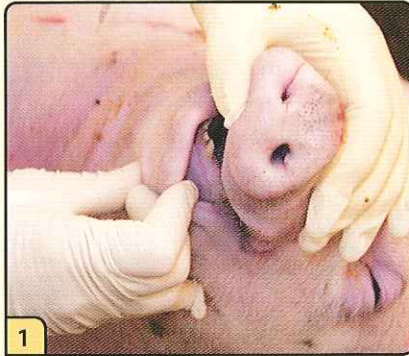


2 NECROPSY EXAMINATION OF SWINE



Perform an external examination. Look for vesicular lesions on the nostrils, lips, tongue, gums, feet, and claws.



Examine the perianal region, assessing for evidence of diarrhea.



Position the animal in either dorsal or lateral recumbency. Most swine necropsies are done with the animal in dorsal recumbency. Generally, only mature pigs greater than 2 years of age, which are too large to position in dorsal recumbency, are necropsied in left lateral recumbency.



4 Elevate the right forelimb and insert the knife between the axilla and the thorax.



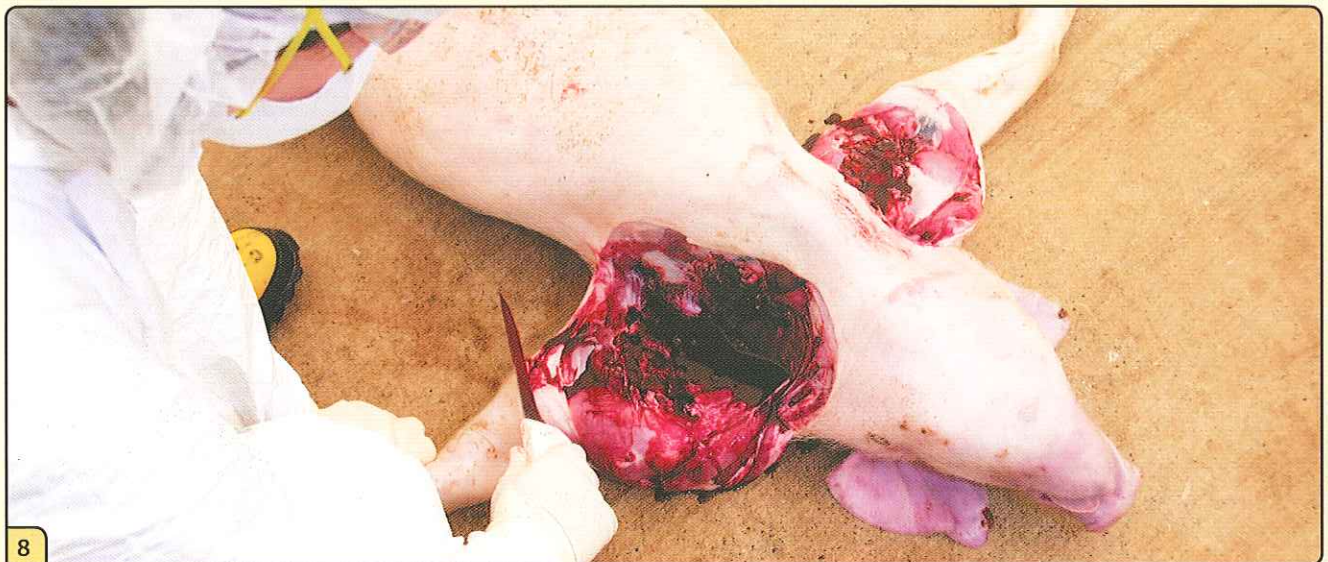
5 To prevent the knife from becoming dull, cut from the subcutaneous to the external side.



6 Reflect the right forelimb laterally.



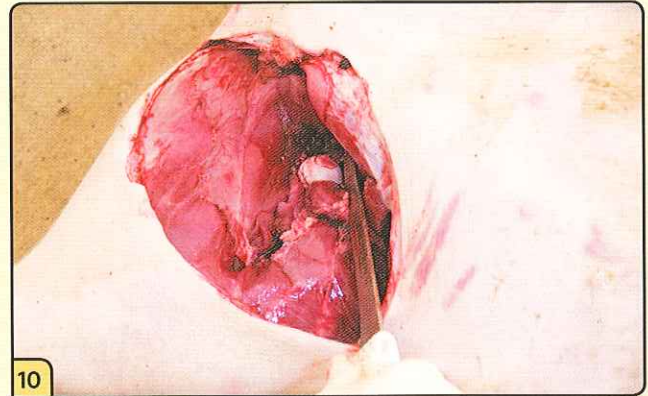
7 Elevate the left forelimb and insert the knife between the axilla and the thorax.



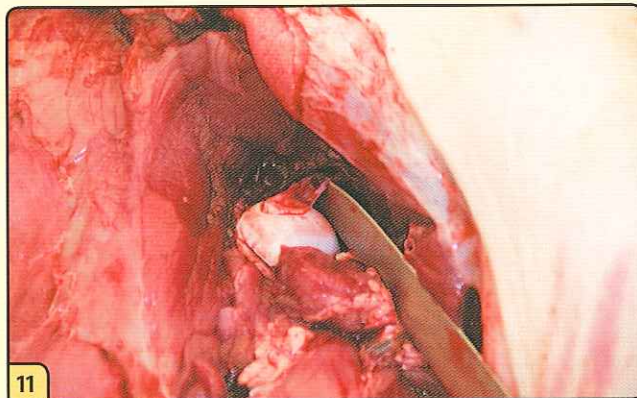
8 Reflect the left forelimb laterally.



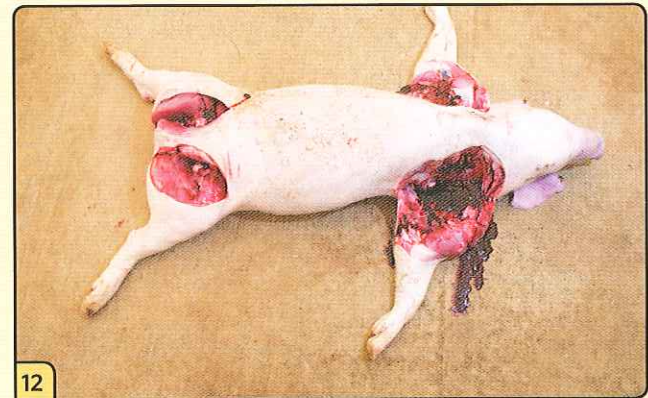
Insert the knife into the inguinal region of the left hindlimb.



Extend the cuts into the soft tissue until the coxofemoral joint is exposed and opened.



Transect the ligament of the head of the femur.

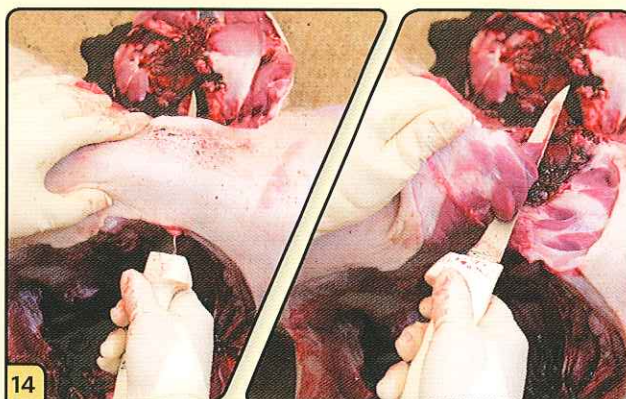


Repeat the same procedure on the right hind limb and reflect both hind limbs laterally so they can lie flat.



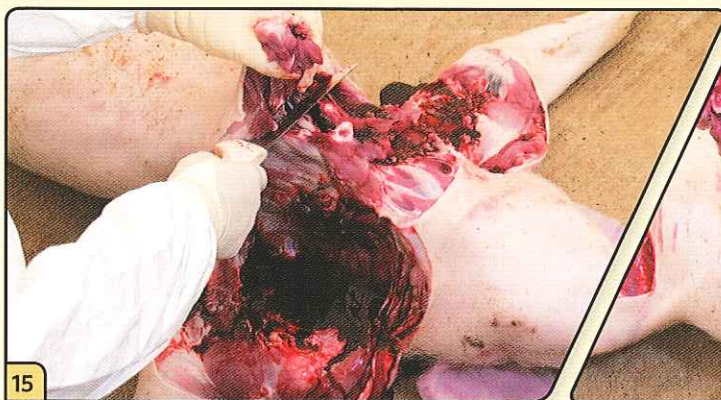
13

In younger pigs, the thoracic cavity can be entered by removing the sternum. Begin by inserting the knife (sharp blade facing cranially) beneath the skin over the manubrium.



14

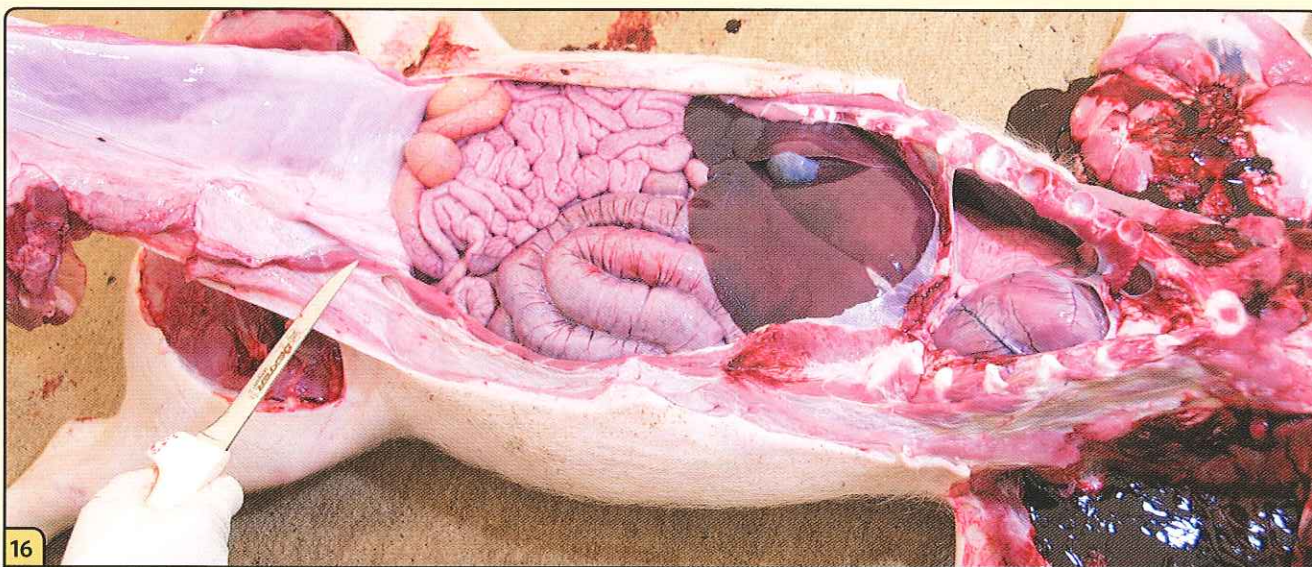
Rotate the blade ventrally and cut the skin.



