Atlas of sheep and goat diseases

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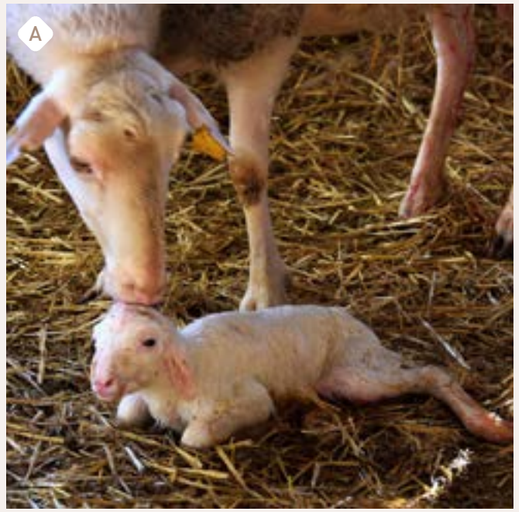
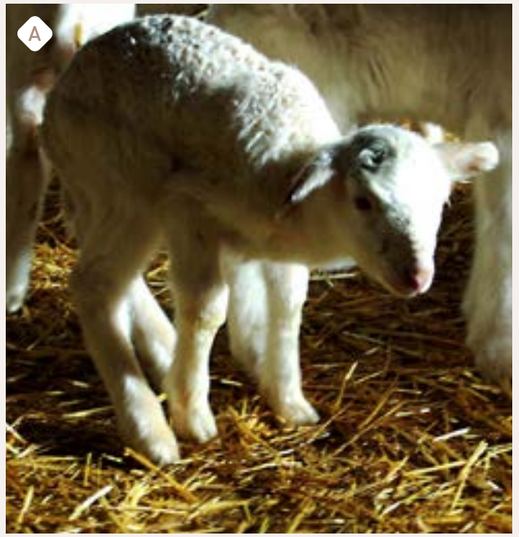
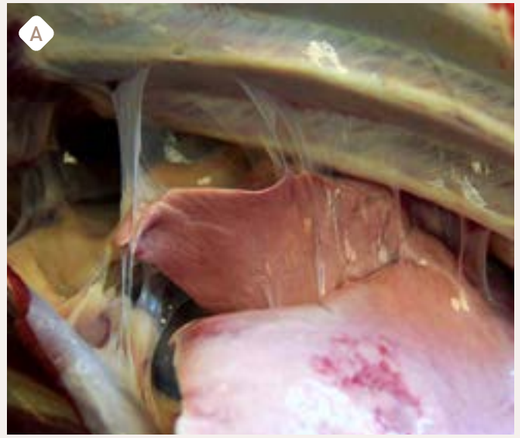
HYPOTHERMIA AND STARVATION

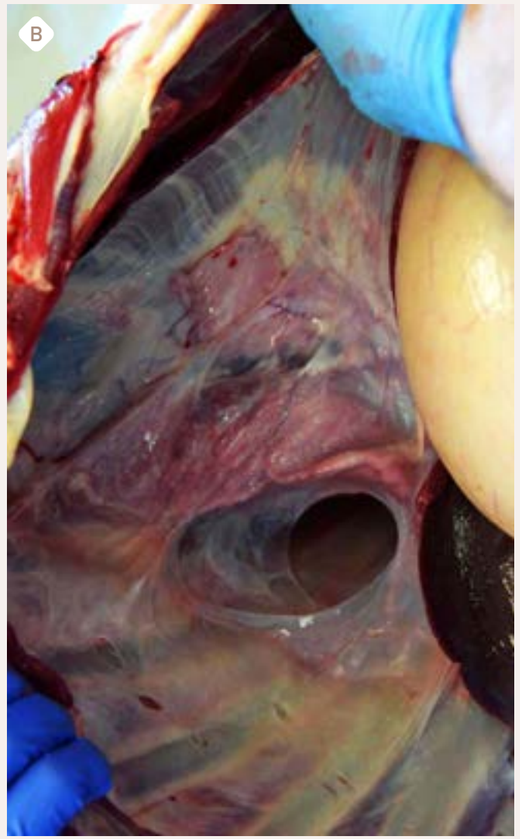


2.4. **Hypothermia.** This process can be environmental, in the case of low external temperatures, air currents, humid floors and little bedding, as well as due to lack of attention from the mother when she does not properly clean and dry the lamb (A and B). It can also be due to starvation, when the animal does not take colostrum in the first hours of life or receives insufficient milk during the following days, before starting to take solid food.

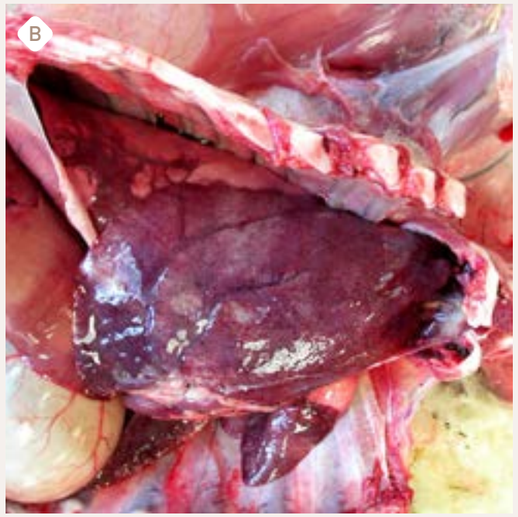


2.5. **Clinical signs.** Hypothermic animals present a characteristic posture: shrunken and with a slightly marked abdomen due to the absence or little ingested food (A and B). Frequently, they are close to a mother with little milk (C) or bleating in search of her mother (D). The problem is aggravated in very prolific litters (E) or with siblings with a significant difference in birth weight (F).



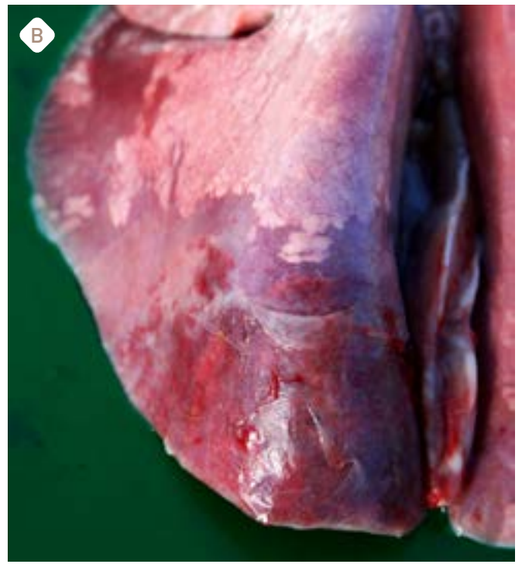


3.23. **Chronic: fibrous pleurisy.** Fibrinous pleurisy progresses to fibrous pleurisy with pleural adhesions (A and B).

