

TECHNIQUE OF POSTMORTEM EXAMINATION AND DIAGNOSIS OF DISEASES IN POULTRY

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INTRODUCTION

“Necropsy is the message of
wisdom from dead to living”

SIGNALMENT AND HISTORY

- Signalment
 - Age
 - Sex
 - Breed
- Flock History
 - Clinical signs
 - Severity and length of time
 - How many affected
 - Treatments
 - Production units
 - Feed and additives
 - Environment/system

EXTERNAL EXAMINATION

- Carcass condition
 - (extent of autolysis)
- Body condition
 - Keel bone prominence
- Feather and skin condition
- Eyes
- Joints
- Colour of mucosa
 - Nose, mouth, eye, cloaca
- Ocular, oral, or nasal discharge



EQUIPMENTS

- Knife
- Poultry Shears
- Scalpel blade and handle
- Scissors
- Tissue Forceps

SAMPLING

- **10% buffered normal formalin** in containers for tissue fixation: Histopathology
- **50% GPBS** in containers: Virology
- Sterile Swabs: Bacteriology
- Whirl packs, culture plates, virology tubes as suggested by the history

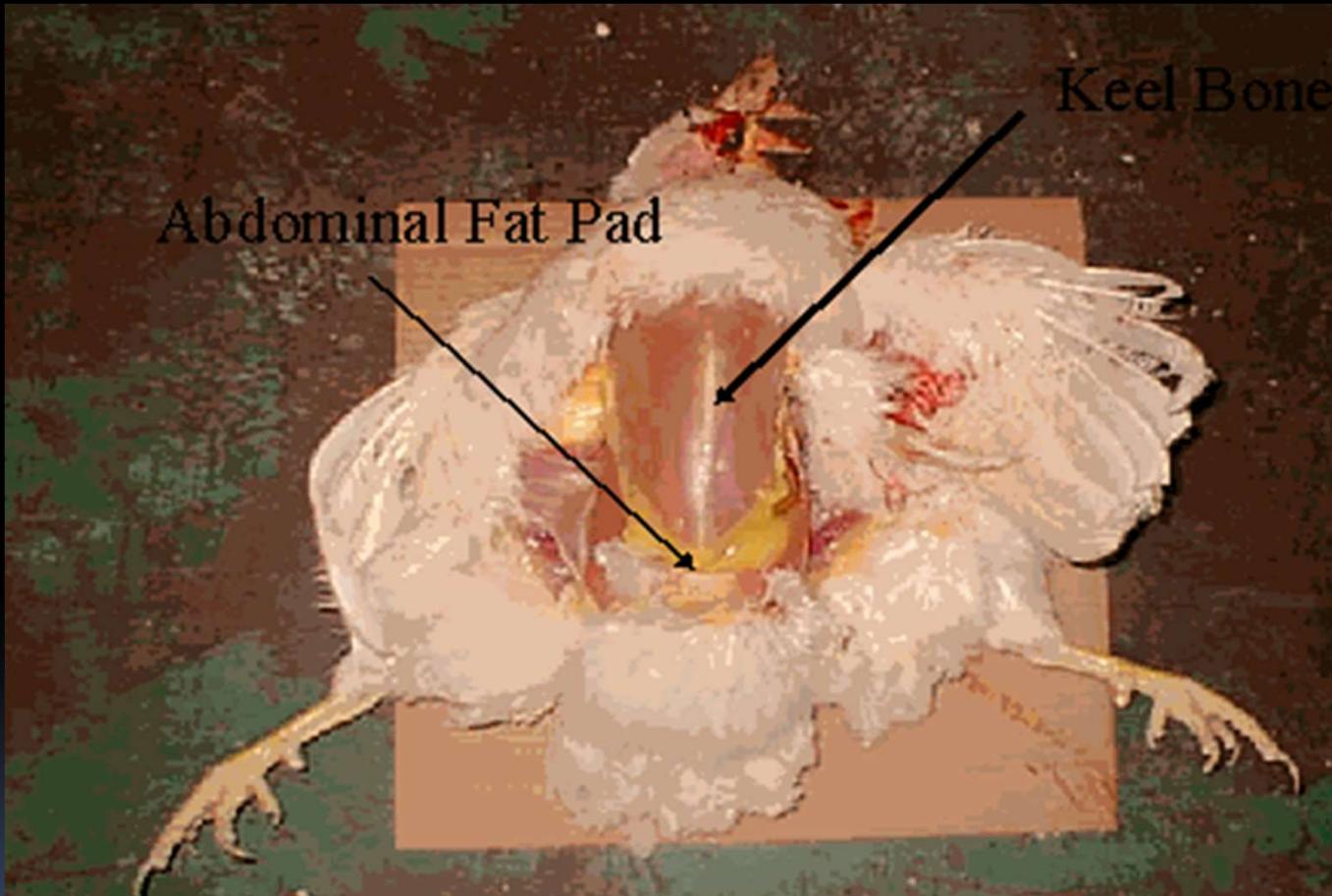
ANIMAL POSITION

- Place on its back with feet facing you
- Legs pushed down and away from the pelvis
- Wet feathers
 - Using water and soap solution
 - Reduce risk of inhaling dust particles
 - View carcass better

BEGINNING THE NECROPSY

- **Incise skin between each thigh and breast**
 - Reflect skin over legs
 - Expose cranial border of thigh muscles
- **Disarticulate both legs at hip joint**
- Incise skin caudal to keel
- Reflect skin cranially
 - Expose breast muscle and ventral surface of neck