15

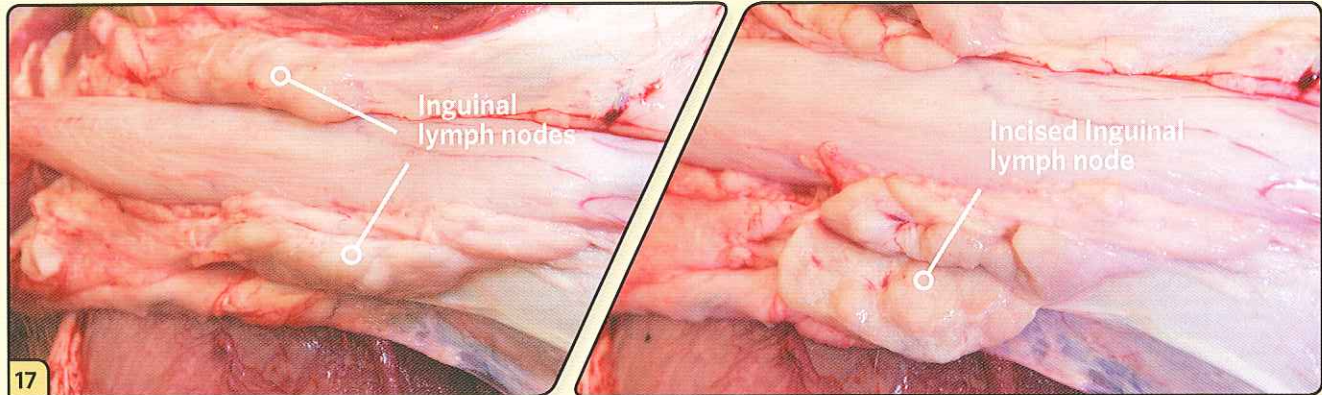


Starting at the manubrium, cut along the costochondral junctions of the ribs, working your way to the caudal thorax.

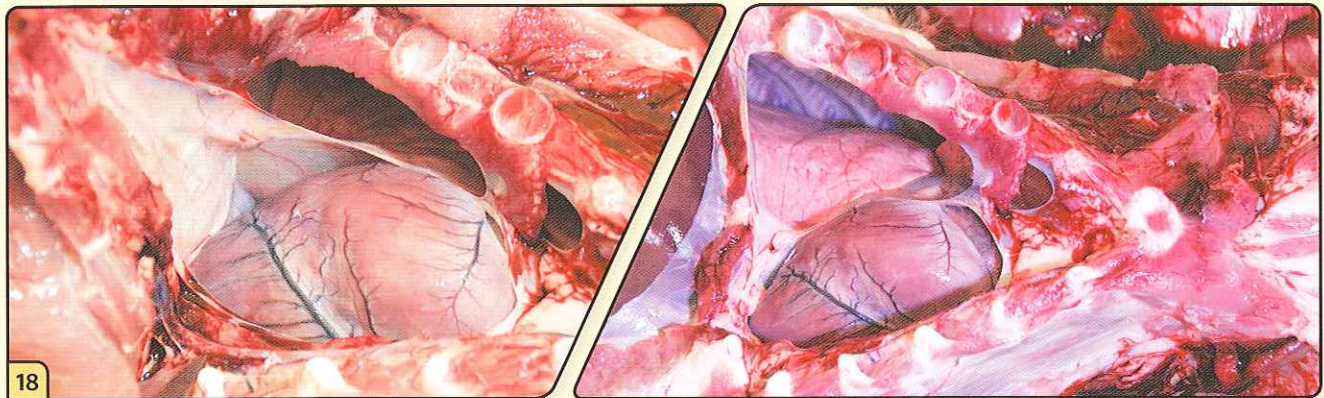


16

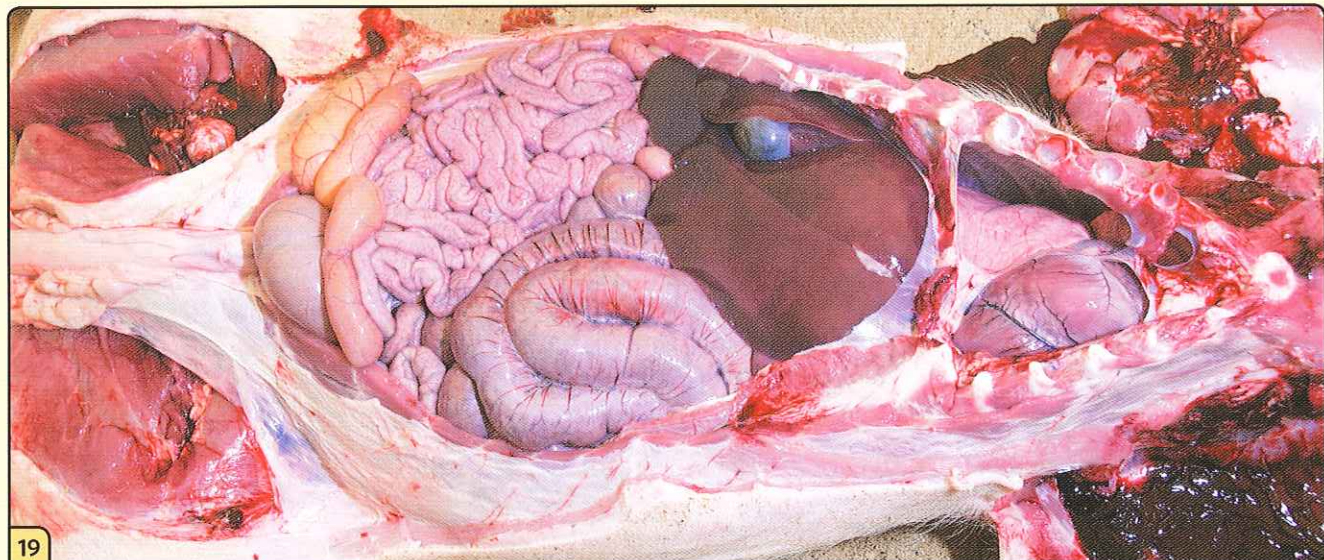
Continue the cuts caudally to the level of the inguinal incisions.



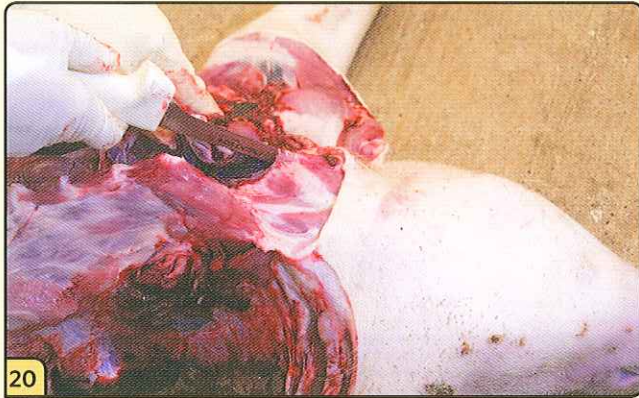
Identify the inguinal lymph nodes, located caudally on either side of the reflected abdominal flap. Incise and exam the lymph nodes.



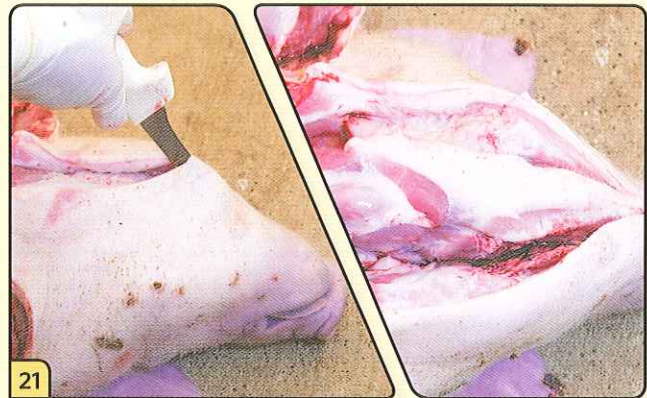
Cut the mediastinum and pericardium to expose the lungs and heart for visual inspection. Examine the thoracic viscera *in situ*.



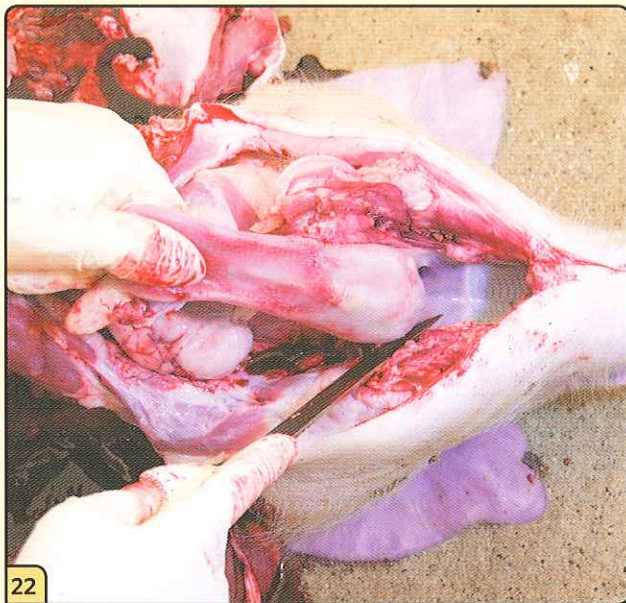
Examine the abdominal viscera *in situ*. Before handling the organs, stop to collect all "clean" tissue samples for microbiology and histopathology. At a minimum, collect samples from lung, liver, spleen, kidney, and lymph nodes, as well as samples of any lesions present.



