

# Calf diphttheria

**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

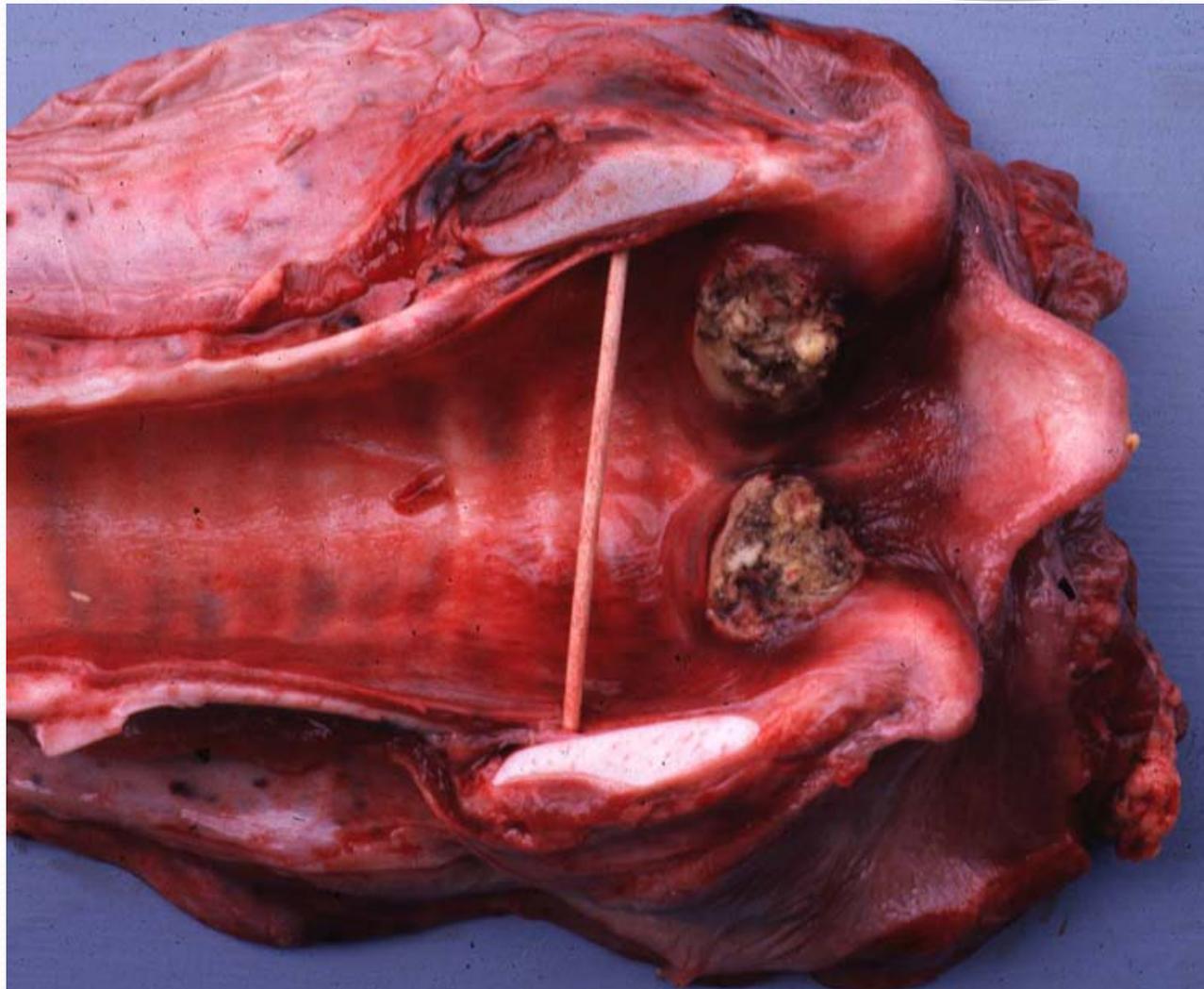
- The lesions are found grossly in the mucosa overlying the sides or dorsal groove of the tongue, the cheeks, gums, palate, larynx, and pharynx.
- The early lesions are large, well-demarcated, dry, yellow-gray areas of necrosis, surrounded by a zone of hyperemia.
- The necrotic tissue projects slightly 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