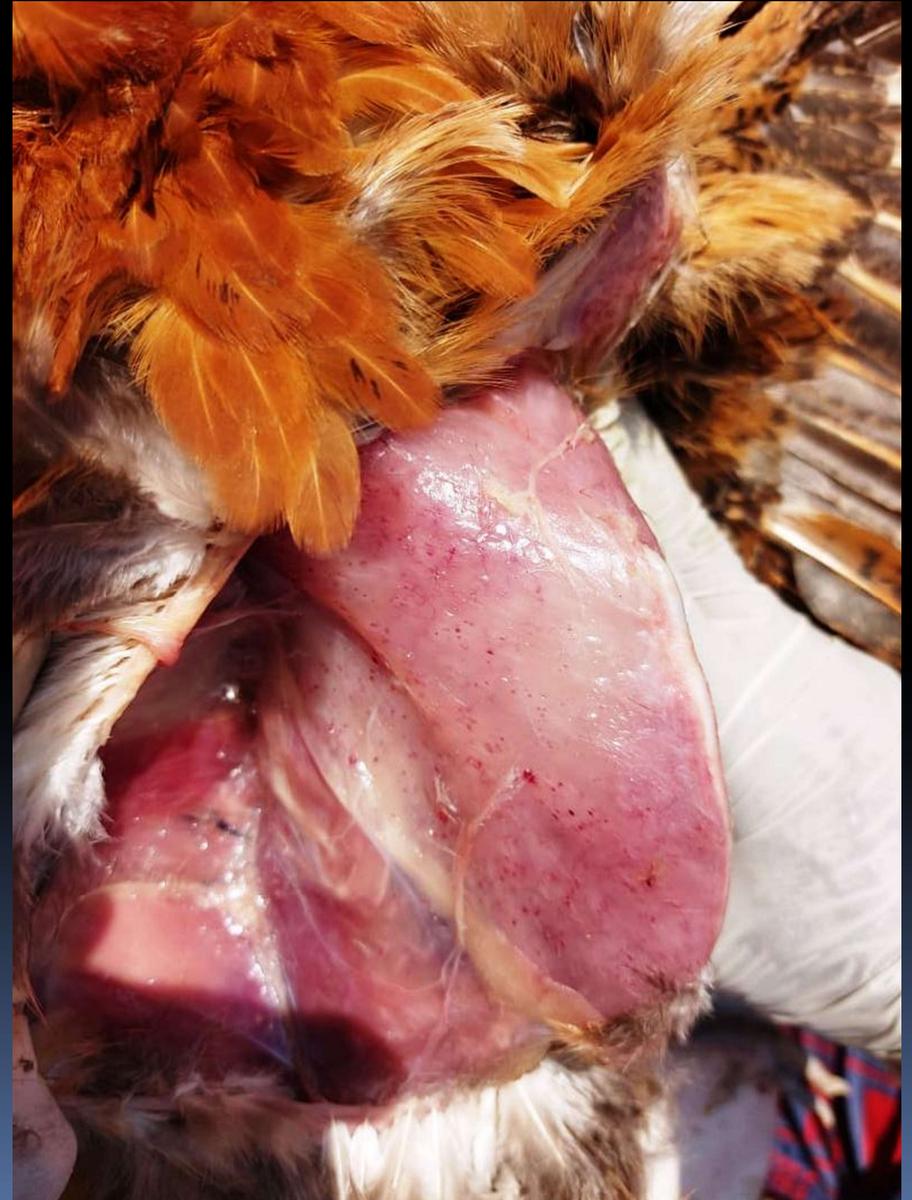


- Examine breast and leg muscles
 - Haemorrhages, bruises



MUSCULAR LESIONS

IBD/GUMBORO DISEASE



HEAT STROKE



PARBOILED APPEARANCE

- Spread legs laterally
 - Examine sciatic nerve on birds over 5 weeks of age
- Cut the femur mid-shaft
 - Examine bone marrow