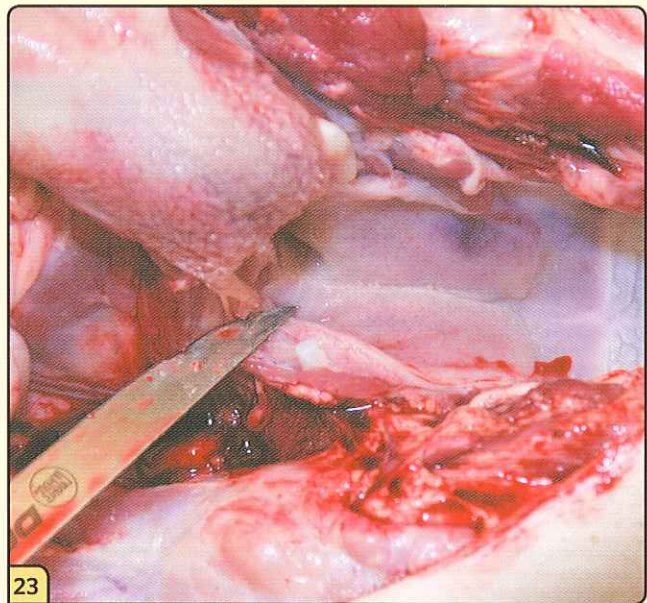
20 Extend the cut up to the level of the mandibles.



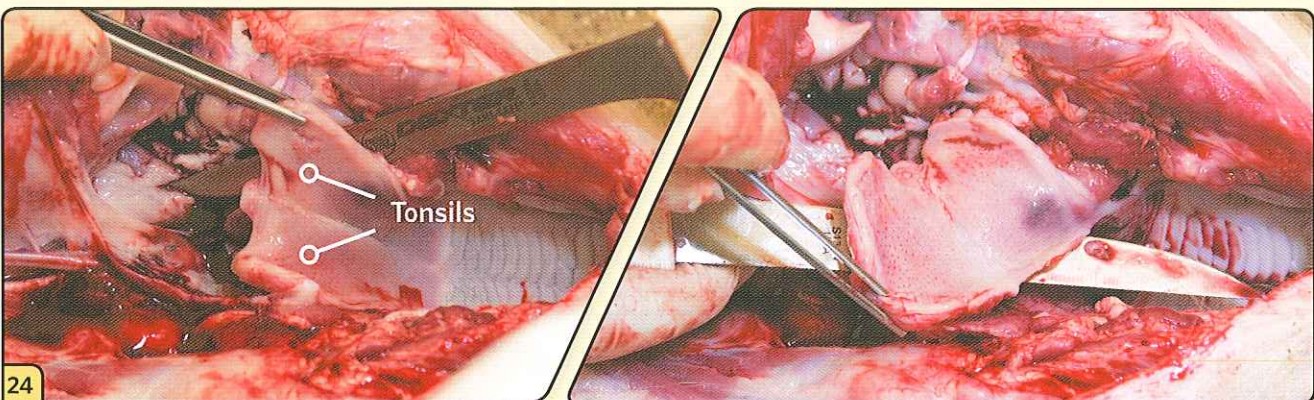
21 Cut along the medial aspect of both mandibles to free up the tongue.



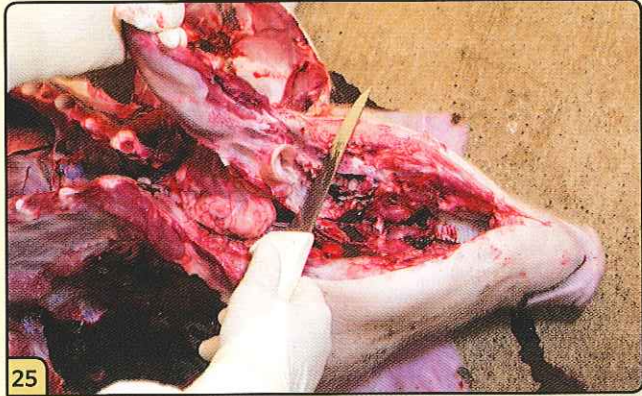
22 Pull the tongue ventrally and caudally to expose the oral cavity for inspection.



23 Cut between the hyoid bones to disarticulate the hyoid apparatus.

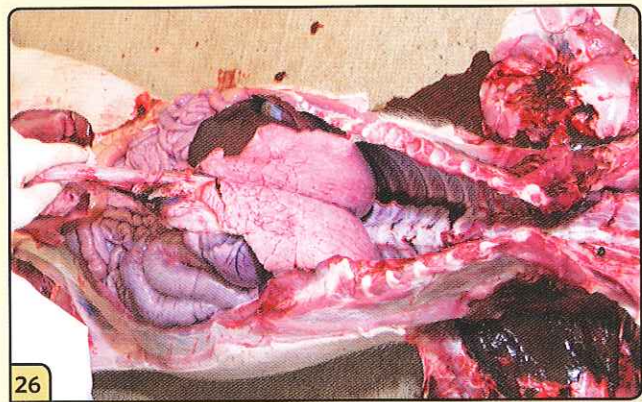


24 Identify the tonsils, located on the dorsal aspect of the oral cavity, caudal to the hard palate. Remove the tonsils and submit them for microbiology and histopathology.



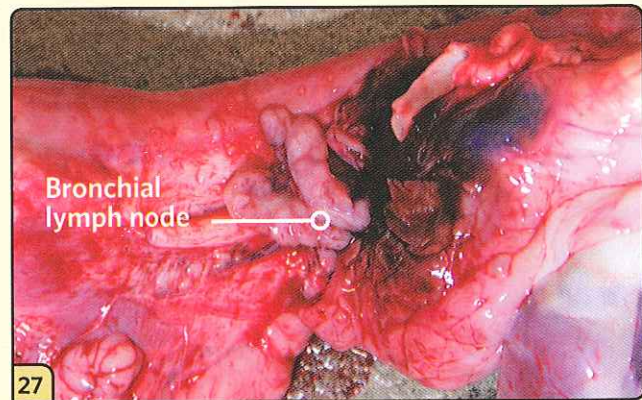
25

Retract the tongue and cut the attachments along the trachea and esophagus, working your way down to the level of the thoracic inlet.



26

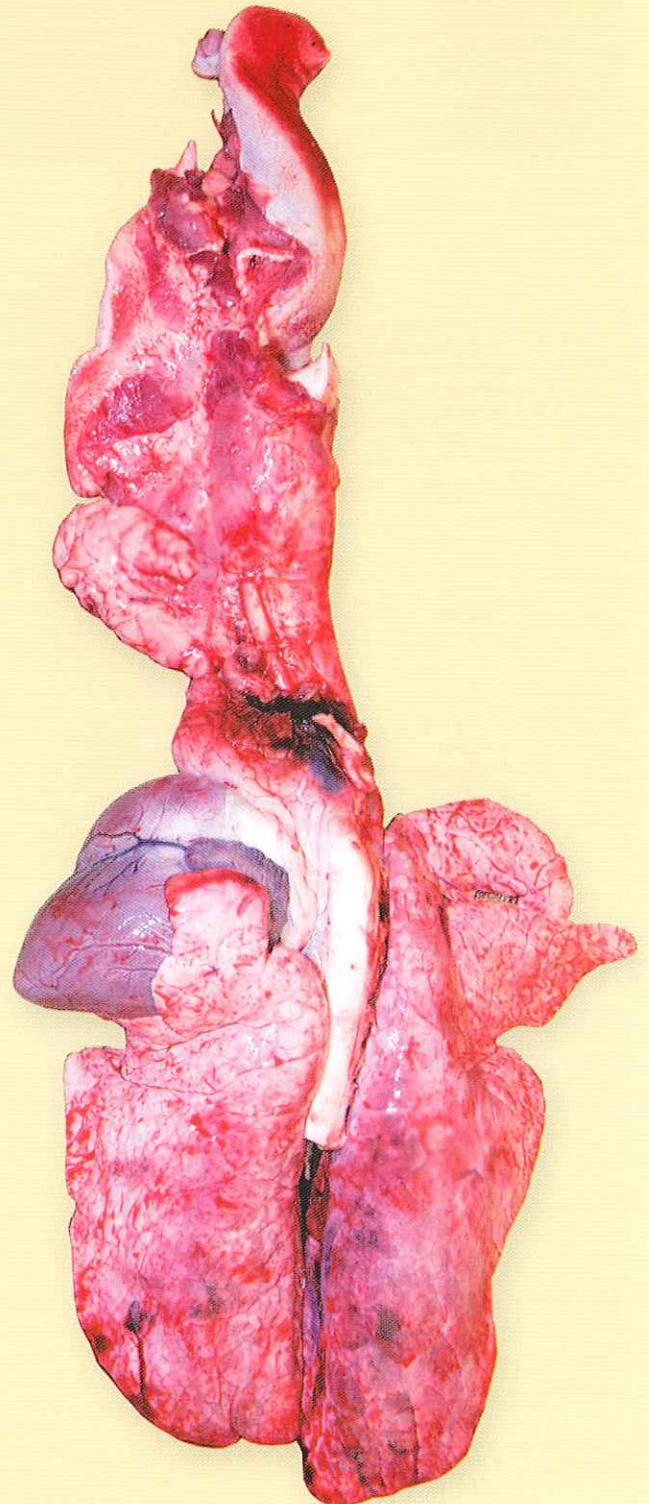
Dissect around the lungs and heart to free up the pluck. Set the pluck aside for a more detailed examination.

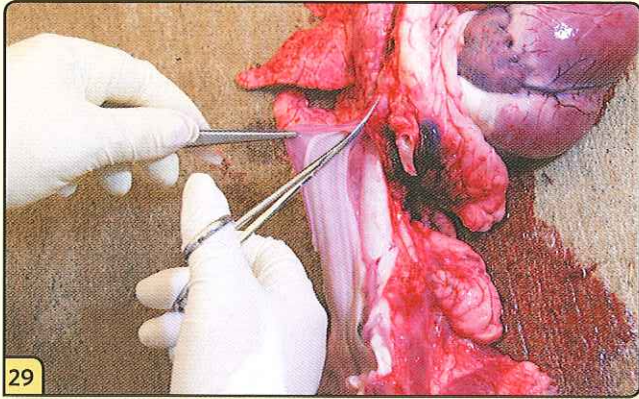


27

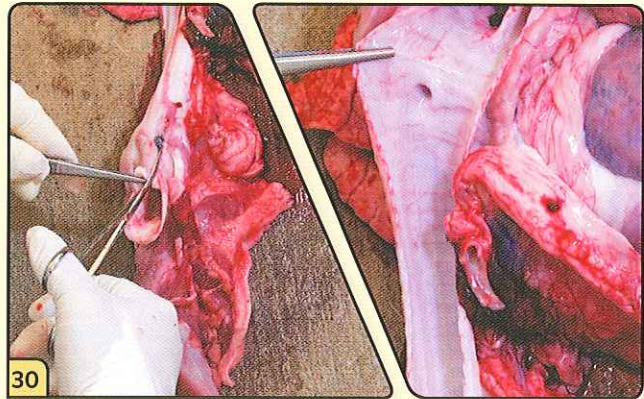
Locate and examine the tracheobronchial and mediastinal lymph nodes. The tracheobronchial lymph nodes are located at the bifurcation of the primary bronchi.