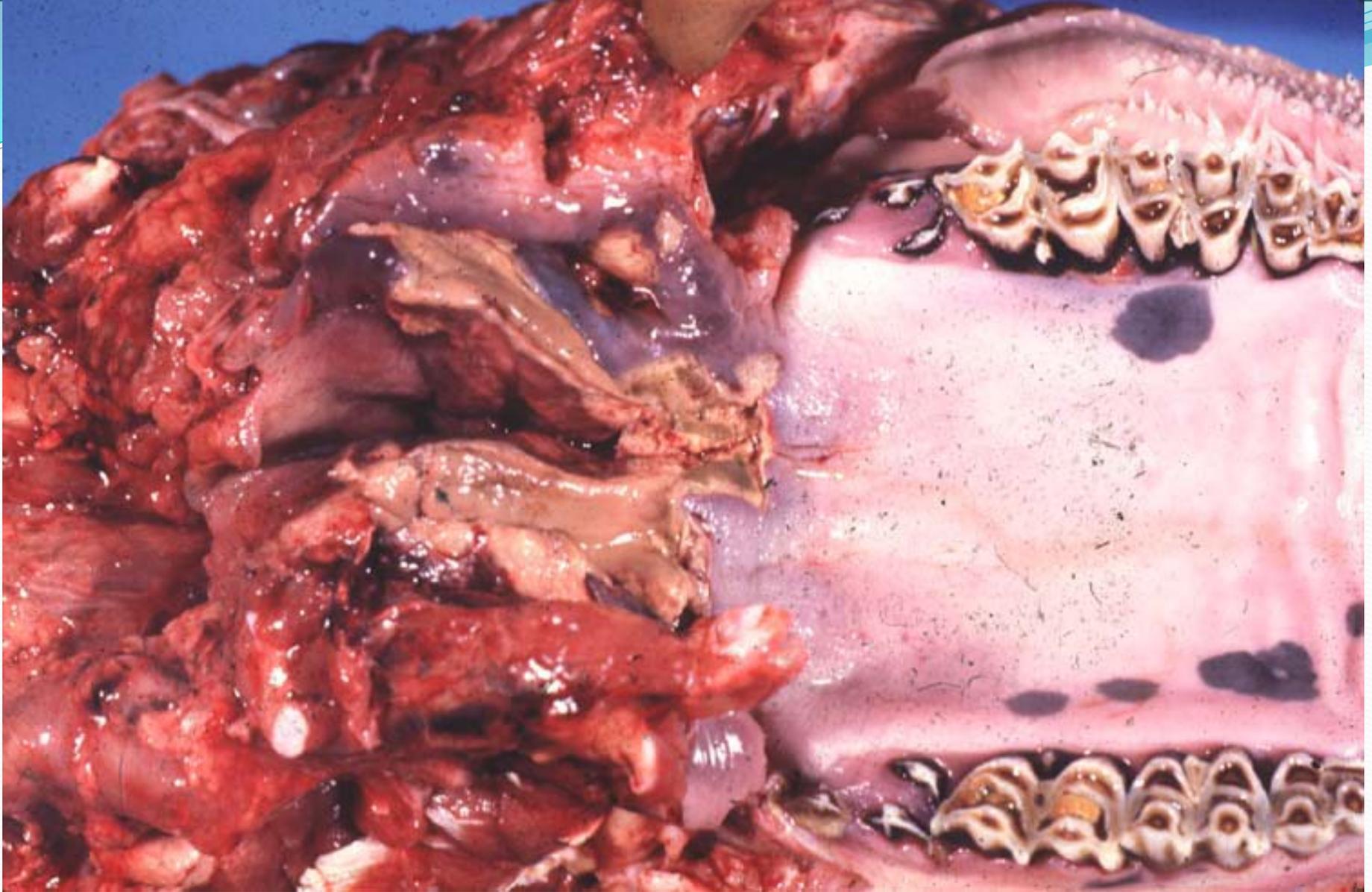
- The necrotic tissues are **structureless** and are surrounded at first by a **zone of vascular reaction**, later by a dense narrow rim of **leukocytes**, and finally by thick encapsulating **granulation tissue**.
- The bacteria are arranged in long filaments, particularly at the advancing edge of the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