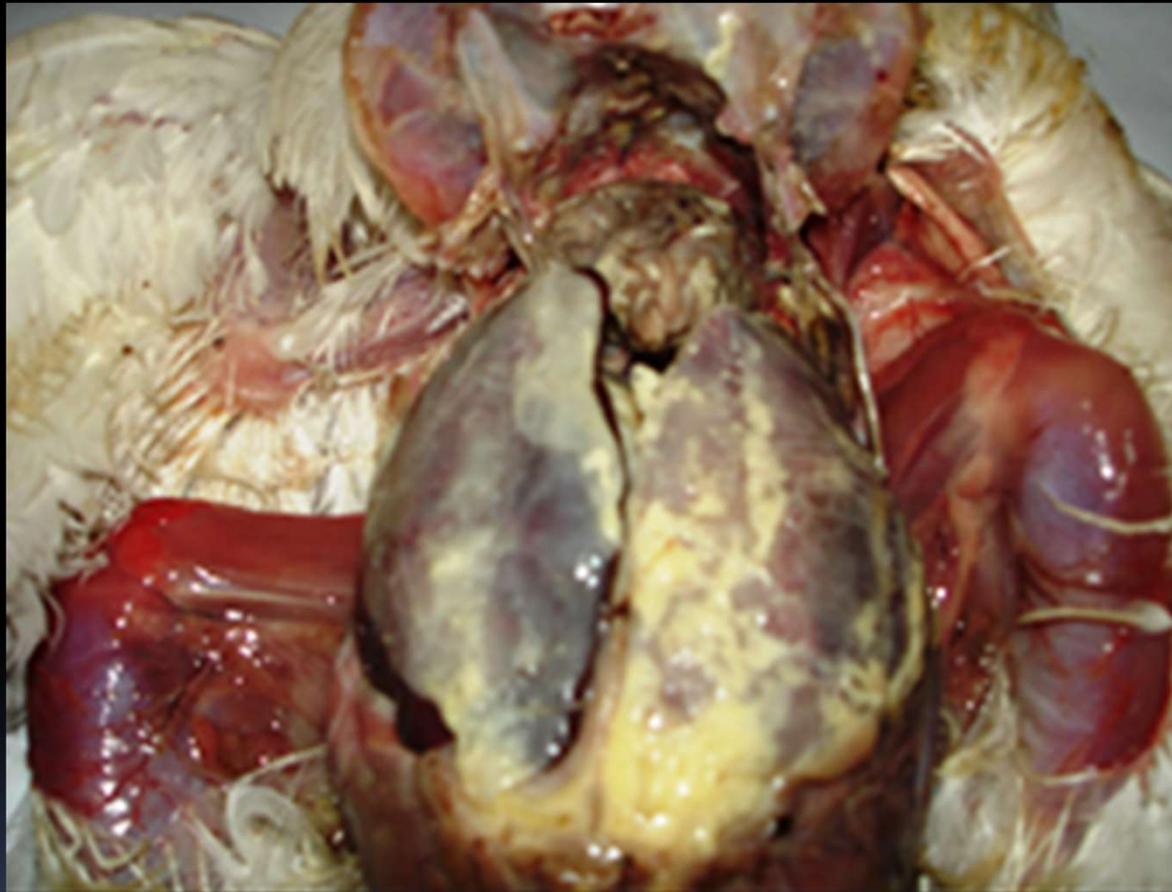


- Incise the abdominal muscles transversely
 - Insert a scissors point into the abdominal cavity
 - Cut through the abdominal muscles and expose the abdominal viscera
- Cut rostrally through the costochondral junction
 - Cut through the shoulder girdle on each side
 - Do not cut into the lungs!