Mediastinal lymph nodes are often scattered, but can be found in the cranial mediastinum, associated with the large blood vessels, trachea, and esophagus; in the middle mediastinum, dorsal to the aortic arch; and in the caudal mediastinum, caudal to the aortic arch and ventral to the aorta.

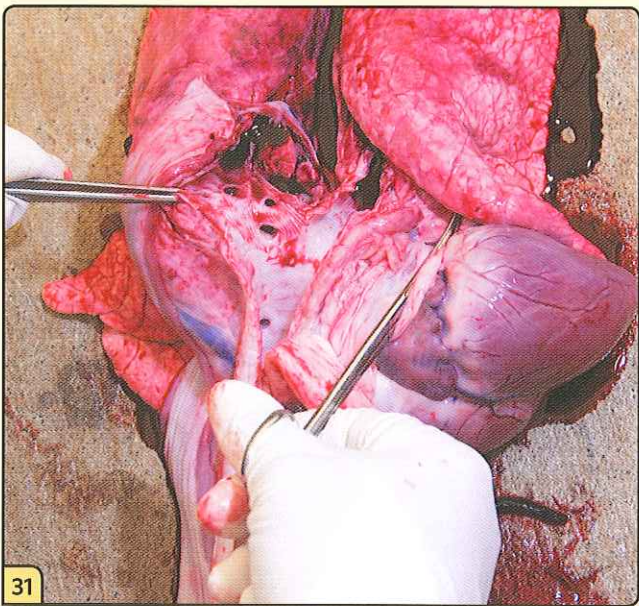




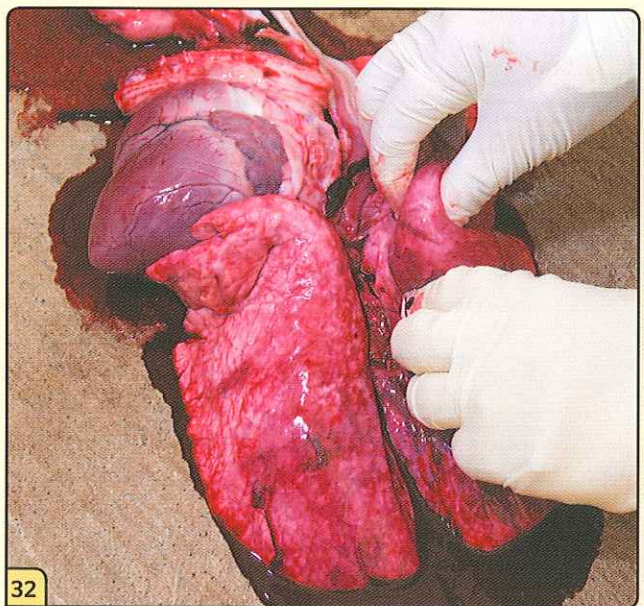
Open and examine the lumen of the esophagus.



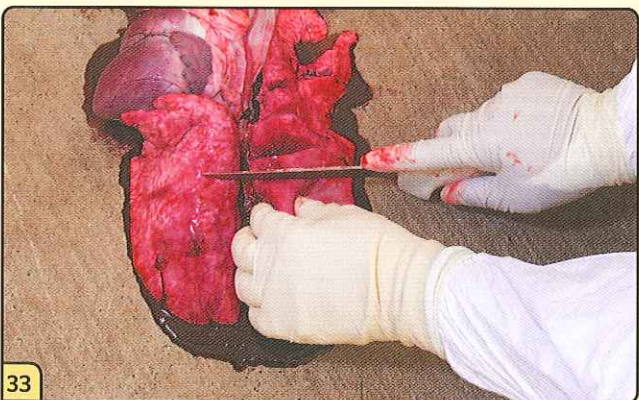
Open and examine the lumen of the trachea.



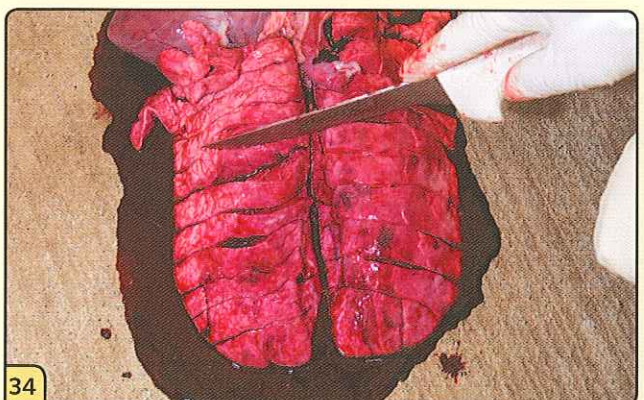
Open and evaluate the large airways of the bronchi.



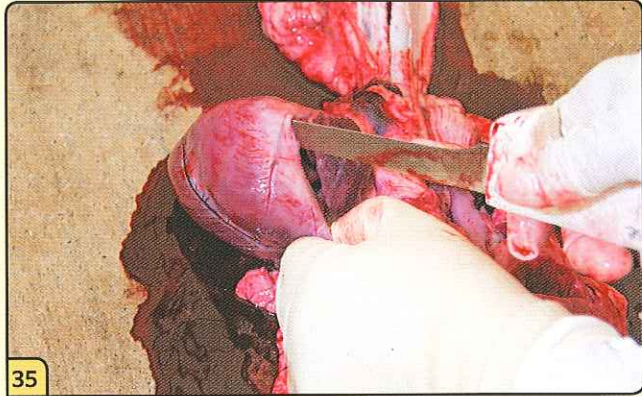
Palpate the entire lung field to assess for any abnormalities.



Incise the lungs by making a series of "bread loaf" slices across the entire lung field.



Palpate and examine each slice, assessing for masses and consolidation.



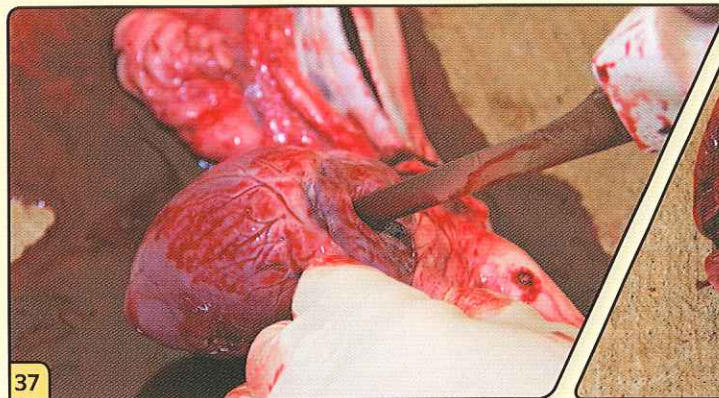
35

Open the left side of heart by cutting through the free wall of the left atria and left ventricle.

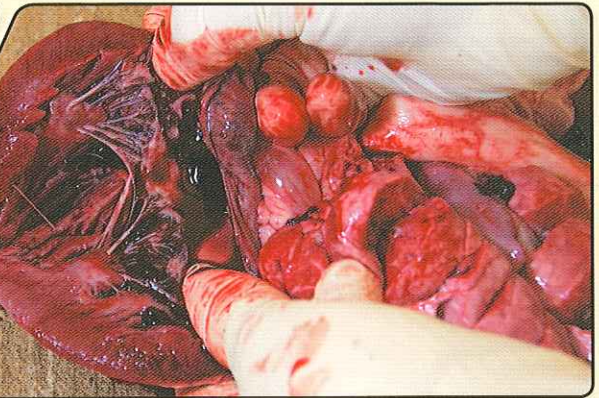


36

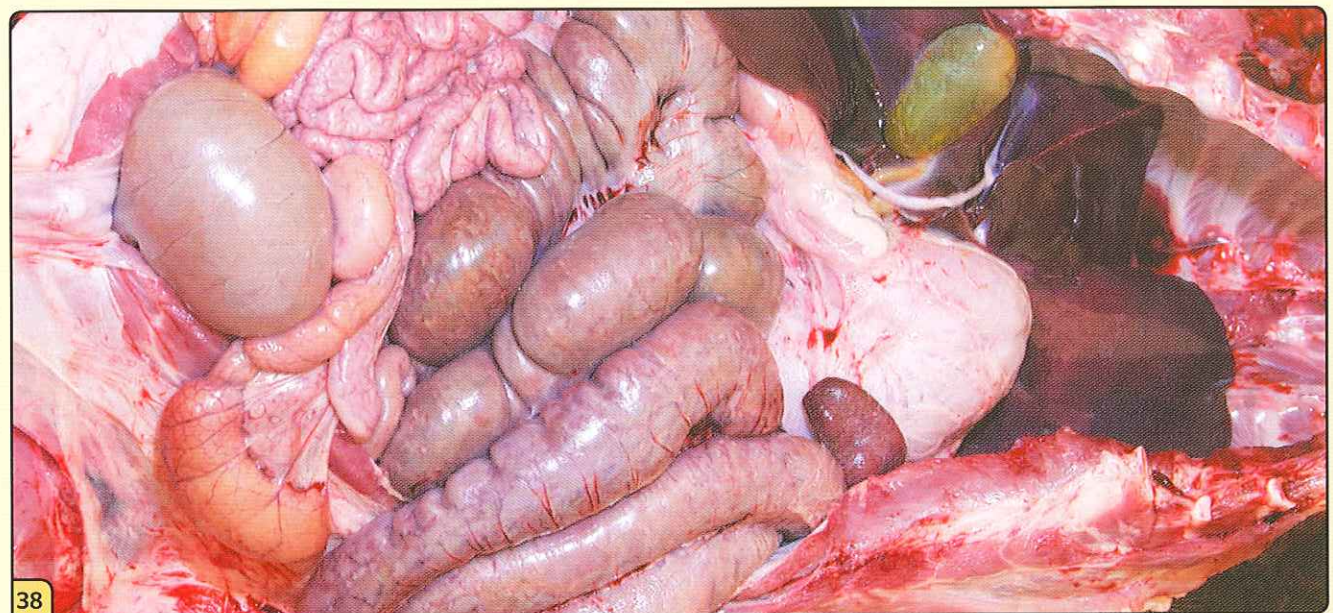
Follow the course of blood flow from atria to ventricle, evaluating the chambers, valves, and myocardial walls.