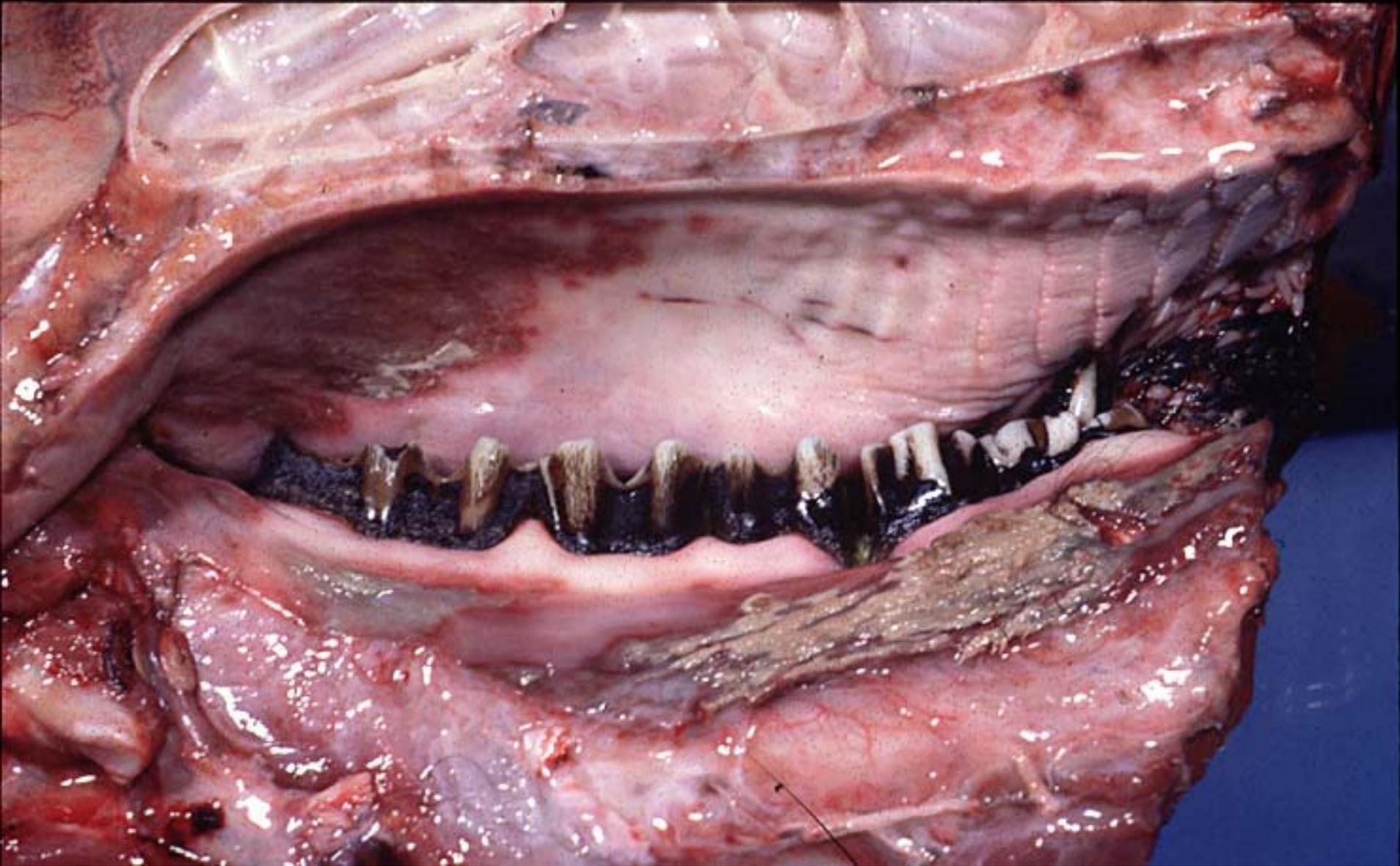
**Locally extensive necrotic pharyngitis and tonsillitis. calf diphtheria**  
**Yellow necrotic laryngeal tissue, epiglottis, pharyngeal tonsils and hard palate.**  
**A strong foul odor is usually present**



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



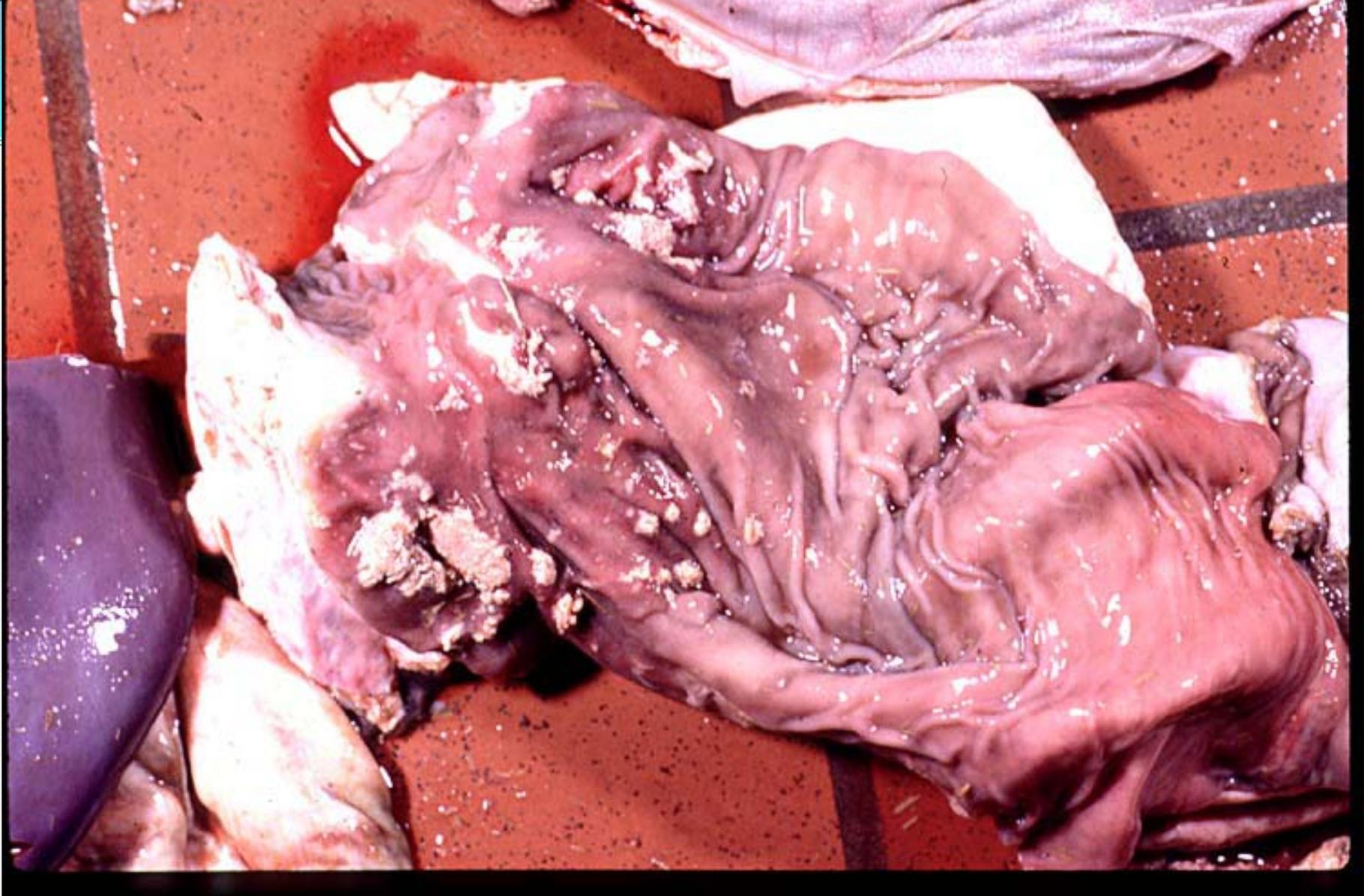
**Proliferating surface epithelium and debris, Papular stomatitis**  
**This gives the first impression of being necrobacillosis**  
**but it not a deep infection nor is it foul smelling**