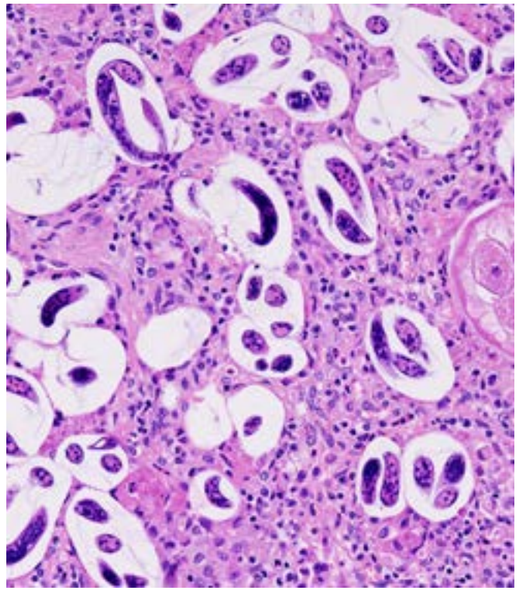


3.24. **Chronic: evolution of the process.** Occasionally, animals may end up presenting gangrenous pneumonia (A) due to difficulty in breathing, or a lesion exacerbation may occur (B).

VERMINOUS PNEUMONIA



3.25. **Verminous pneumonia.** In grazing lambs or kids, same as in adults, parasitic nodules of small pulmonary strongyles can be found on the dorsal area of the lung (A). Likewise, atelectasis caused by *Dictyocaulus filaria* is observed in the diaphragmatic lobes (B).

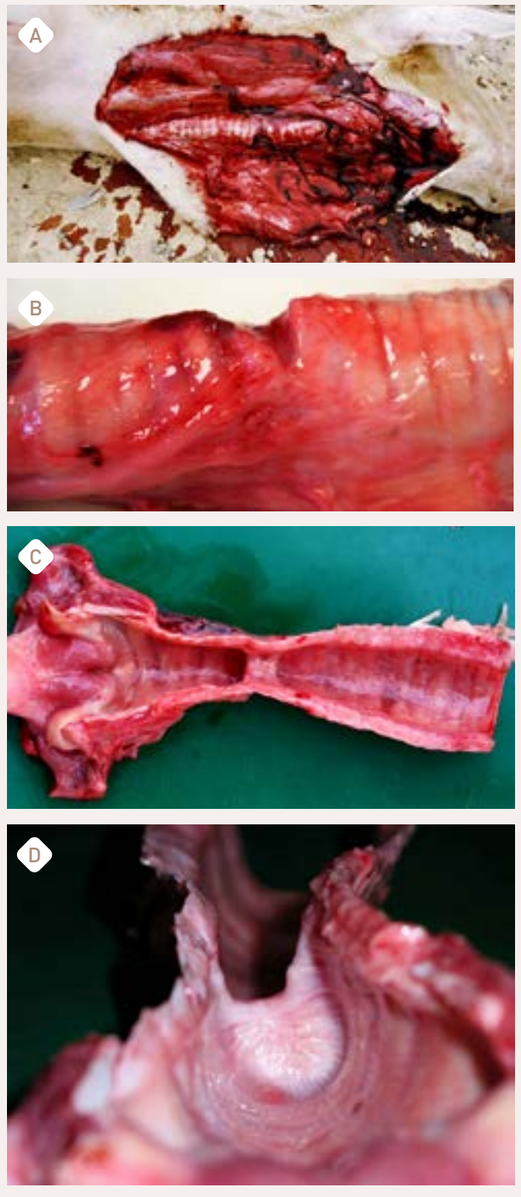


3.26. **Histopathology.** Parasites can be seen in the histologic sections of the lung parenchyma. *Picture courtesy of Dr. J. A. Castillo.*

3.27. **Larvae in faeces.** The coprological test allows us to differentiate the larvae from the small and large lung strongyles since they present very different sizes. *Picture courtesy of Dr. J. A. Castillo.*