37

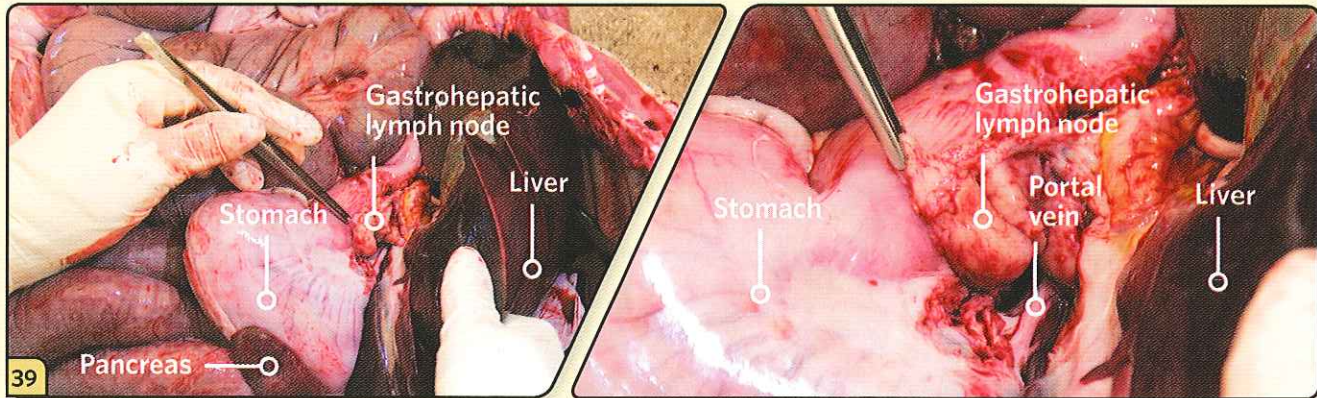


Repeat the process on the right side of the heart.

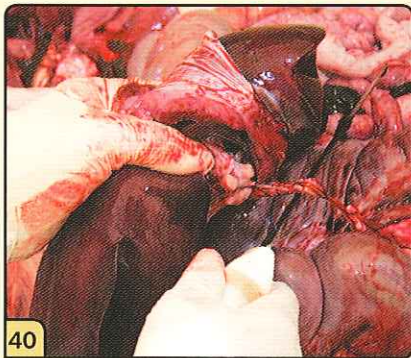


38

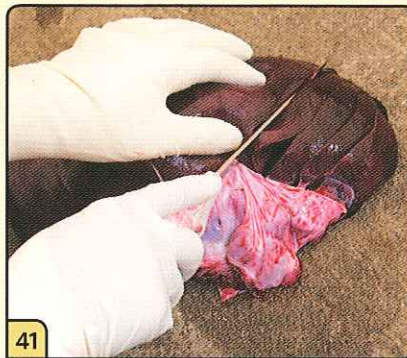
Observe abdominal viscera *in situ*.



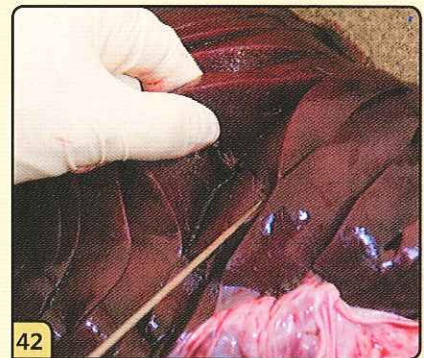
Identify and inspect the gastrohepatic lymph nodes, located between the stomach and liver, adjacent to the portal vein.



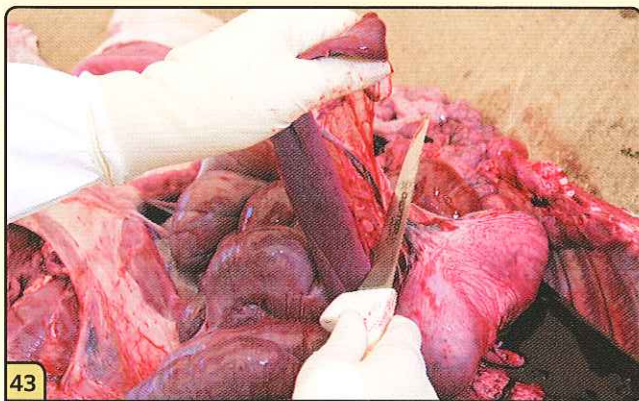
40 Cut the attachment of the liver and set the liver aside for a more detailed inspection.



41 Make a series of slices across the entire liver.



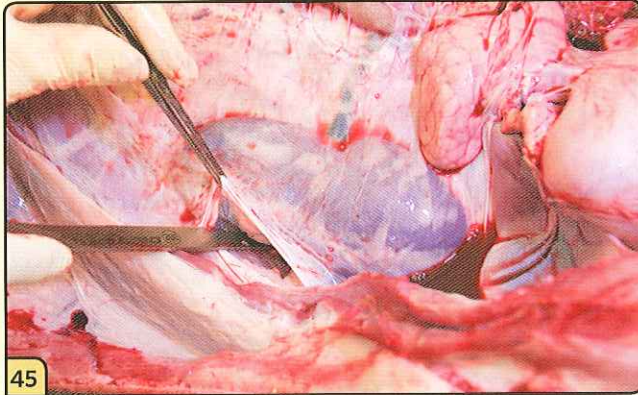
42 Evaluate each slice, assessing for abnormal areas that require sampling. Collect a representative section of liver for diagnostic testing.



43 Identify the spleen, located under the stomach. Remove the spleen and set it aside for a detailed inspection.

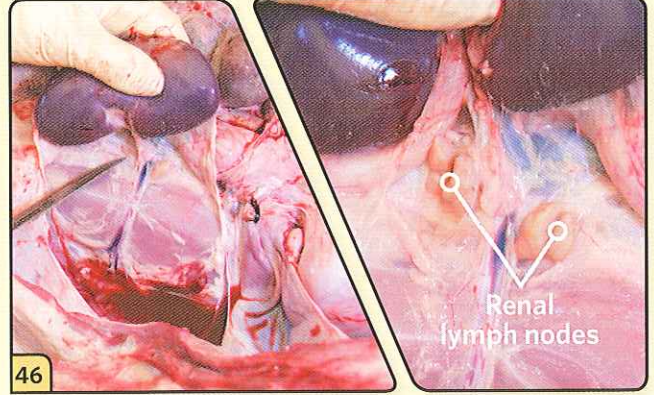


44 Make a series of slices across the spleen, evaluate the sections, and collect tissue samples.



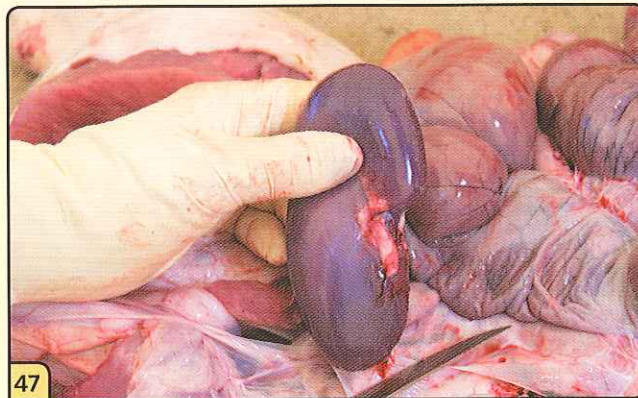
45

Identify the kidneys, located dorsally in the retroperitoneal space.



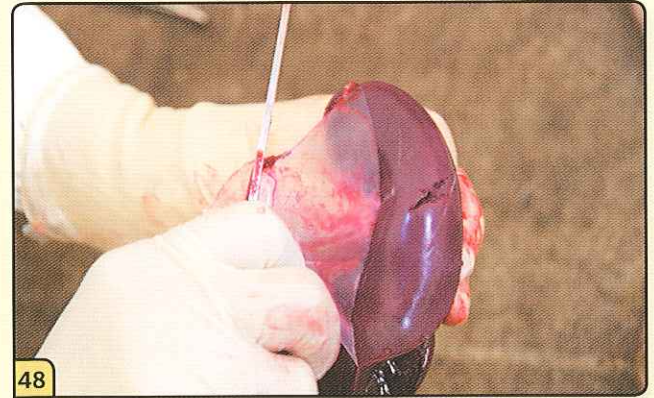
46

Dissect around the kidneys, and reflect them medially to expose the renal vessels. Identify the two renal lymph nodes on either side of the blood vessels, close to the kidneys.



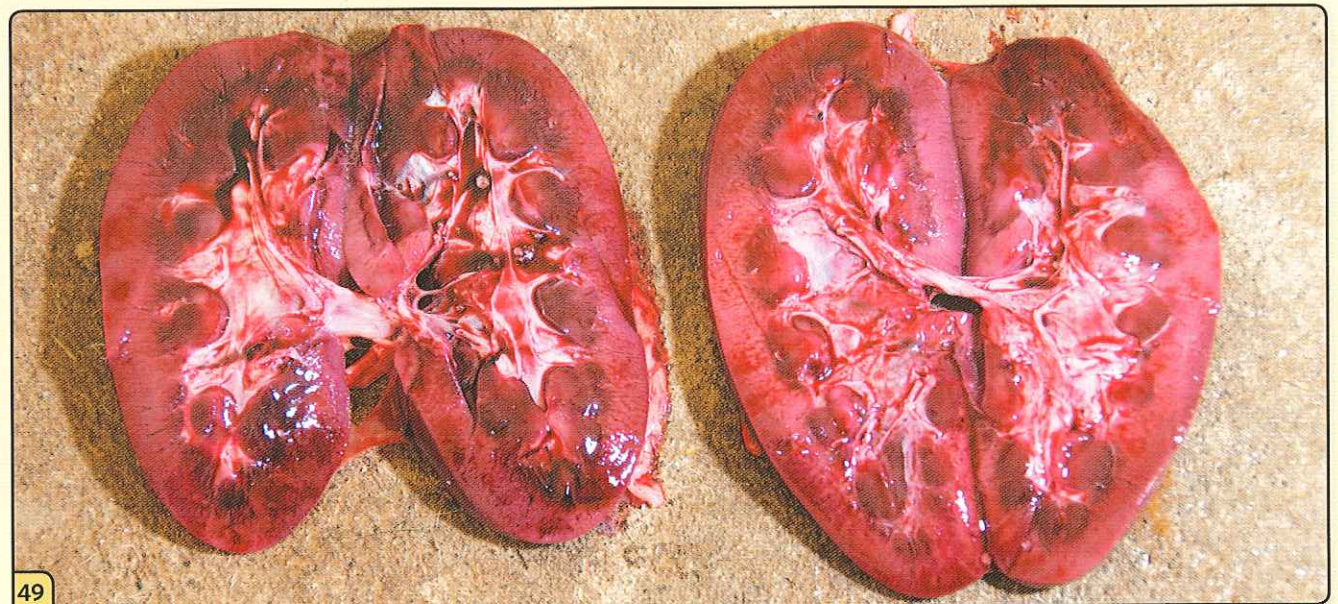
47

Remove the kidneys.