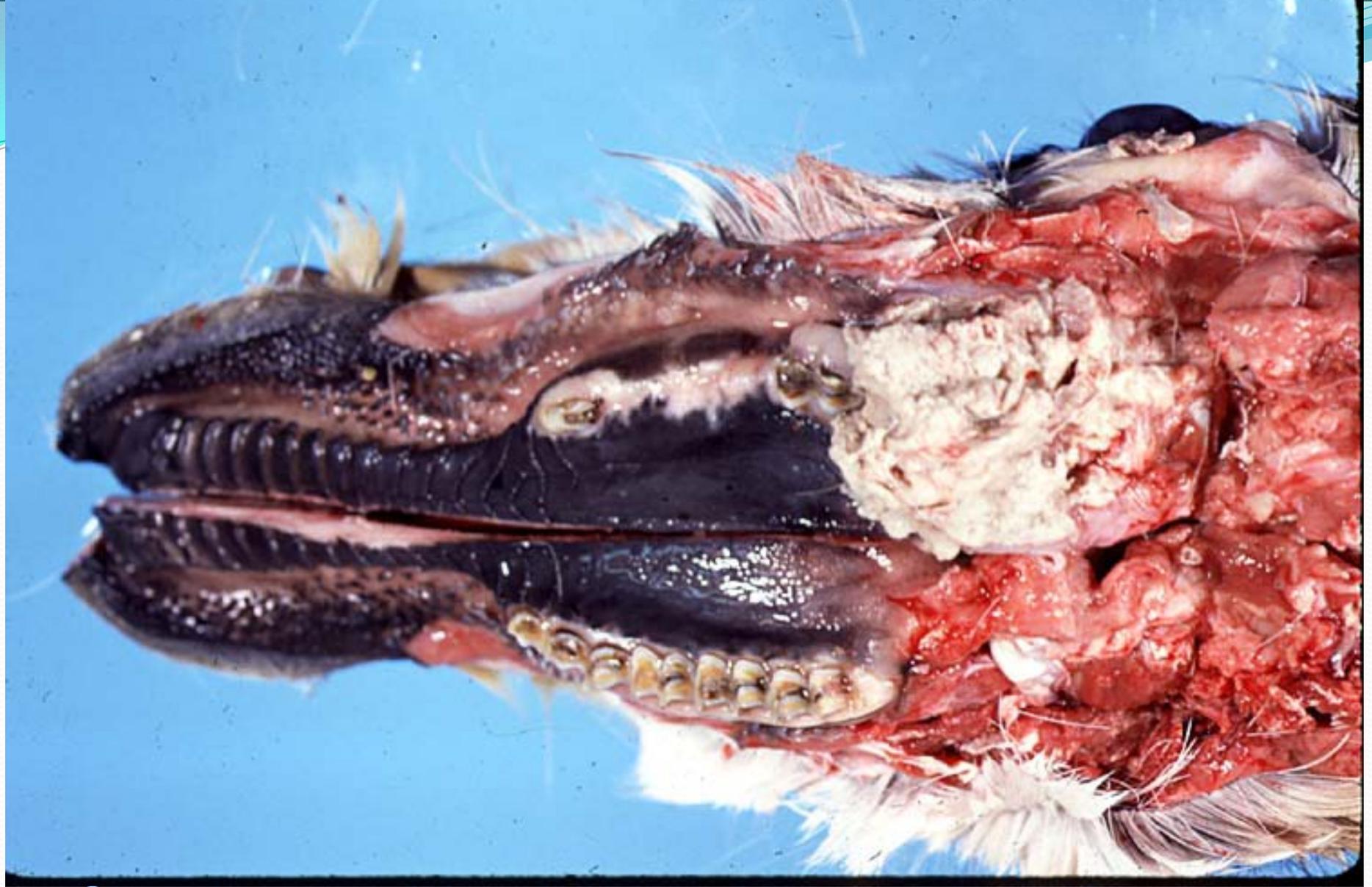
**Severe subacute necrotizing stomatitis. oral cavity, gingiva, Bison**  
**Large, locally extensive areas of yellow debris on bloody gingiva.**