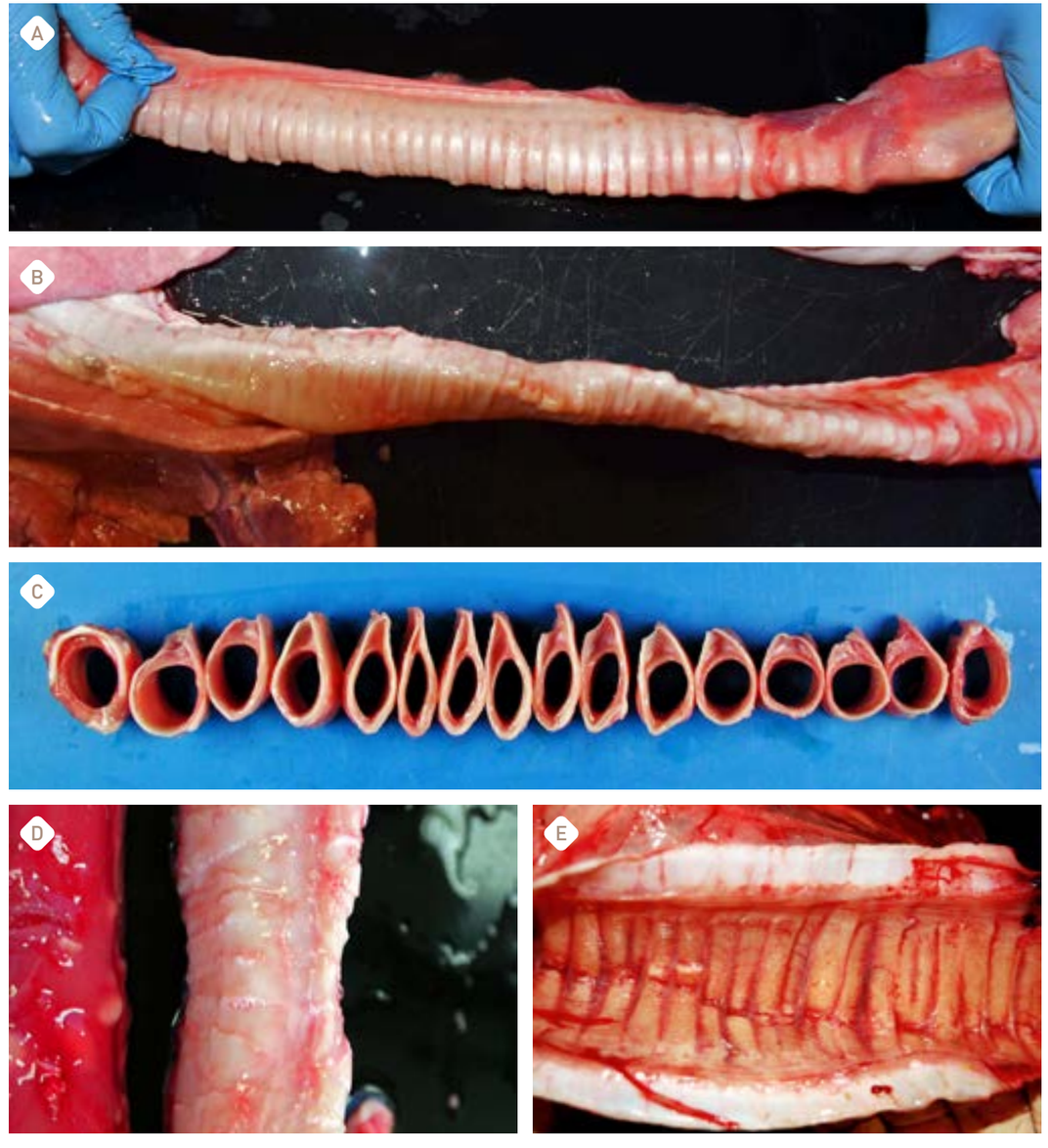
TRACHEAL RING RUPTURE

3.72. **Tracheal ring rupture.** Separation of two tracheal rings is rare, but it can occur after receiving a solid blow against a thin and robust structure (tensioned fencing wire). This condition can be easily detected during the clinical examination.



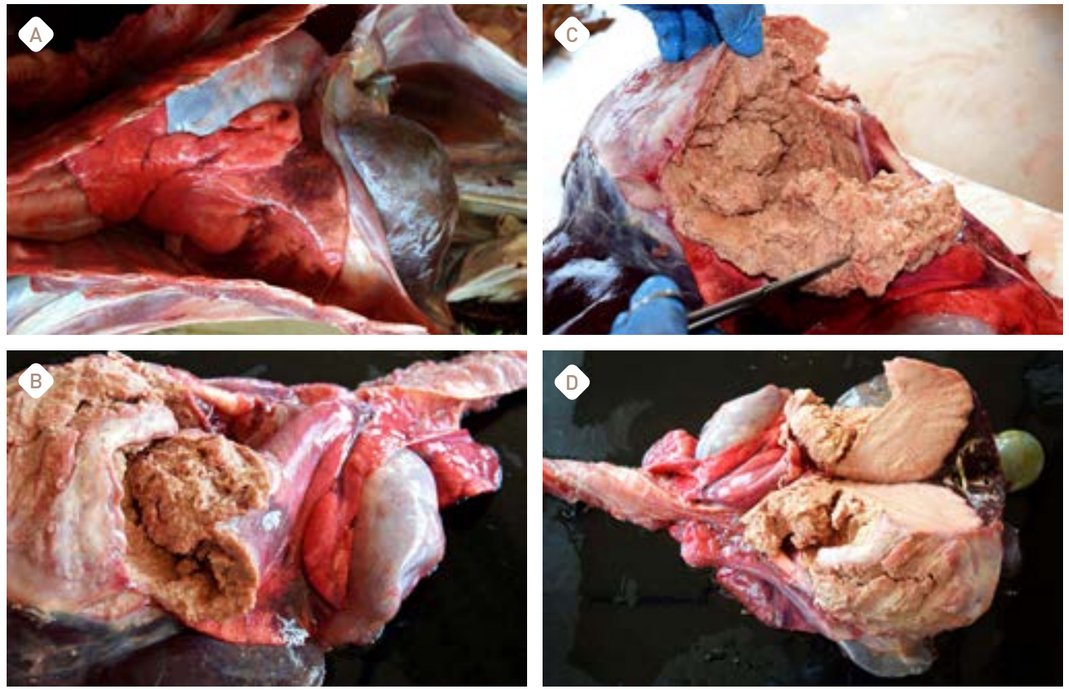
3.73. **Postmortem findings.** In this case, the dissection of the area at necropsy let us observe the healed lesion (A and B) that allowed the animal to live. The opening of the trachea showed a retracted fibrous scar that almost completely closed the tracheal lumen (C and D), making breathing difficult.

TRACHEAL CRUSH

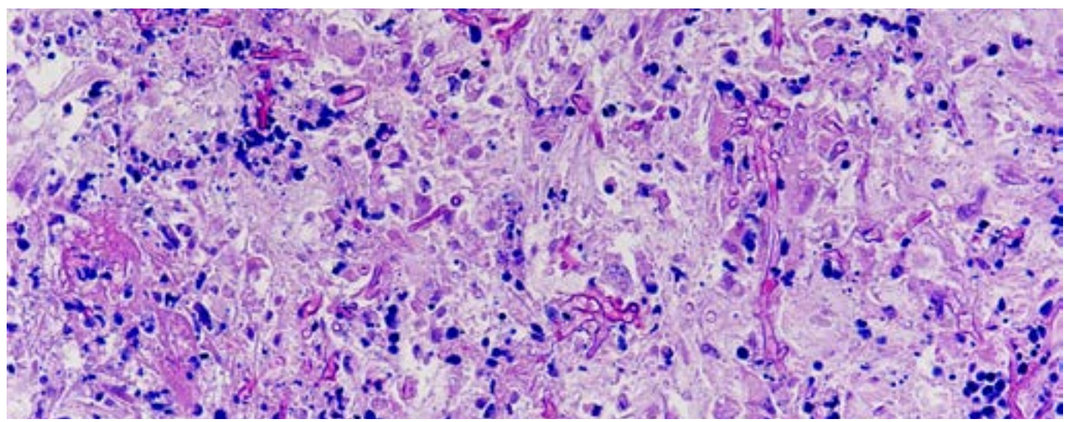


3.74. **Tracheal crush.** Various external pressures exerted by feeders, trauma, etc., can affect the cervical part of the trachea, finding up to 15% of affected animals in some flocks. These injuries can be punctual, affecting one or several rings (A), or cause the crushing of a large part or all of the cervical trachea, affecting several rings (B). The cross-sections of the trachea allow us to observe the anomalies in its structure (C). Both external (D) and internal (E) observations show the changes in the shape of the rings and the tracheitis that usually accompanies the process.

