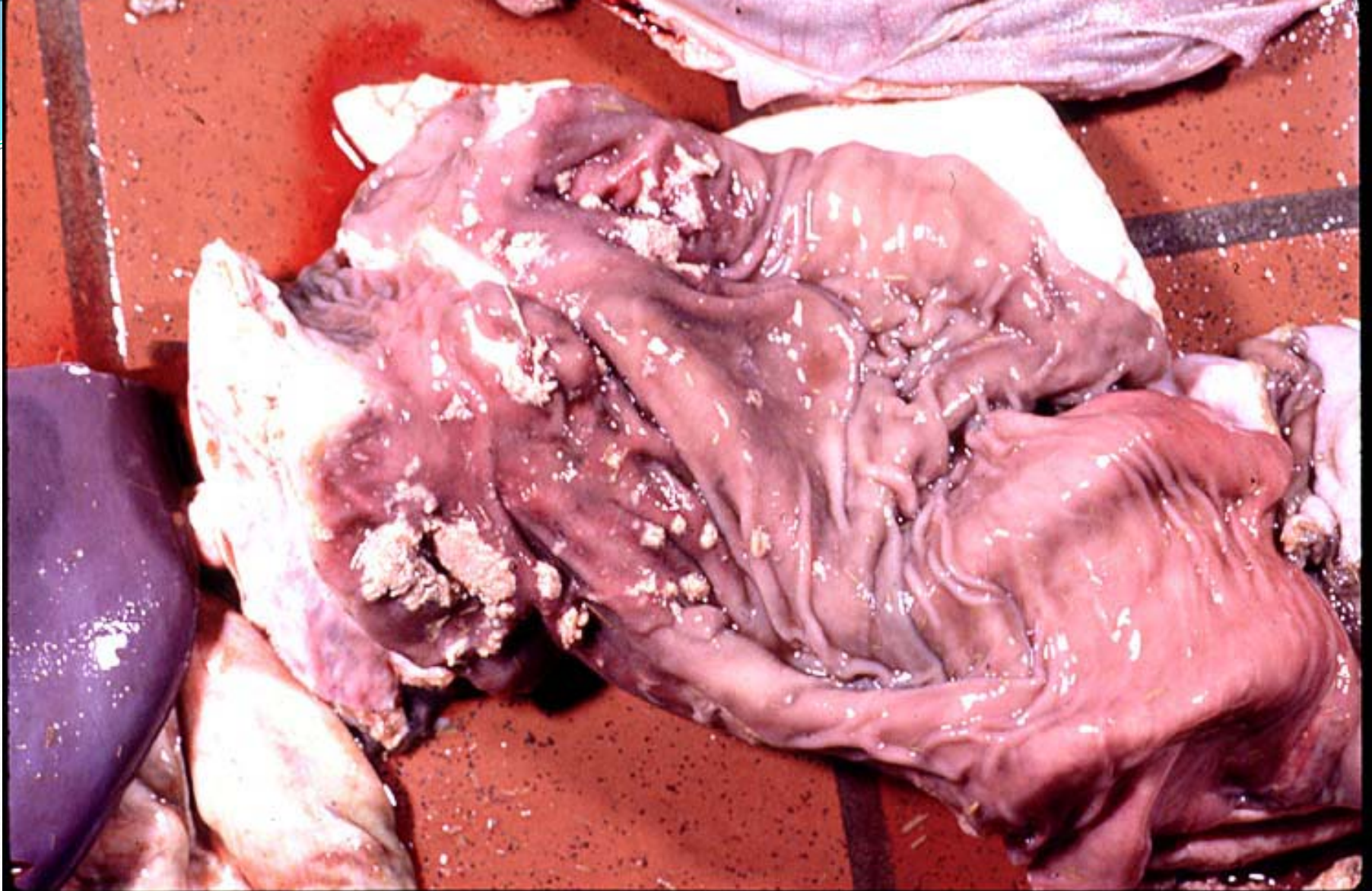


Severe subacute necrotizing stomatitis. oral cavity, gingiva, Bison
Large, locally extensive areas of yellow debris on bloody gingiva.