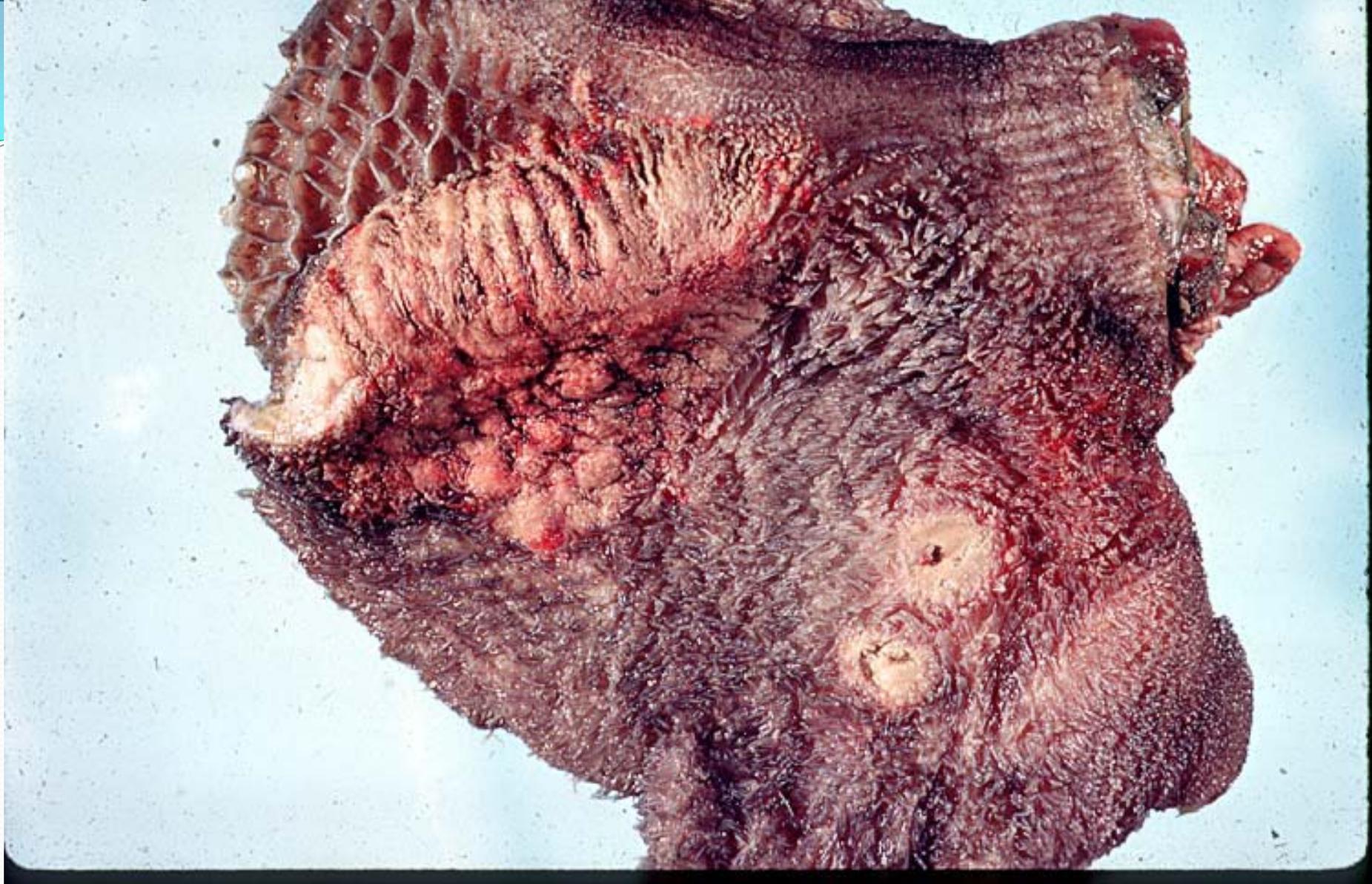
**Necrotic laryngitis (Necrobacillosis), Larynx, epiglottis, COW**  
**Deep, dark, ulcerated focus with some purulent debris with a foul odor.**