INFILTRATIVE MYCOTIC GRANULOMA

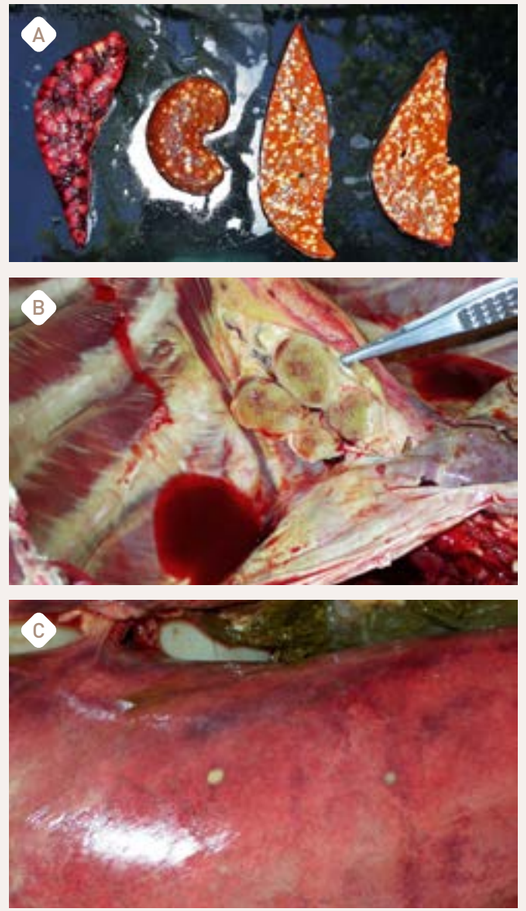


3.135. **Mycotic granuloma in the lung.** The fungus acts infiltratively in an *Aspergillus fumigatus* infection, leaving the lung enlarged and deformed (A). The parenchyma breaks easily, showing a grainy appearance (B and C) and being completely smooth when cut (D). The granuloma can also infiltrate the costal wall and the thoracolumbar vertebrae, causing locomotor disorders in the hindlimbs.



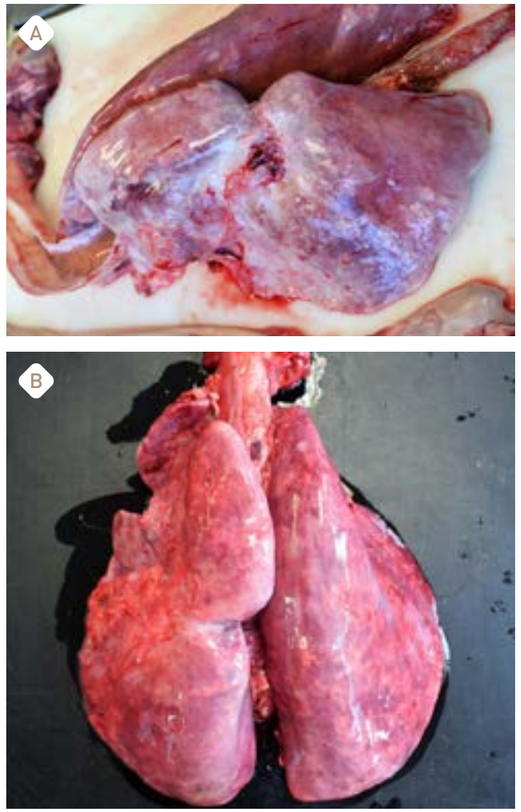
3.136. **Histopathological image.** The histopathological study of the lung allows us to see the structures of *Aspergillus fumigatus* distributed throughout the granuloma. *Picture courtesy of Dr. M.J. Buitrago.*

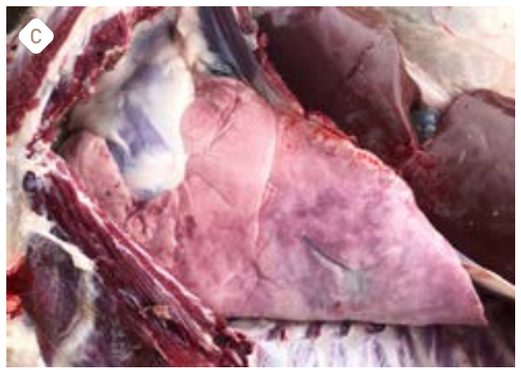
LEUKOSIS



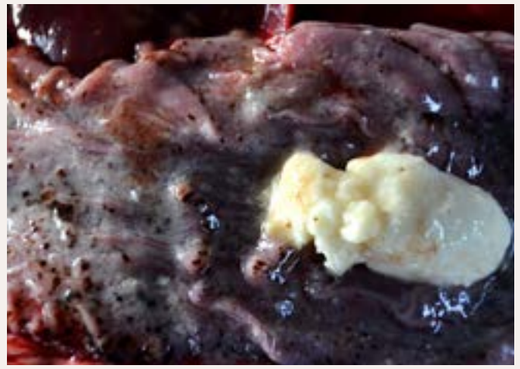
3.137. **Postmortem findings.** Ovine leukosis is a very rare disease, possibly related to the bovine leukosis virus. It can be found in a multisystemic way, forming white nodules in the parenchyma of different organs (A). At the respiratory level, we can find it in the thoracic cavity wall, lung and mediastinal lymph nodes (B-D).

SCAR RETRACTIONS AND ASEPTIC CAVERNS





3.138. **Scar retractions.** After suffering chronic pneumonic disorders, it is possible to find lungs with atrophied areas, possibly of scar origin (A-C).



4.32. **Abomasal petechiae.** When removing abomasal content, petechiae can be seen in the surface of the abomasum that stains its content. Sometimes, large milk clots can also be found together with the petechiae.