LIVER LESIONS

COLIBACILLOSIS/COLISEPTICAEMIA



Fibrinous Perihepatitis/Pericarditis

VISCERAL GOUT



CHALKY WHITE URATE

FOWL TYPHOID



**ENLARGED AND GREENISH BRONZE
TINT OF LIVER**

PULORUM DISEASE



PINPOINT NODULAR LESIONS

STAPHYLOCOCCAL INFECTION



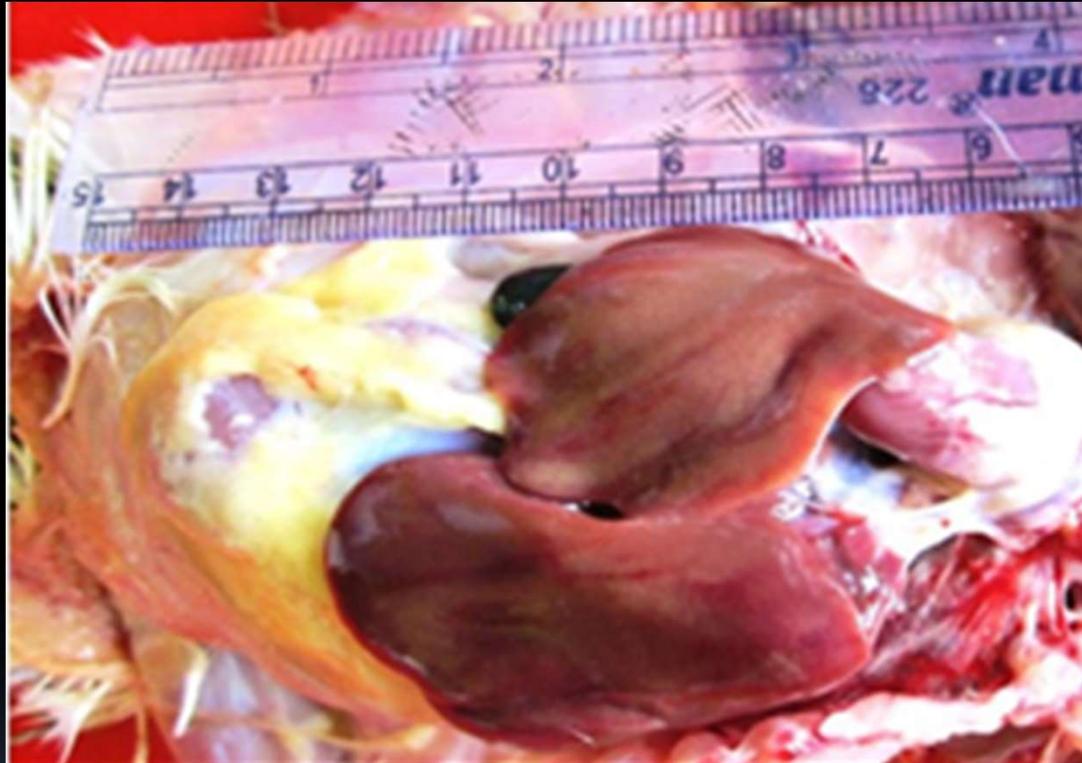
NECROTIC FOCI