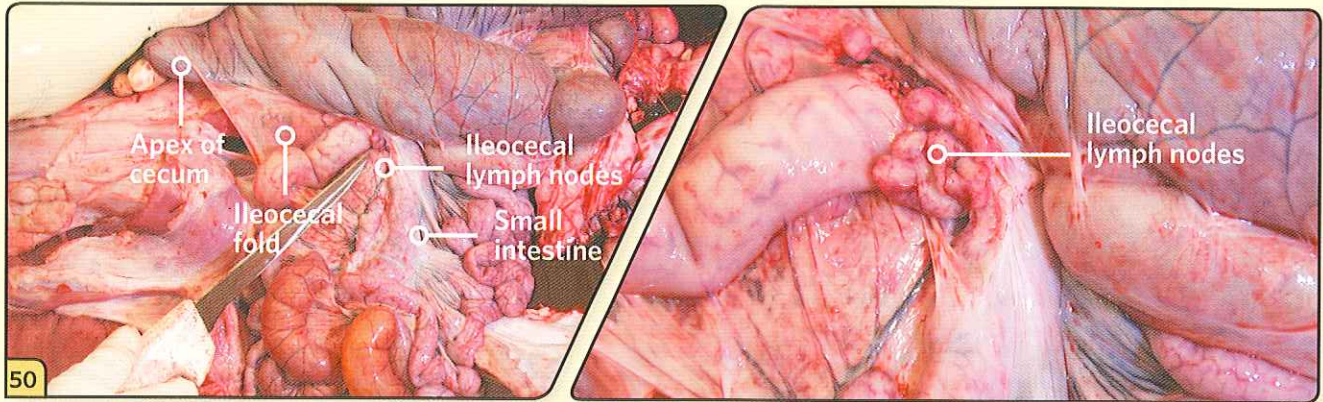
48

Peel and remove the outer capsule of the kidney.

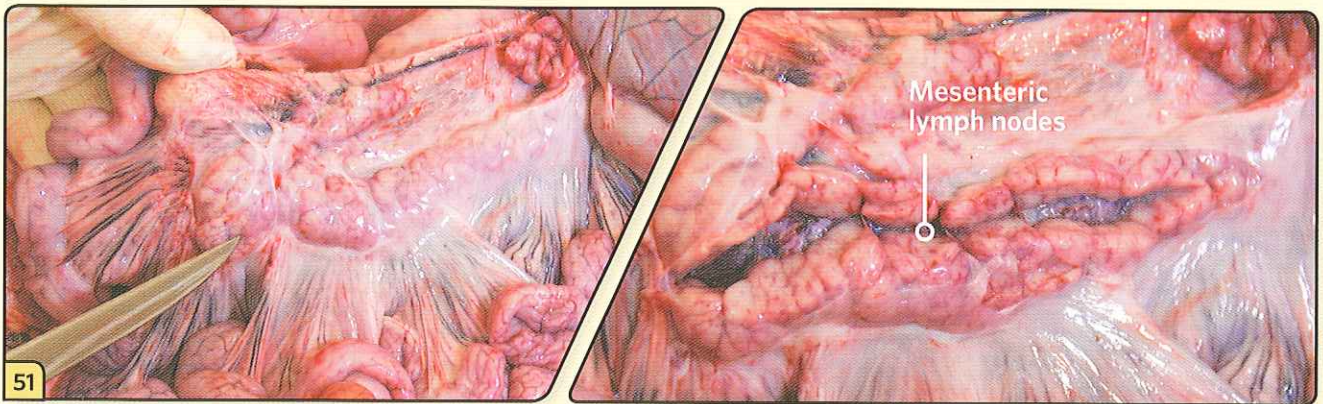


49

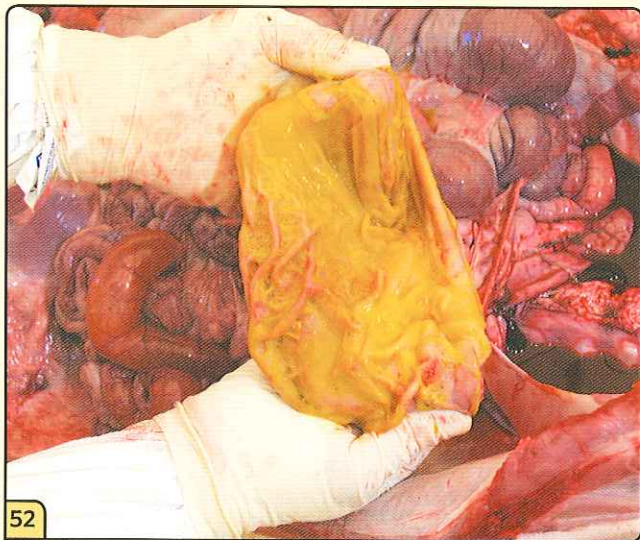
Make a sagittal cut through each kidney. Examine the inner kidneys and collect tissue samples.



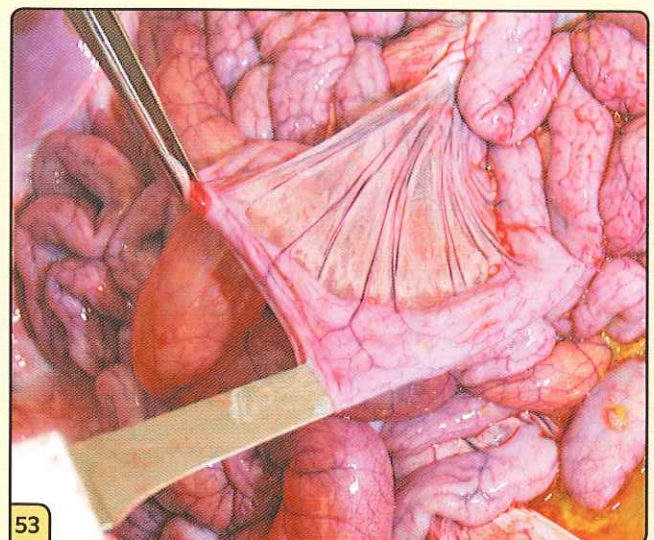
Identify and evaluate the ileocecal lymph nodes, located at the ileocecal junction. To find the lymph nodes, grasp the apex of the cecum in one hand, and the small intestine at the level of the ileocecal fold in the other, then tear the intervening mesentery to expose the lymph nodes.



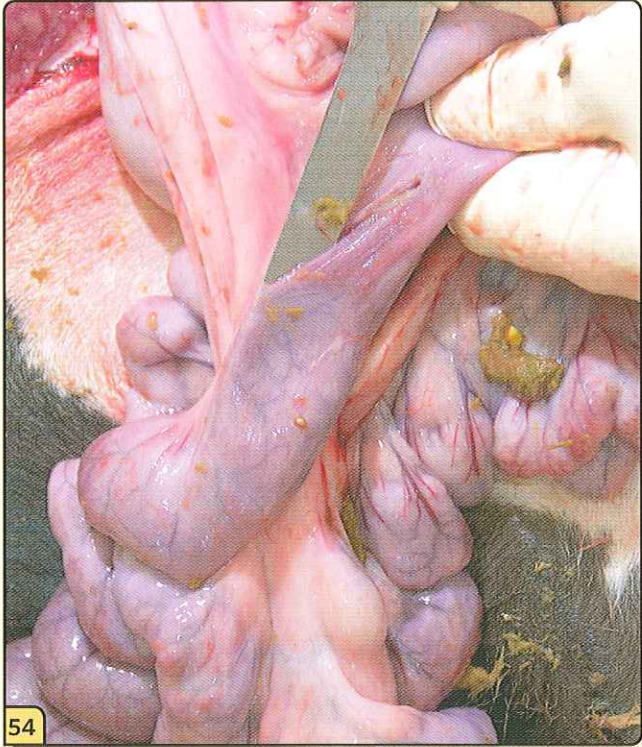
Identify and examine the mesenteric lymph nodes, located in the mesentery of the jejunum and ileum.



The GI tract is now examined in detail. This is generally done after the other organs have been examined to prevent tissue contamination caused by high levels of bacteria. Open the stomach and evaluate the contents and lumen.

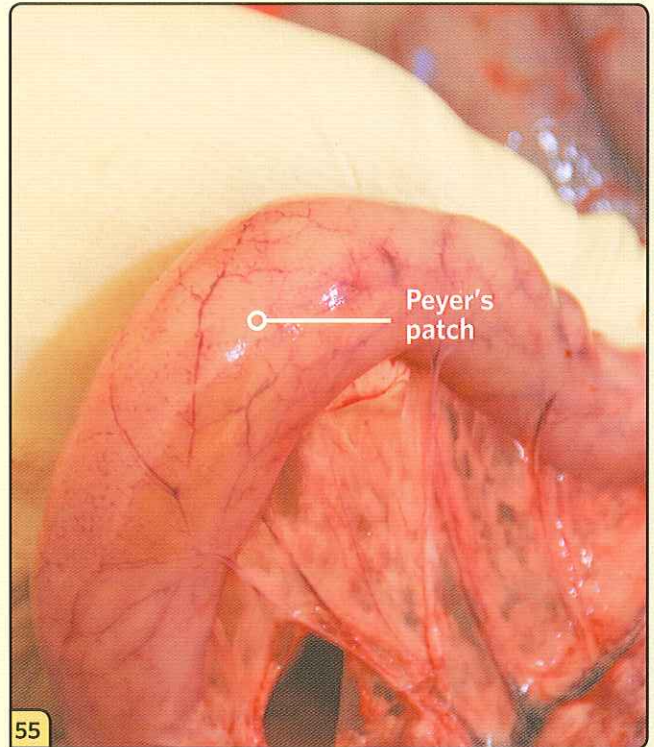


Working from oral to aboral, segmentally open and examine representative sections of normal appearing intestine.