Necrotic laryngitis (Necrobacillosis), Larynx, epiglottis, COW

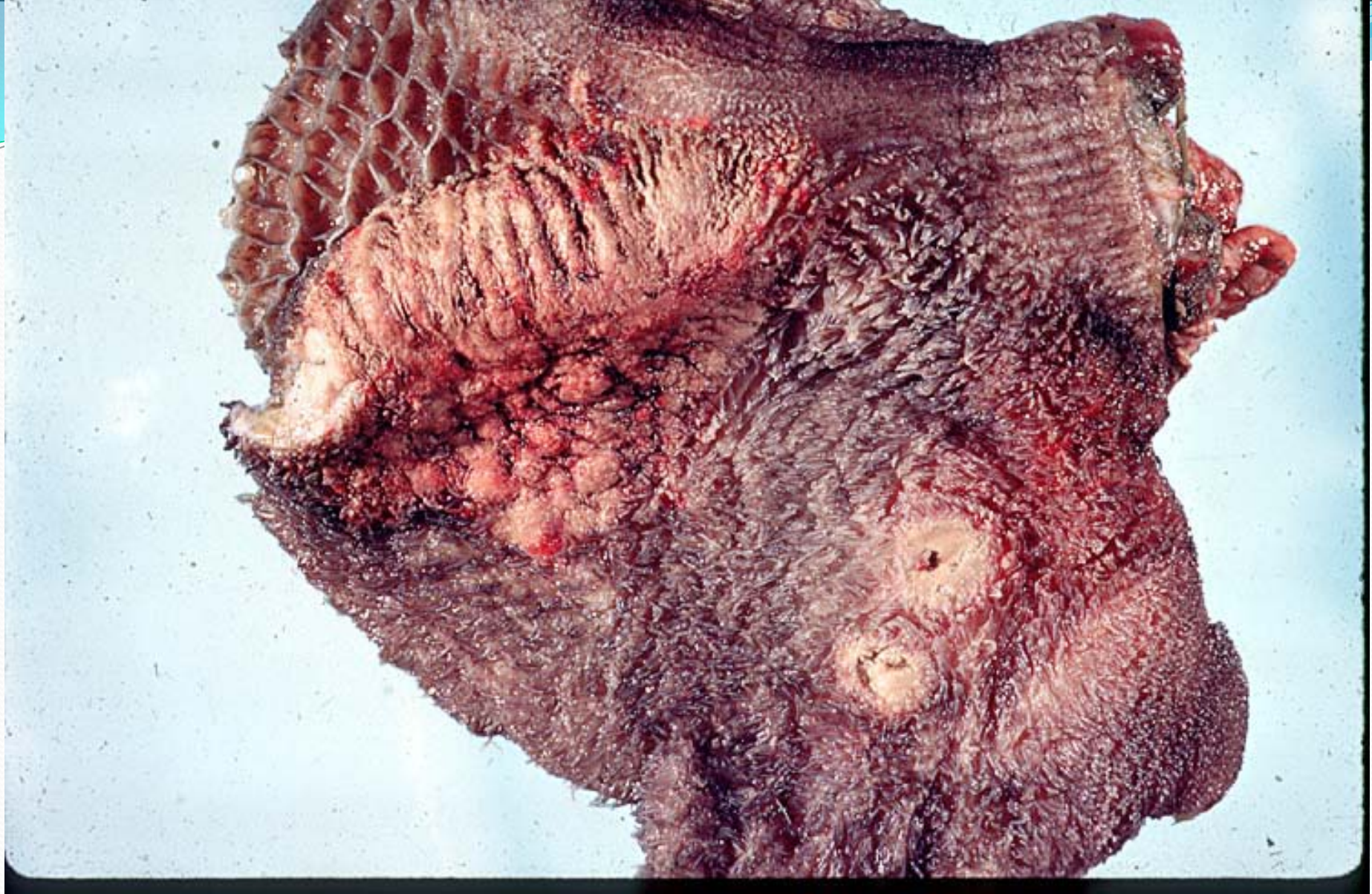
Deep, dark, ulcerated focus with some purulent debris with a foul odor.



Multifocal deep mucosal ulcers. abomasum, mucosa, COW
Discrete, firm, yellow crusts of foul smelling debris scattered on
mucosa and firmly attached to the submucosa.