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

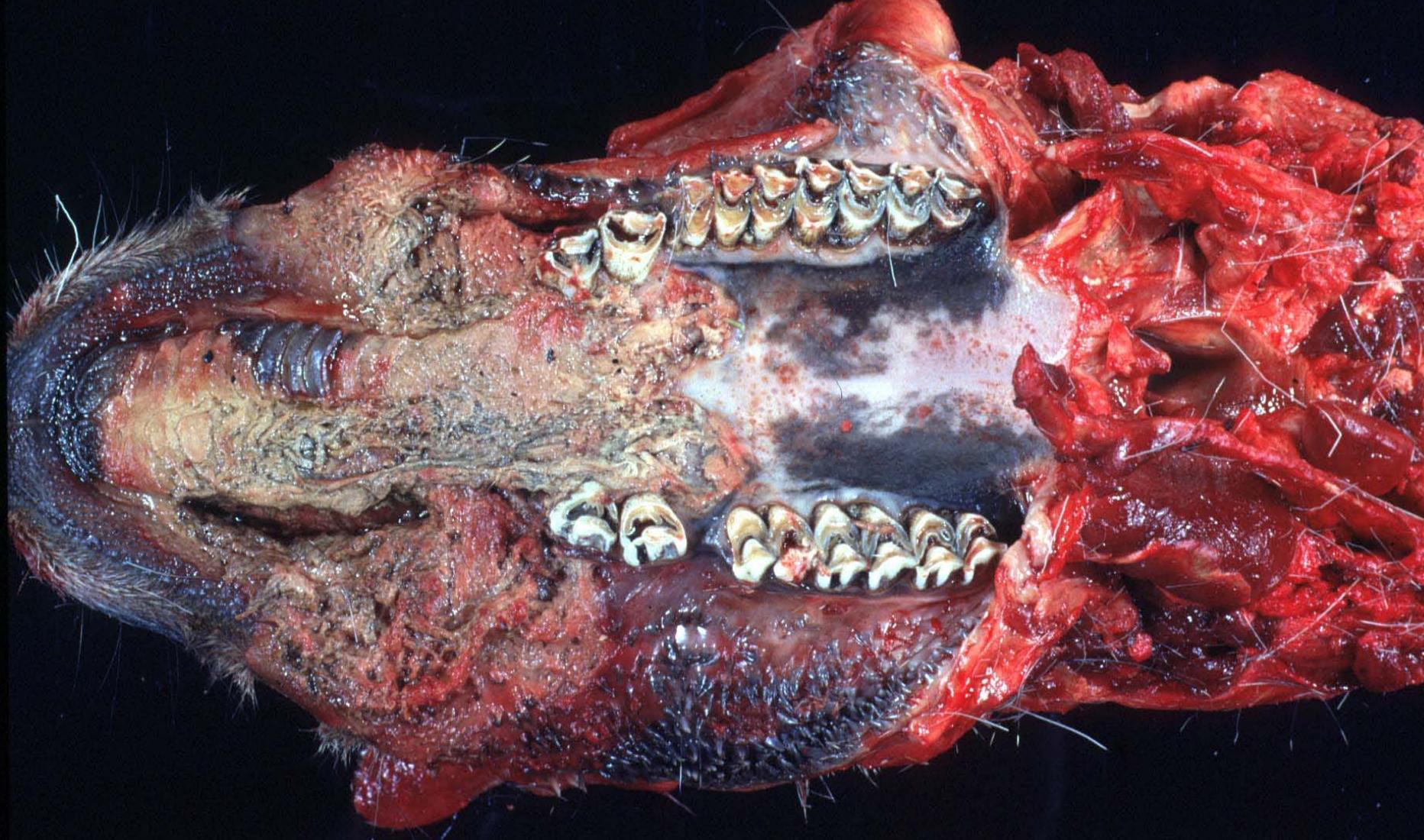


**Chronic, necrotizing, deep gingivitis and dental loss. calf  
Loss of epithelium and teeth in upper arcade of molars, with large  
12cm mass of foul smelling necrotic tissue replacing the molars.**