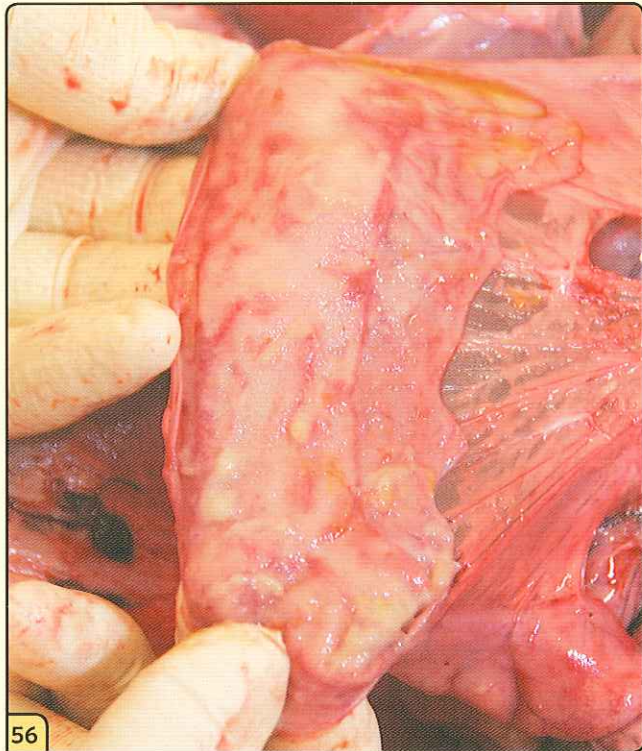
54

Any sections of intestines that appear to have gross lesions should also be opened, examined, and sampled.



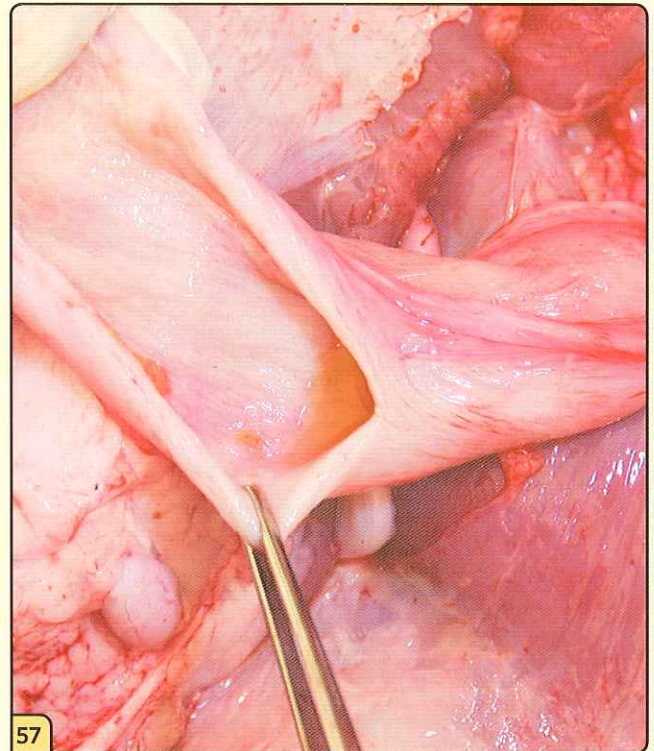
55

Locate and examine the Peyer's patches. This gut-associated lymphoid tissue (GALT) can be found along the antimesenteric border of the small intestinal wall.



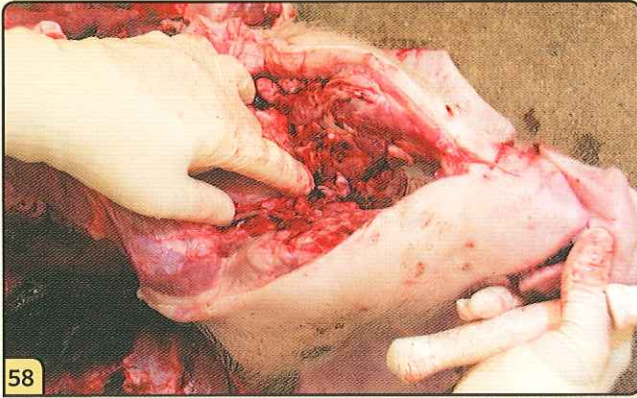
56

Open and assess several Peyer's patches, especially those at the ileocecal junction.



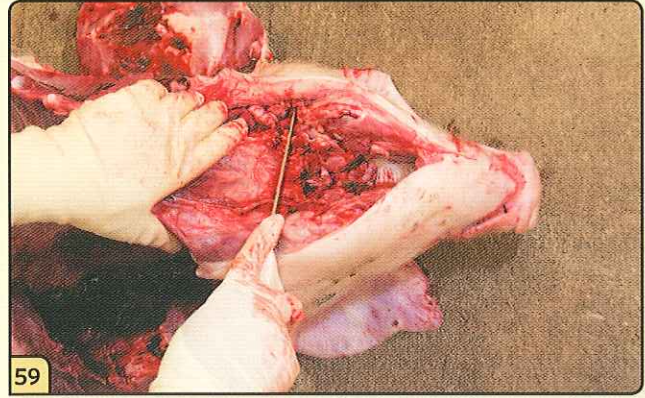
57

Open and examine the urinary bladder.



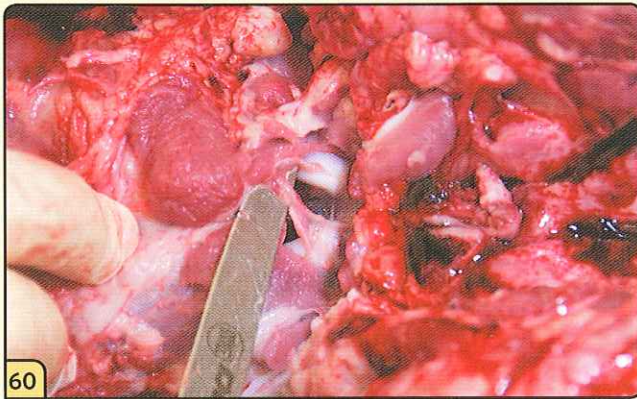
58

To remove the head, identify the atlanto-occipital joint by palpation. Flexing and extending the head can aid in identifying the location of the joint.



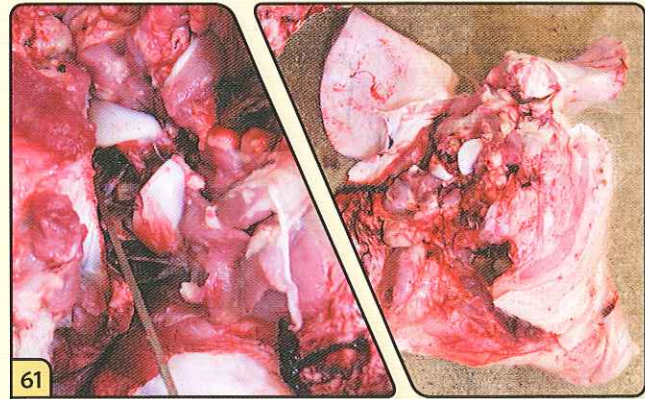
59

Cut the soft tissues caudal to the atlanto-occipital joint and the ramus of the mandibles.



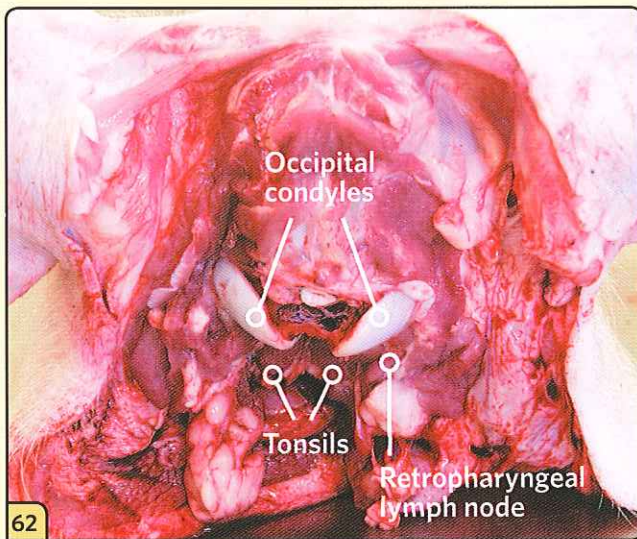
60

Cut the junction between the 1st cervical vertebrae and the occipital junction.



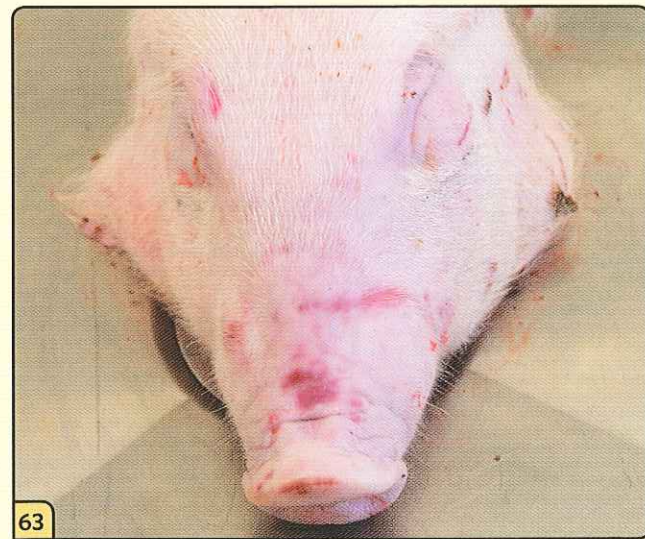
61

Cut the spinal cord and disarticulate the head.



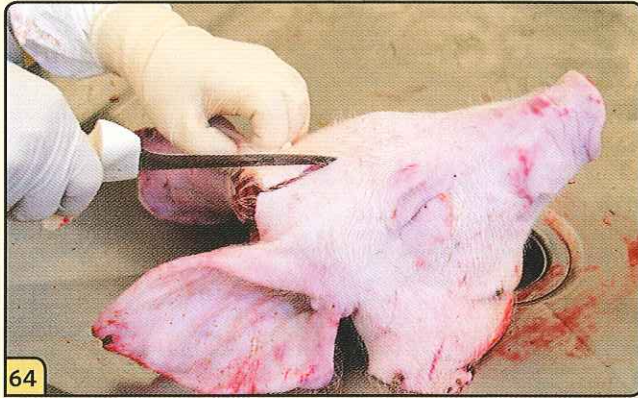
62

Identify and examine the retropharyngeal lymph nodes, located ventral to the occipital condyles and dorsolateral to the tonsils.



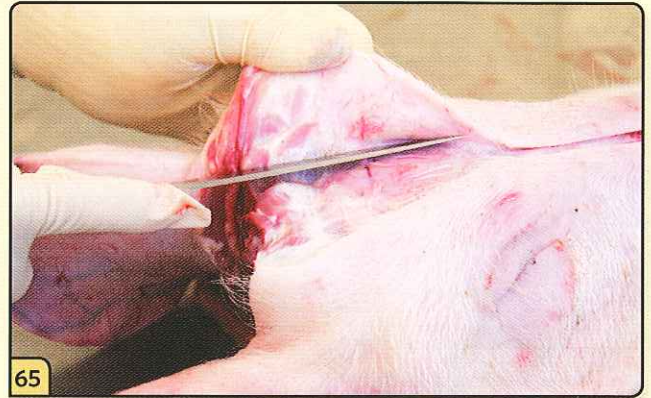
63

To facilitate opening the skull, the head can be placed on an elevated table.