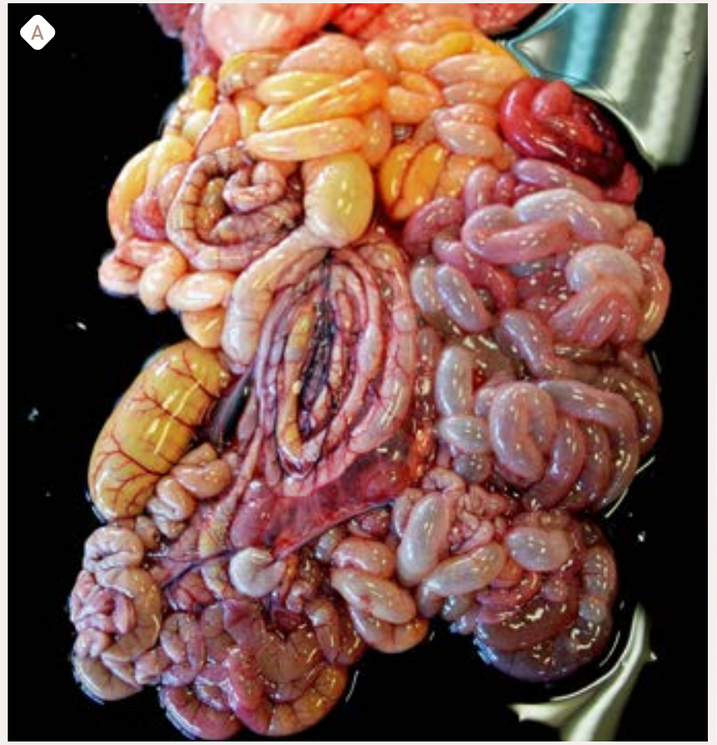
4.34. **Intestinal fluid in colibacillary diarrhoea.** The opening of the intestine lets the bright yellow contents flow.

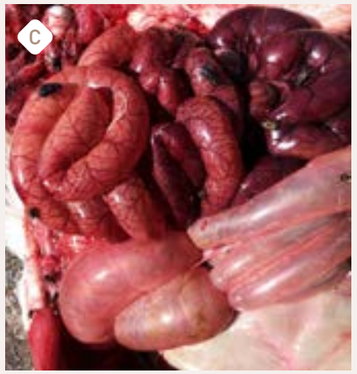
4.33. **Catarrhal enteritis.** The intestine shows catarrhal enteritis, with reactive Peyer's patches, with very marked blood vessels and yellowish contents (A and B).

4.35. **Intestinal loops affected by catarrhal and haemorrhagic enteritis.** In some intestinal loops, catarrhal enteritis evolves to haemorrhagic, with more bloody content that stains the previous yellow (A and B).

4.36. **Catarrhal-haemorrhagic enteritis.** Haemorrhagic enteritis can affect almost the entire digestive package, especially at the end of the first week of life and the beginning of the second. At this time, *Escherichia coli* and *Clostridium perfringens* type B predominate in bacterial isolates.

4.37. **Mixed diarrhoea caused by *E. coli* and *Cryptosporidium*.** Throughout this period, the lamb may be simultaneously infected by *Cryptosporidium* sp. In these cases, the affected intestinal loops contain a more greenish material, easily visible when the intestine is opened.





4.38. **Haemorrhagic enteritis.** Over time, enteritis found is predominantly haemorrhagic, and *E. coli* is less frequently isolated and *Cl. perfringens* type B is usually found, and even type D in animals that reach the third week of life (A-C).

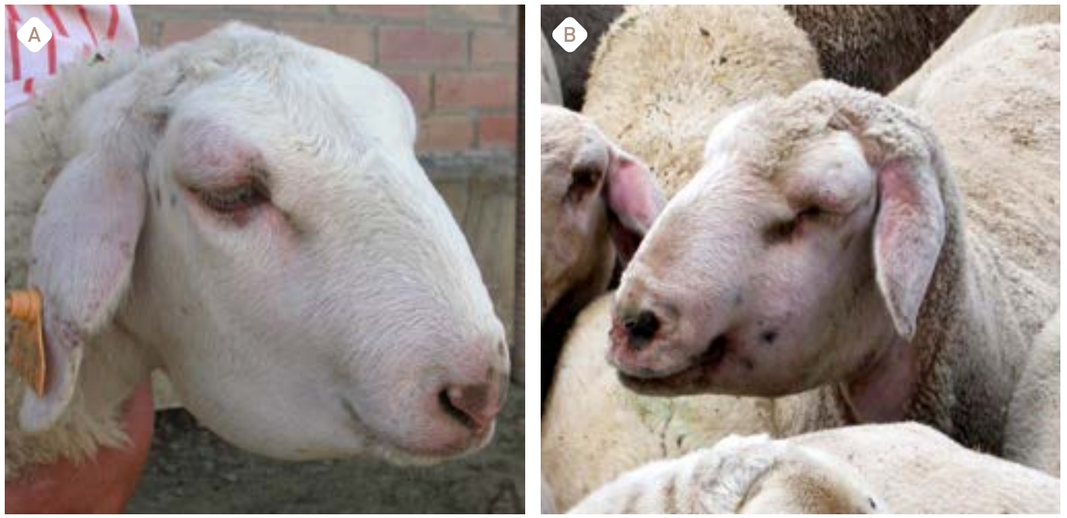
PLANTS THAT CAN CAUSE DAMAGE IN THE ORAL MUCOSA

4.141. **Plants that can cause damage in the oral mucosa.** Some plants can damage the skin of the face and the inner mucous membranes. The most important are classified as: sharp (*Xanthium spinosum*) (A and B), urticants (*Urtica* sp.) (C and D) and irritants (*Phytolaca americana*) (E and F).

CHEMICAL AGENTS

4.142. **Sialorrhea.** Some chemicals with very high or low pH and some plants (see the previous point) can cause irritation and the consequent increase in the production of saliva and hypersalivation. The same clinical signs are observed in the consumption of bitter-tasting diets that stimulate the production of saliva.

PHOTOSENSITISATION (*see chapter 11, page 578*)



4.143. **Photosensitisation.** Different physical, chemical and biological agents can cause inflammation and oedema in the face and lips. Different degrees of facial swelling and oedema caused by photosensitisation can be seen in the images (A and B).

4.229. **Clostridial abomasitis.** Many microorganisms can cause abomasitis, but those of the genus *Clostridium* are usually the most frequent. *Clostridium septicum* causes acute haemorrhagic abomasitis (A), while *Clostridium sordellii* causes abomasitis with emphysema of the abomasal mucosa (B).