AVIAN TUBERCULOSIS



Multifocal granulomatous lesions

AFLATOXICOSIS



Pale yellowish discoloration

AFLATOXICOSIS



Pale appearance

FATTY LIVER SYNDROME



MAREK'S DISEASE



Multiple tumours

LYMPHOID LEUKOSIS



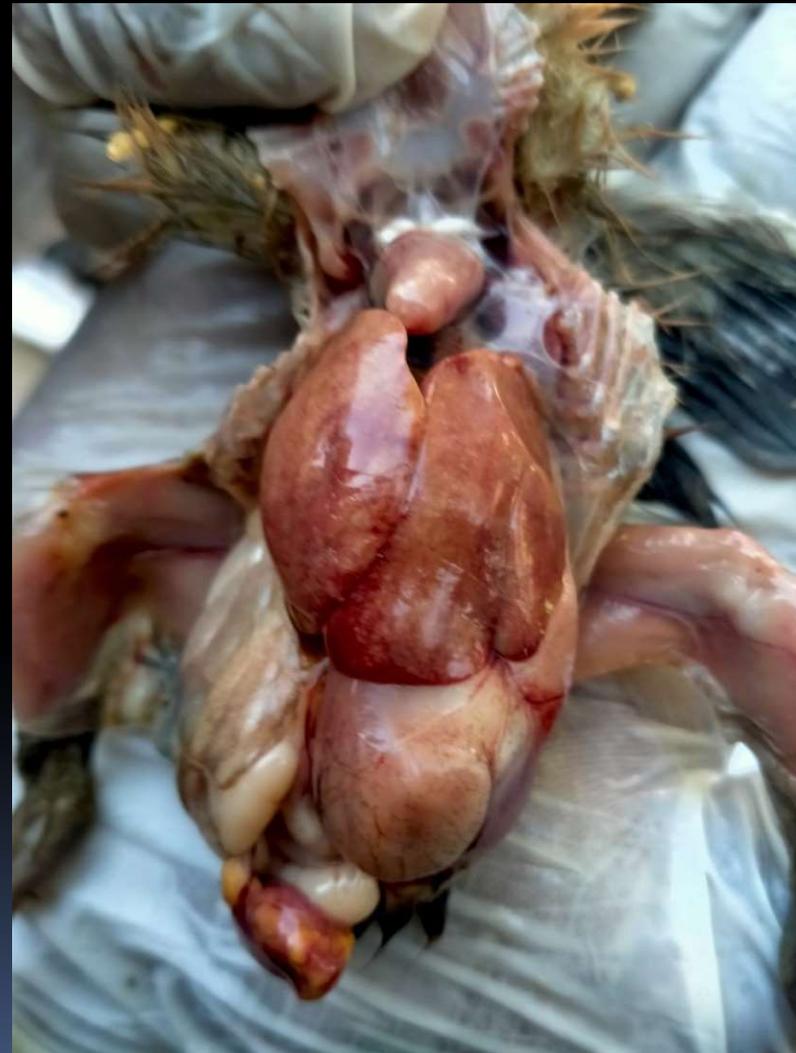
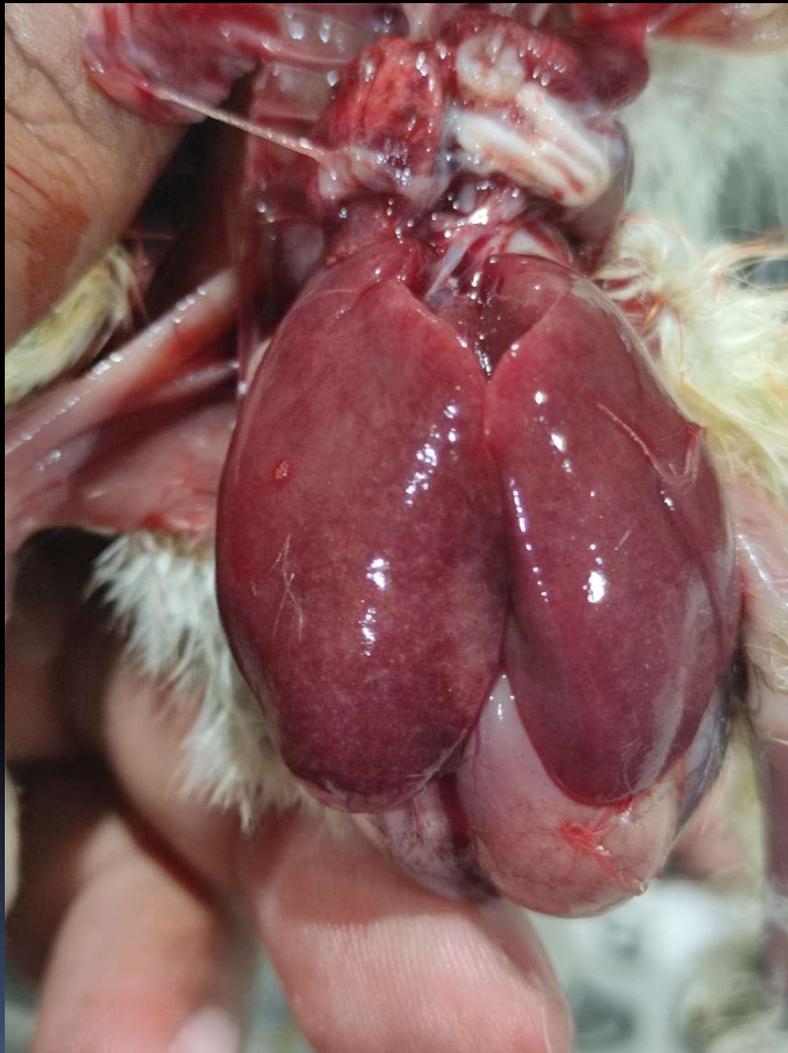
Enlarged liver with tumours