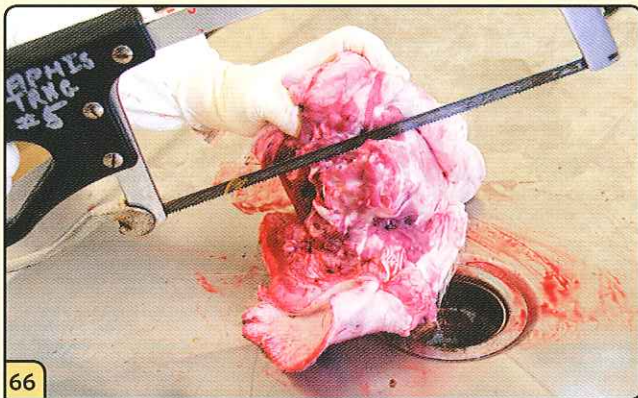
64

To remove the brain for testing, begin by making a mid-line cut through the skin.



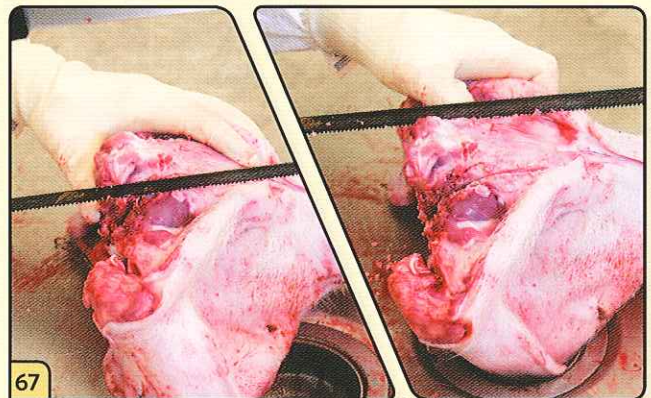
65

Peel the skin bilaterally to expose the underlying skull bone.



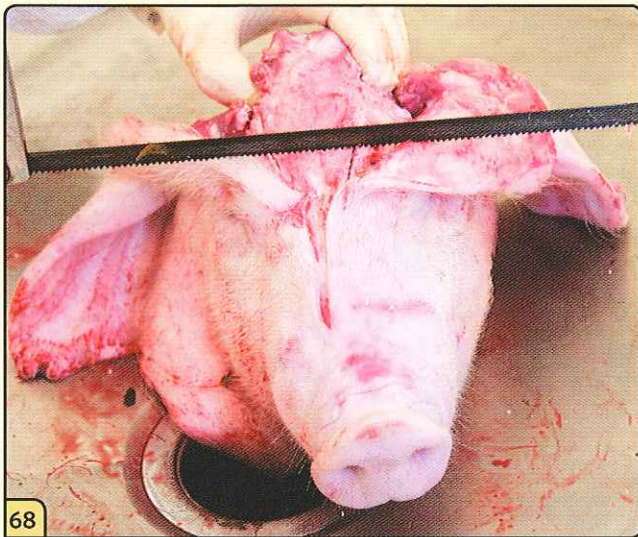
66

Using the bone saw, make a cut on the medial aspect of both occipital condyles.



67

Continue the first two cuts by extending them vertically along the frontal sinuses



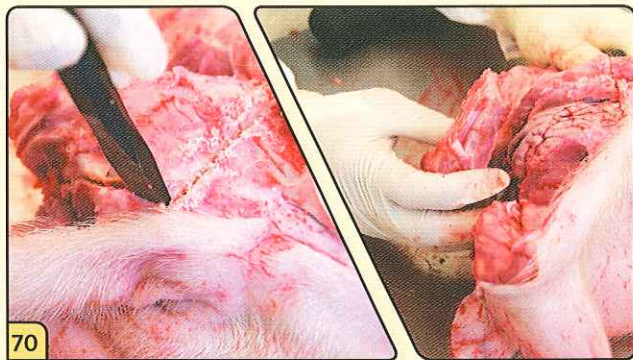
68

Make a final cut to connect the two vertical cuts along the sinuses.

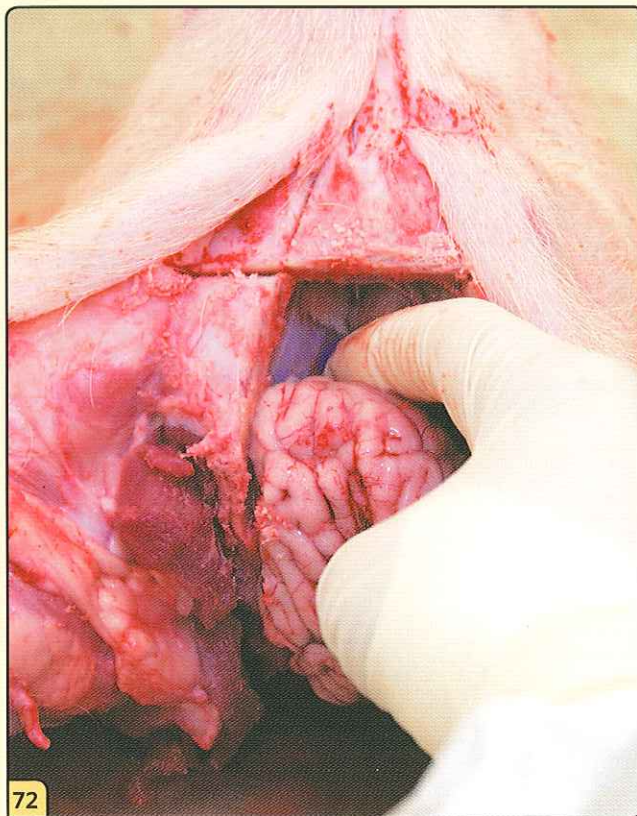


69

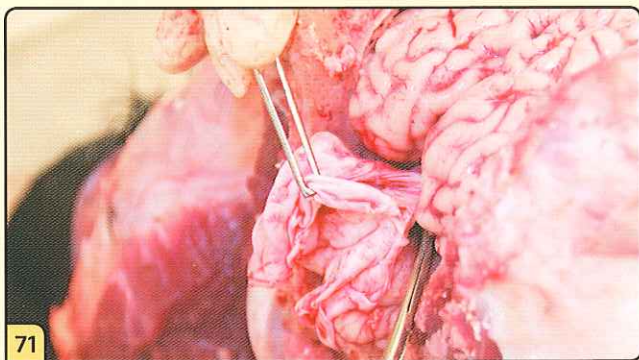
Use a hammer to drive the chisel into the cut made in the skull bone.



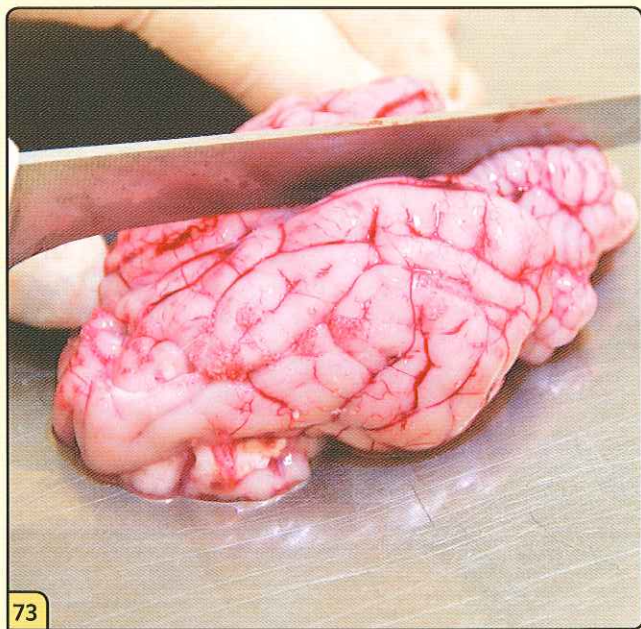
70 Use the chisel to pry open the skull bone and expose the brain.



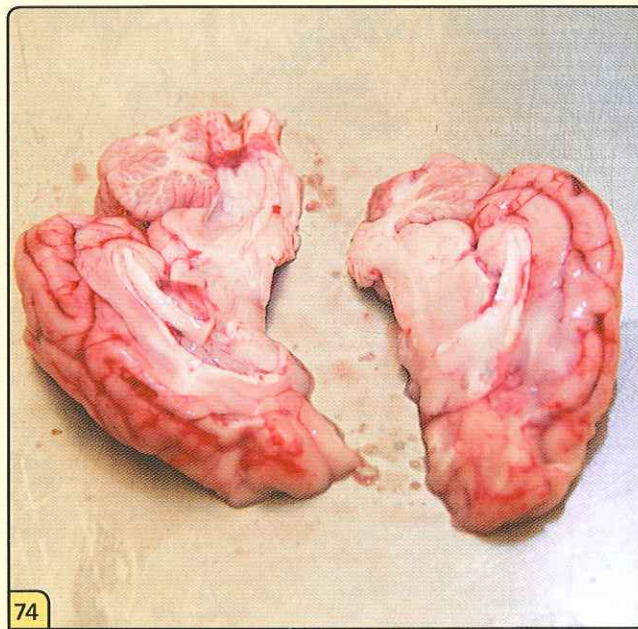
72 Using your fingers, gently work the brain from the skull. Sever the cranial nerves and remove the brain.



71 Use forceps and scissors to cut away the dura mater overlying the brain.



73 Place the brain on a clean work surface. Make a sagittal cut down the middle of the cerebrum and cerebellum to divide the brain in half.



74 Submit one half as fresh tissue for virology and the other half fixed in formalin for histopathology.



75

Open several joints, including the carpus and stifle, and examine the joint fluid and cartilage surfaces.

3 NECROPSY EXAMINATION OF POULTRY



1

Prepare a solution of detergent and water, mixed at the concentration stated on the label.



2

To keep the examination field free of feathers and dander, dip the body of the chicken from the neck down in the solution.

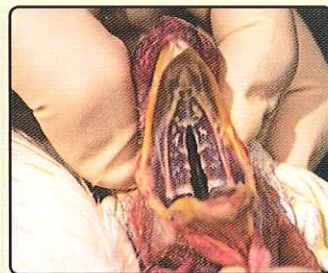


3

For ease, the poultry necropsy exam may be performed on an elevated table that can be disinfected.



4



Perform an external examination of the chicken. Examine the infraorbital sinuses and nares, eyelids and conjunctiva, oral cavity, and vent.