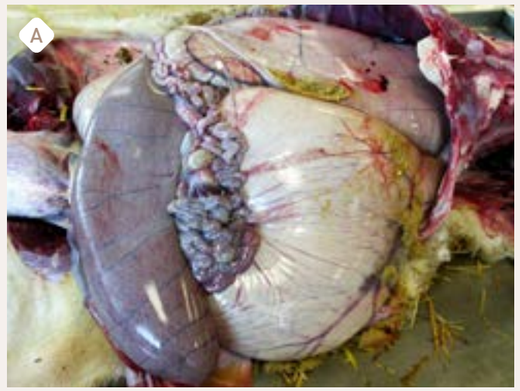
4.230. **Rupture of the abomasum.** Some severe abomasitis can lead to rupture of the abomasum and subsequent peritonitis and death.

ABOMASAL ULCERS

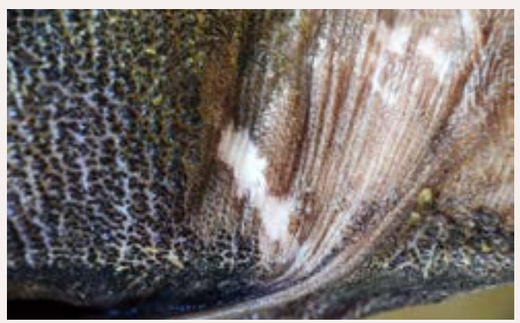
4.231. **Abomasal ulcers.** These ulcers can have a very varied aetiology, mainly related to the pH of its content and infectious agents such as *Clostridium*.

4.232. **Pyloric ulcer.** When abomasal ulcers are near the pylorus, these can interfere with its function, causing the posterior vagal syndrome and food retention.

VAGAL INDIGESTION OR HOFLUND SYNDROME



4.233. **Posterior vagal syndrome.** Disorders of the vagus nerve branch that innervates the pylorus can affect its functionality and cause retention and increase in digestive content (A). In small ruminants, these conditions can be caused by the pressure of calcified cysticerci in the omentum of the pyloric proximities (B).



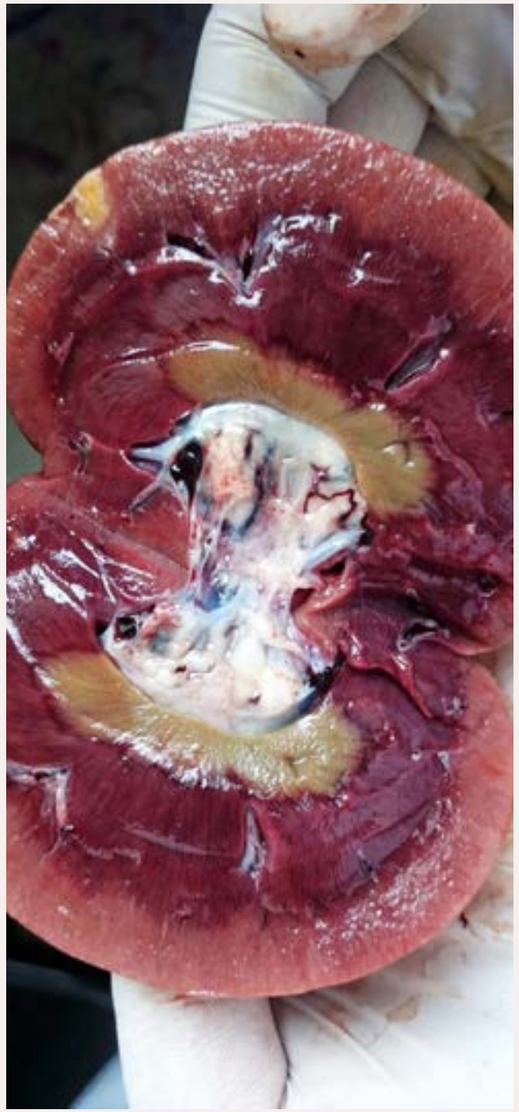
4.234. **Reflux ulcers.** In this disorder, it is common to find stomach ulcers due to the reflux of hydrochloric acid from the abomasum.

4.235. **Pyloric ulcers (see abomasal ulcers).** Vagal indigestion can be caused by the presence of ulcers in the vicinity of the pylorus (A), generating retention of the content (B and C).

GLOMERULONEPHROSIS

5.23. **Renal amyloidosis.** The affected kidneys are enlarged with many white dots on their surface that go deep into the cortical section (A-C). These are deposits of amyloid substance and are associated with chronic purulent processes, especially gangrenous pneumonia and purulent mastitis.

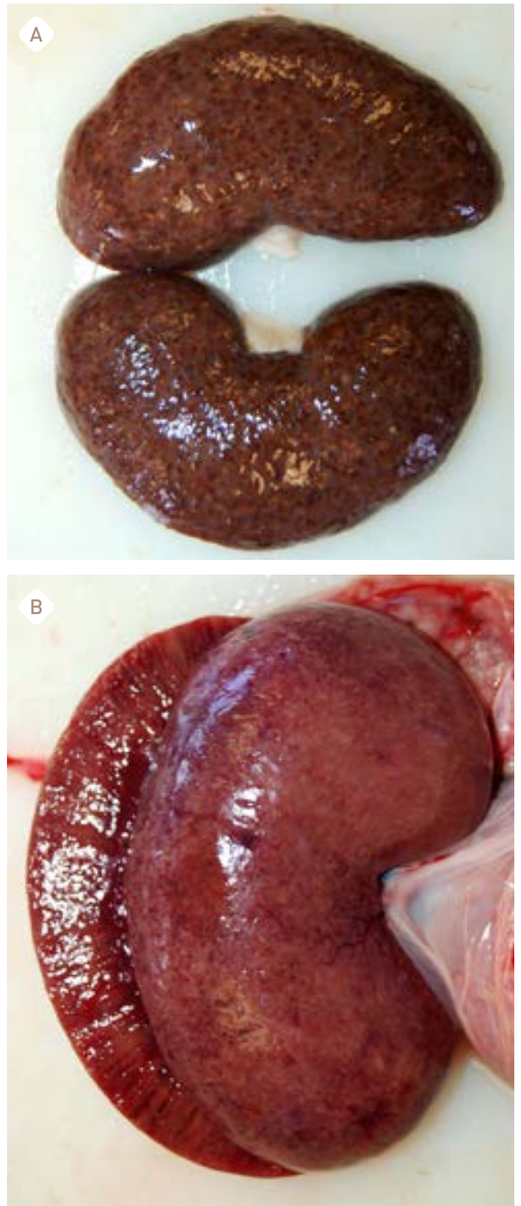
MEDULLARY CREST NECROSIS



5.24. **Medullary crest necrosis.** It is a necrosis of the medullary crest caused by the ischemia of the inner medulla and can be primary or secondary. Primary lesions occur in animals treated with NSAIDs. Secondary crest necrosis is caused by factors such as pyelitis/pyelonephritis, pelvic calculi and reduced blood flow in the vasa recta.