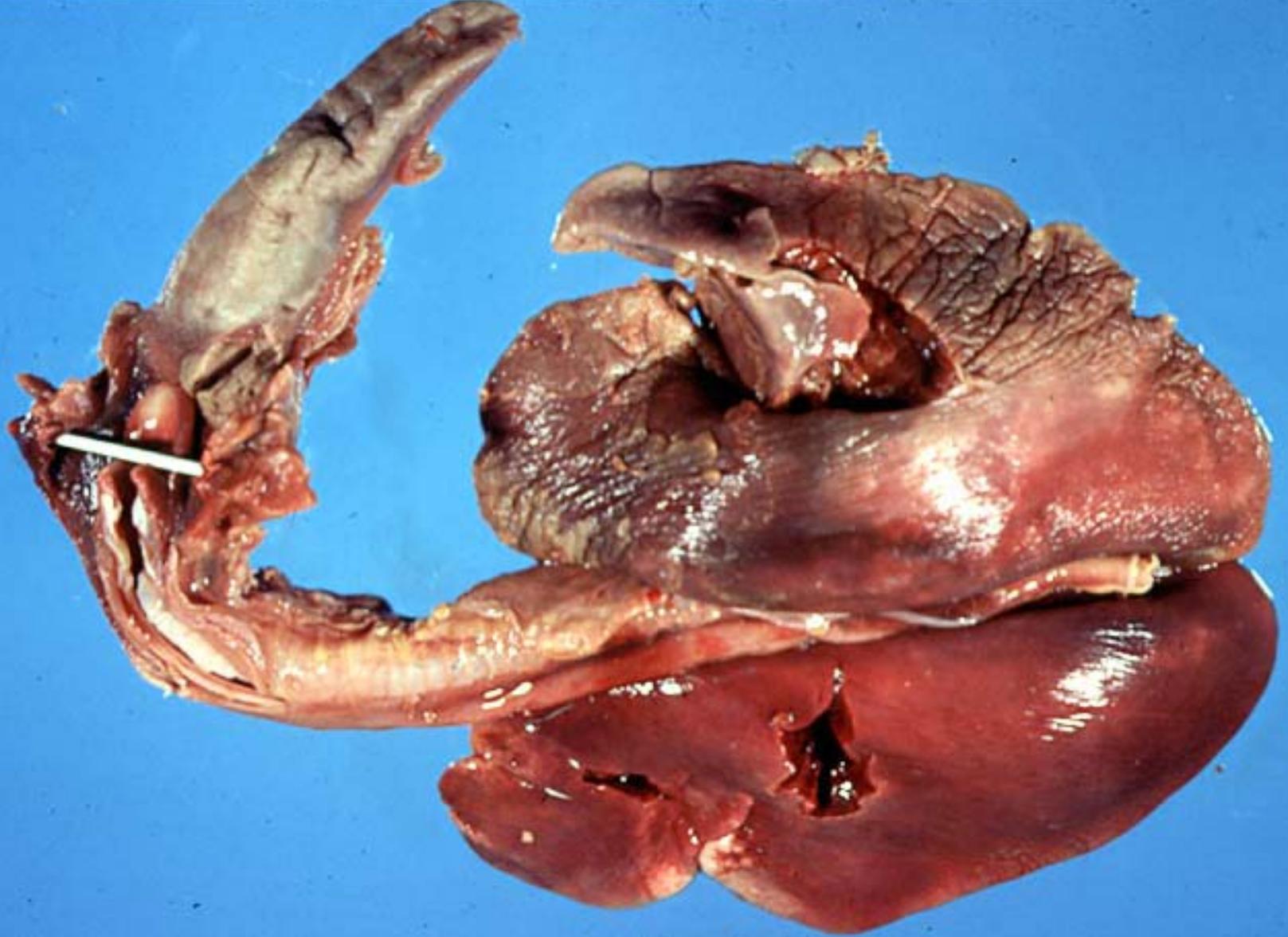


**Multifocal septic necrosis, (Necrobacillosis), rumen, mucosa, COW**

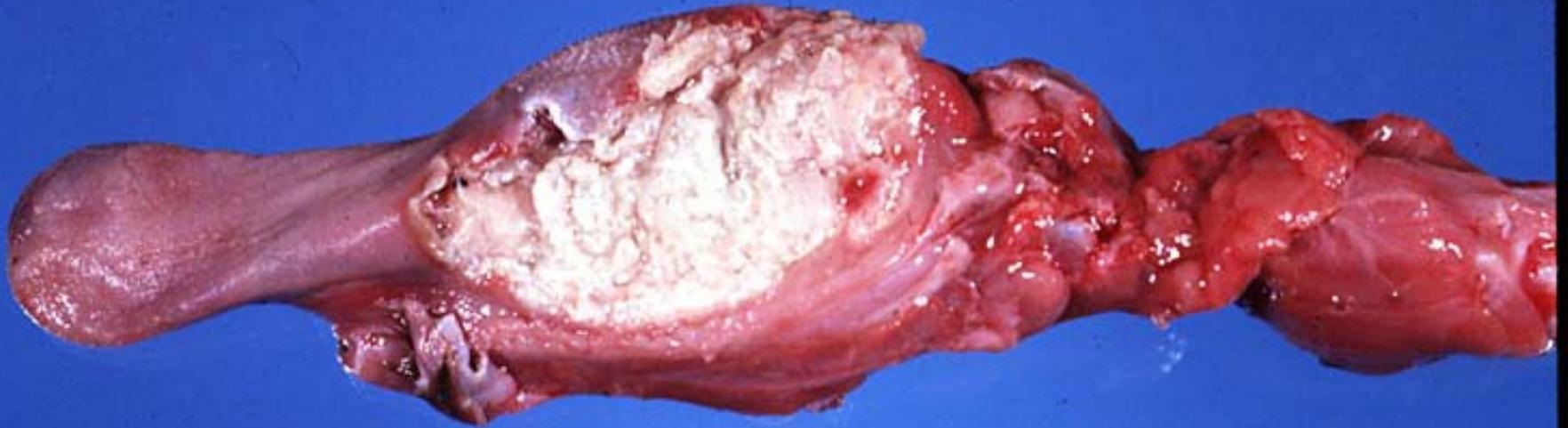
**Multiple, raised, yellow, firm areas of necrosis with a characteristic septic odor.**