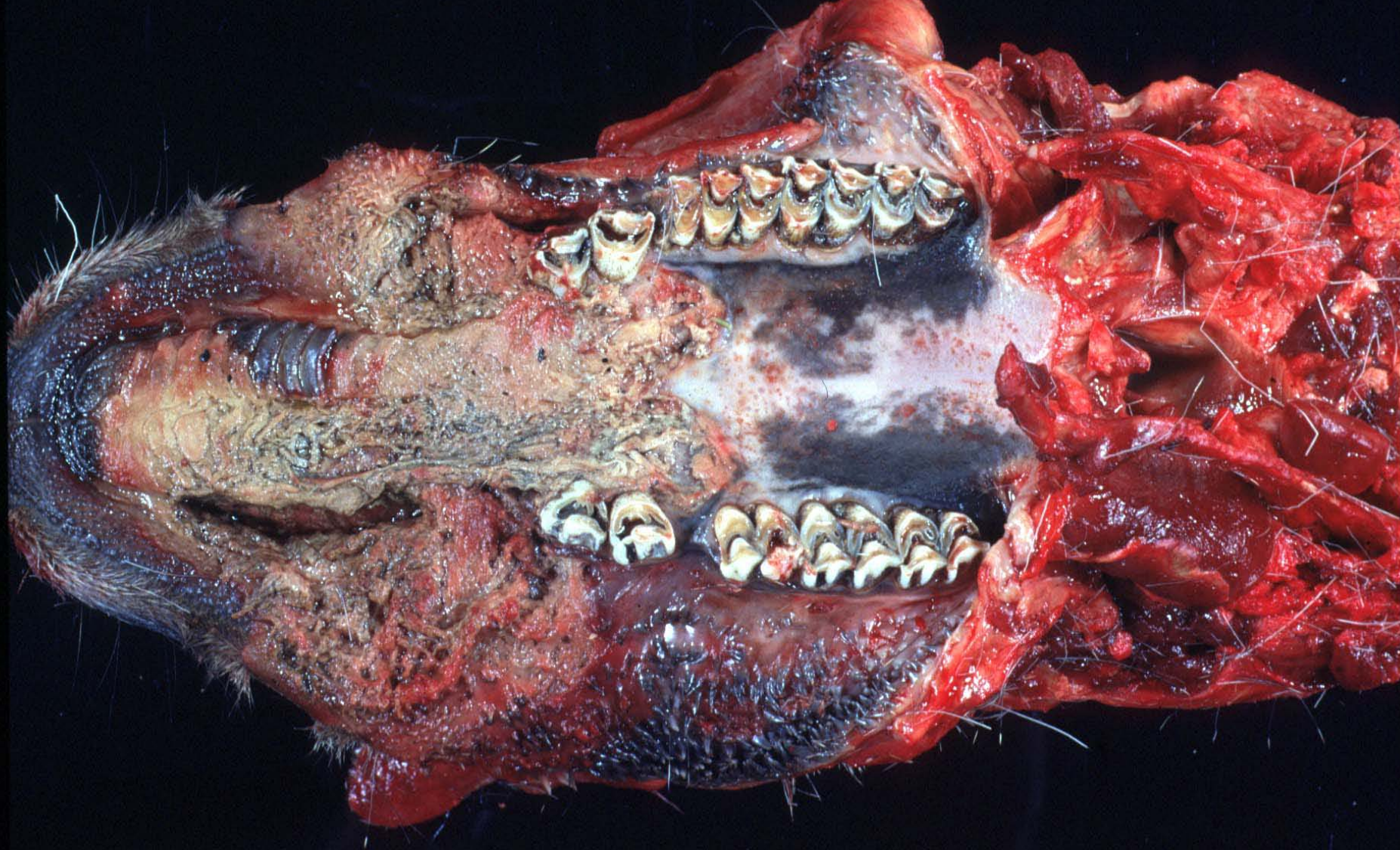


Chronic, necrotizing, deep gingivitis and dental loss. calf
Loss of epithelium and teeth in upper arcade of molars, with large
12cm mass of foul smelling necrotic tissue replacing the molars.