INTERSTITIAL NEPHRITIS

5.25. **Interstitial nephritis.** Interstitial nephritis is characterised by inflammatory and degenerative changes in the tubules and the renal interstitium associated with septicaemia, poisoning or certain treatments. The kidneys are turgid, and there may be adhesions of the injured areas to the renal capsule deepening into the renal parenchyma and making it difficult to detach the renal capsule (A and B).



5.26. **Chronic interstitial nephritis.** These lesions tend to become chronic and heal, leaving images of retracted kidneys with a very evident whitish stippling (A and B).

6.8. **Scrotal warts.**

6.9. **Skin tags.**

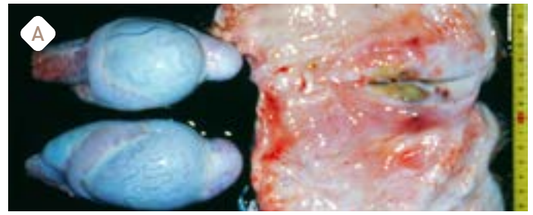
6.10. **Scrotal scabies.** (A and B).

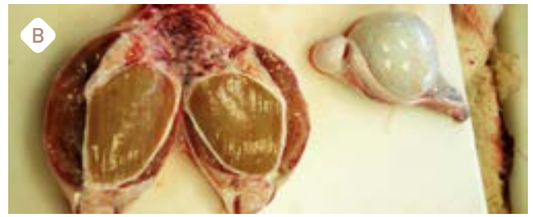
6.11. **Atopic alopecia.**

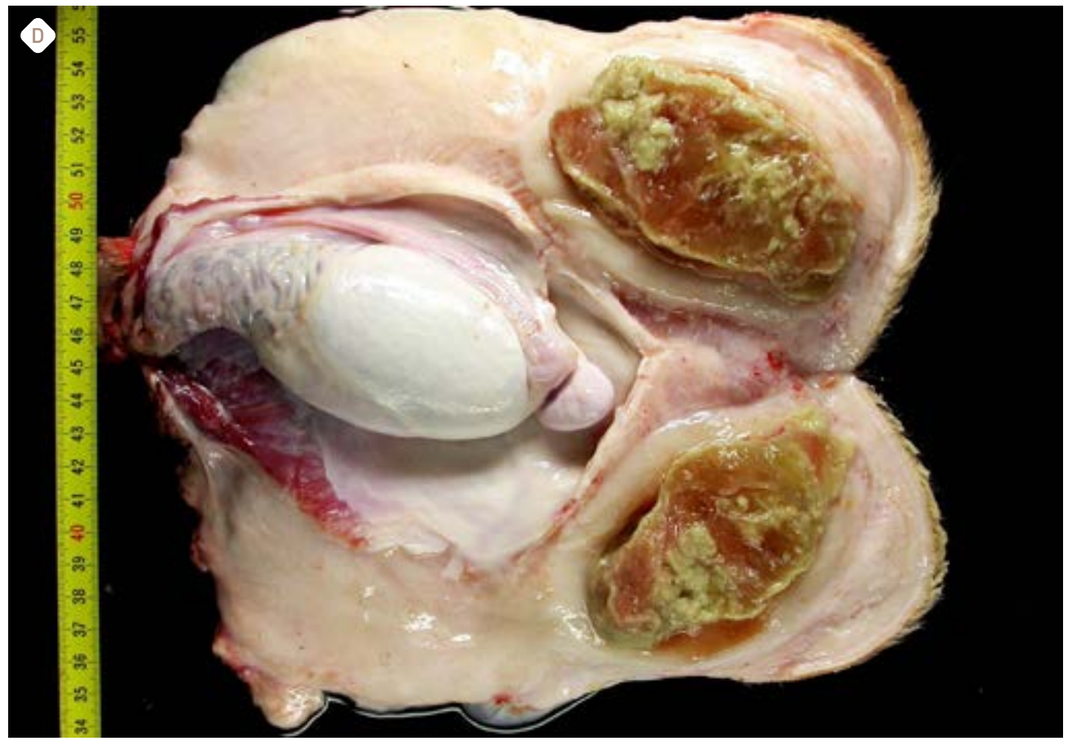
6.12. **Normal pigmentation.** Normal pigmentation of the scrotum may be confused with abnormal conditions.

6.13. **Castration with Burdizzo pliers.** This type of castration is in disuse or prohibited in most countries. It leaves skin lesions for a long time (A), but also the marks in the scrotal content can be observed at the level of the vas deferens and even on the pampiniform plexus (B).