**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.**

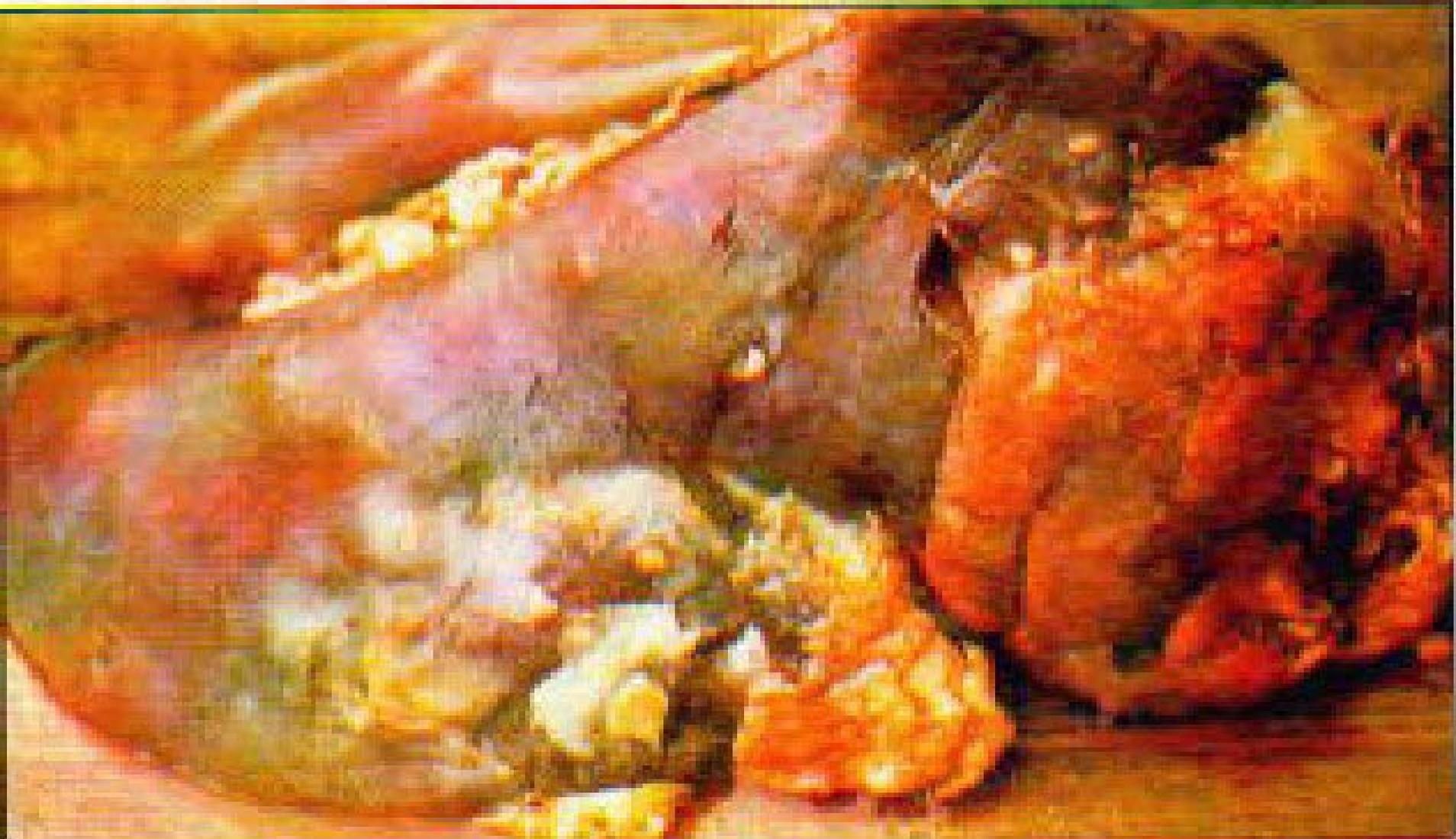


**Necrobacillosis, base of tongue, Deer**

**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  
lesons in the liver (bovine)**