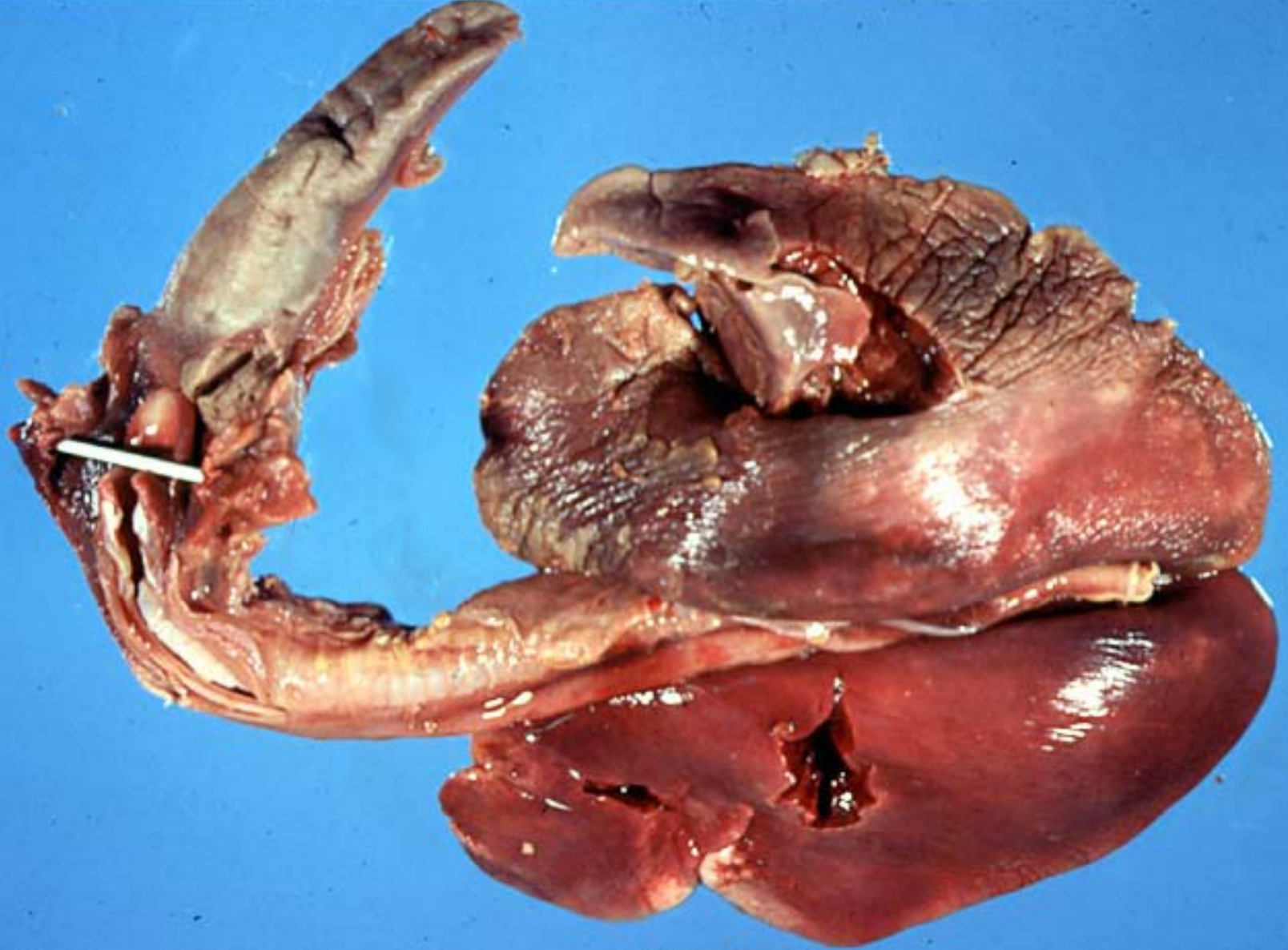


Multifocal septic necrosis, (Necrobacillosis), rumen, mucosa, COW

Multiple, raised, yellow, firm areas of necrosis with a characteristic septic odor.



Subacute necrotizing gingivitis, oral cavity, White Tailed deer
Large areas of the mucosal surface of the palate and
cheeks are roughened, tan/red, and have a very foul odor.