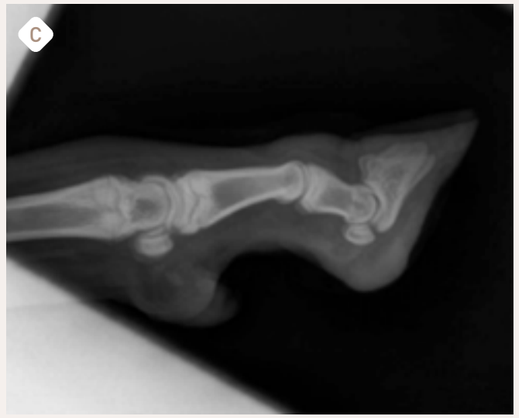
PERIORCHITIS







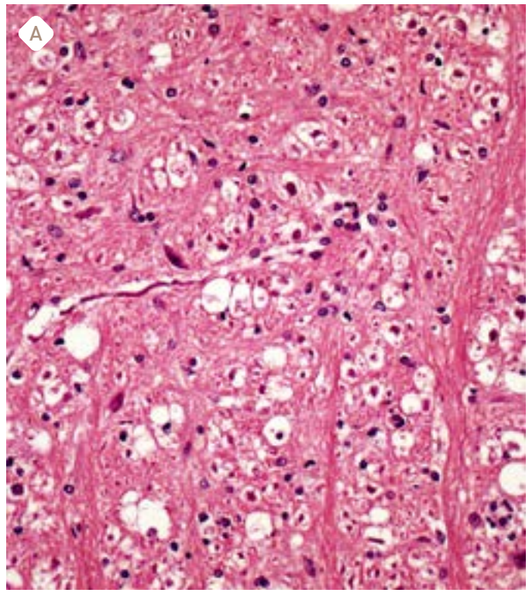
6.14. **Periorchitis.** Inflammation of the layers surrounding the testicle (vaginal, subcutaneous tissue and fasciae) can have an infectious or traumatic origin and cause an increase in the volume of the scrotal content (A). Occasionally, fibrinous masses accumulate between the two layers of the tunica vaginalis (B). Microbial contamination can cause fibrino-purulent masses (C and D).

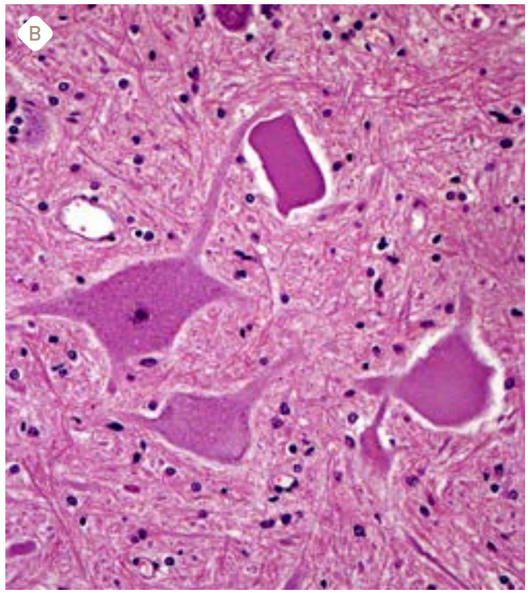


8.21. **Section of the hoof.** Sectioning the hooves lets us see haemorrhages, oedemas and thrombi in the chorion (A). In some cases, separation and rotation of the third phalanx can be observed (B), which is appreciated in vivo by radiography (C) or computed tomography.

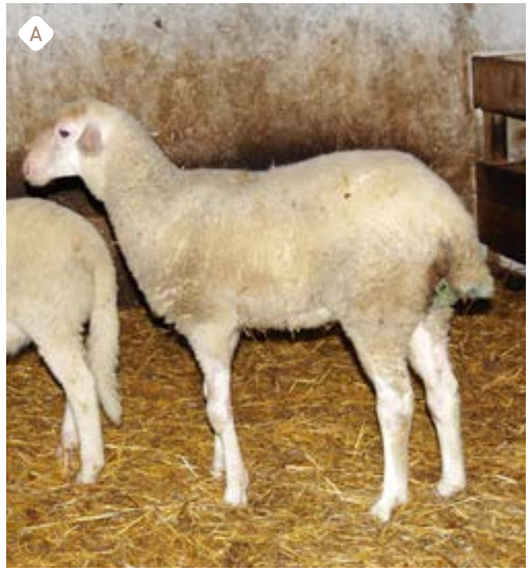
LAMENESS OF NEUROLOGIC ORIGIN

8.22. **Enzootic ataxia or swayback.** Enzootic ataxia is caused by a copper deficiency. It is a locomotor process resulting from an alteration in nerve impulse transmission, primarily affecting the hind limbs. The process mainly affects young animals in the first days of life (A) up to 2-3 months (B and C).





8.23. **Congenital hypomyelogenesis.** An intense demyelination is observed in the brain of a newborn lamb that diet due to enzootic illness.



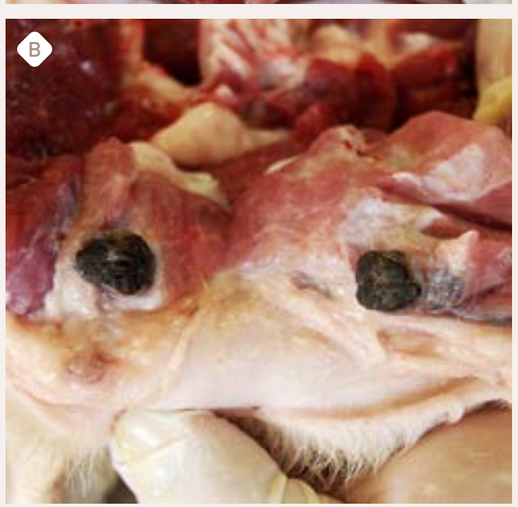
8.24. **Lameness associated with myelitis.** After caudotomy or tail docking, especially in surgical procedures, an infection can spread to the medullary canal, and cause myelitis with hindlimb paresis (A and B).

DISORDERS OF MUSCULAR ORIGIN

TUMOURS

8.45. **Tumours.** Muscle tumours affecting the limbs can also affect locomotor function.

IATROGENIC MUSCLE NECROSIS



8.44. **Muscle necrosis.** The application of substances by the intramuscular route in the thigh is relatively frequent. If the technique is inadequate or the product does not have the required quality, it can generate necrosis in the injection site (A). Sometimes, there may be a strong reaction with encystment of the necrotic area (B).

DISORDERS OF VASCULAR ORIGIN

OEDEMA

8.46. **Oedema.** Oedema of the declining areas of the body and limbs is frequent in animals at the end of pregnancy, as well as a consequence of cardiac, renal or hepatic disorders, in addition to appearing in digestive disorders with severe hypoproteinemia or infections. The picture shows oedema associated with a heart condition caused by an abscess that compressed the atria and hindered venous return.

THROMBOSIS

8.47. **Thrombosis.** Thrombi can be located in different vessels, affecting the vascularisation of the area. The image shows a thrombus located in the saphenous vein that affected locomotion.

MALIGNANT OEDEMA

8.48. **Malignant oedema.** Malignant oedema is an acute, generally fatal toxaemia usually caused by *Clostridium septicum*. It causes anorexia and high fever. The local lesions develop within 6-48 hours and are soft swellings (A) that crackle under pressure (B) and extend rapidly because of the formation of large quantities of exudate that infiltrate the subcutaneous and intramuscular connective tissue of the affected areas (C).