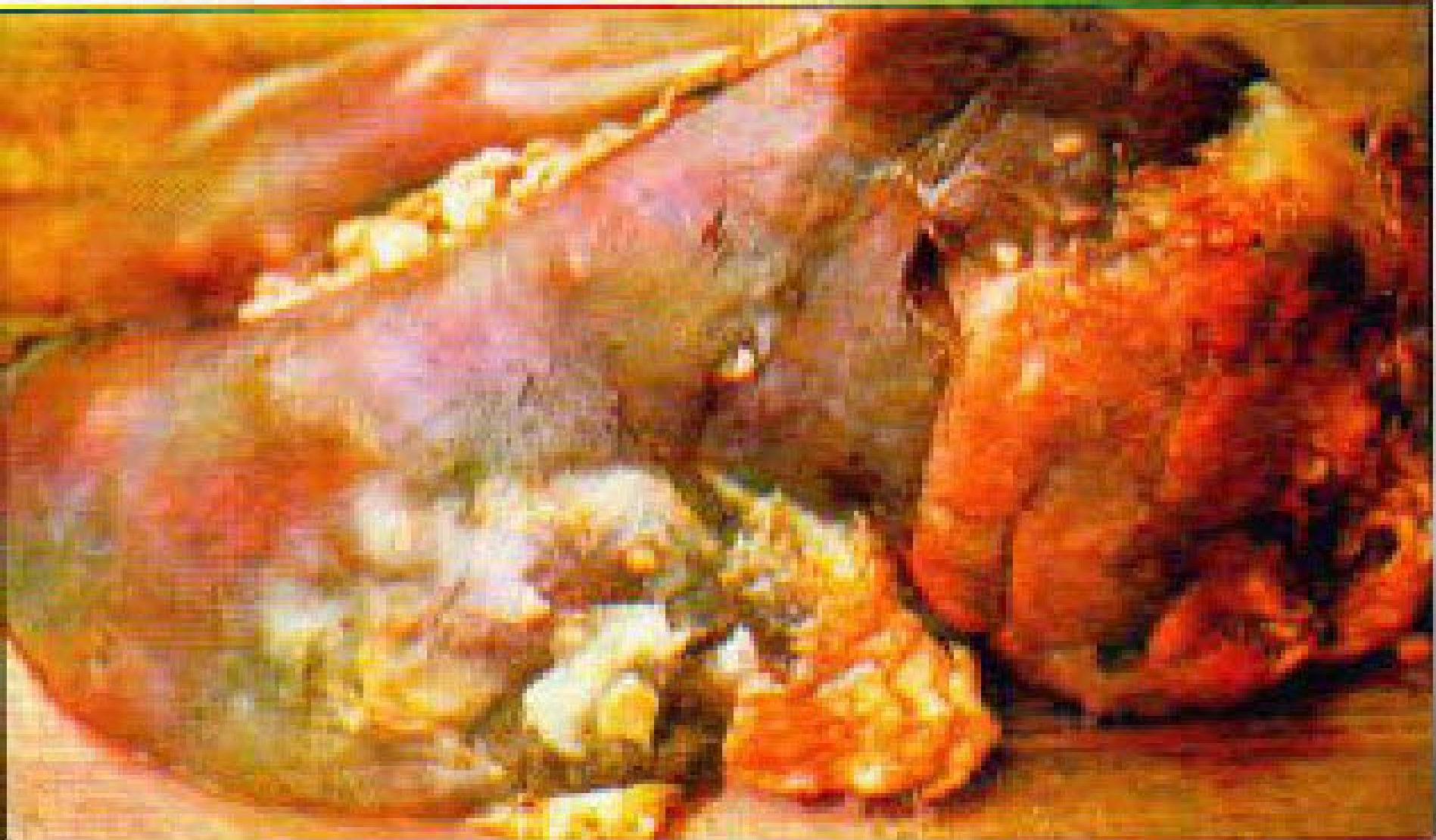
**Inhalation pneumonia secondary to Necrobacillosis of the tongue.
The right cranioventral lobes are firm with fibrin on their surface.
The epiglottis and tongue are swollen.**



Necrobacillosis, base of tongue, Deer
Deep-seated large mass of dry necrotic infarcted tissue



Necrobacillosis, *FUSOBACTERIUM NECROPHORUM*. Liver, cow
Multiple, pale, shiny, .5-2 cm foci of scattered tissue.



Lung (Sheep): Necrobacillosis

Fusiformis necrophorus

Circular areas of coagulative necrosis



Liver (Sheep): Necrobacillosis

Fusiformis necrophorus

Raised brownish circular areas of coagulative necrosis



Necrobacillosis
lesions in the liver (bovine)