FOWL CHOLERA



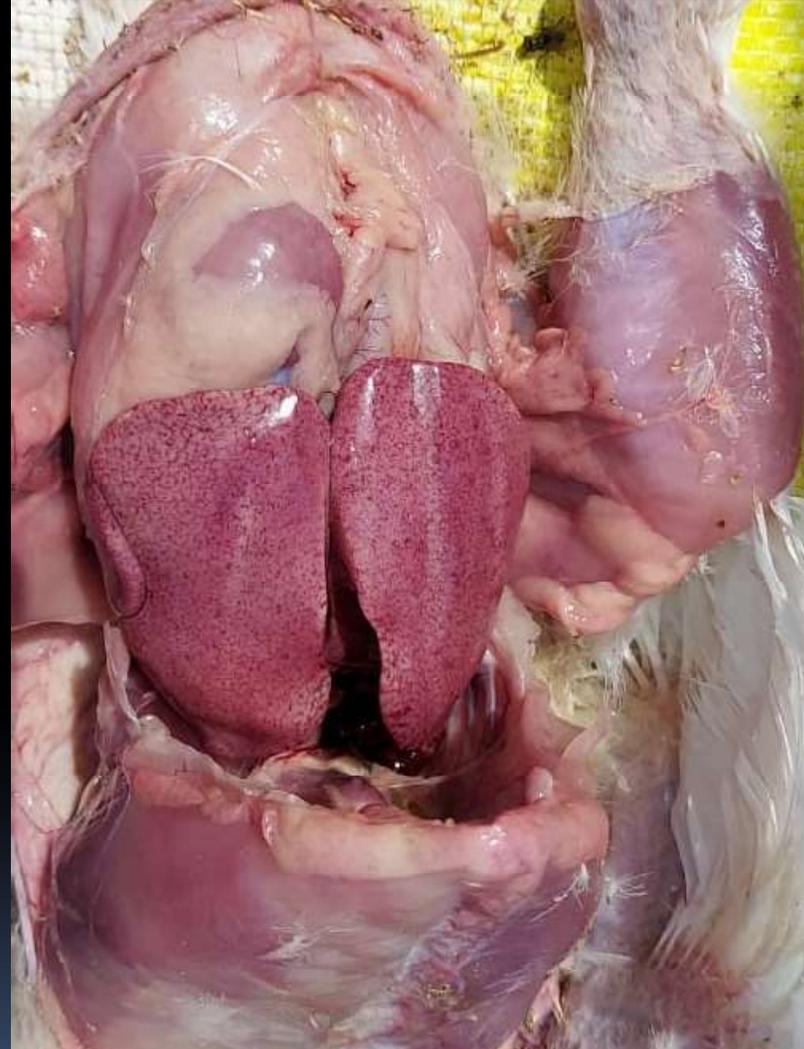
Multiple necrotic foci

INCLUSION BODY HEPATITIS (IBH)



MOTTLED LIVER

CHEMICAL TOXICITY



HAEMORRHAGES

CHEMICAL TOXICITY



HEAT STROKE



HAEMORRHAGES

CARDIAC LESIONS

VISCERAL GOUT



URATE DEPOSITS

HPAI/BIRD FLU



PETECHIAE

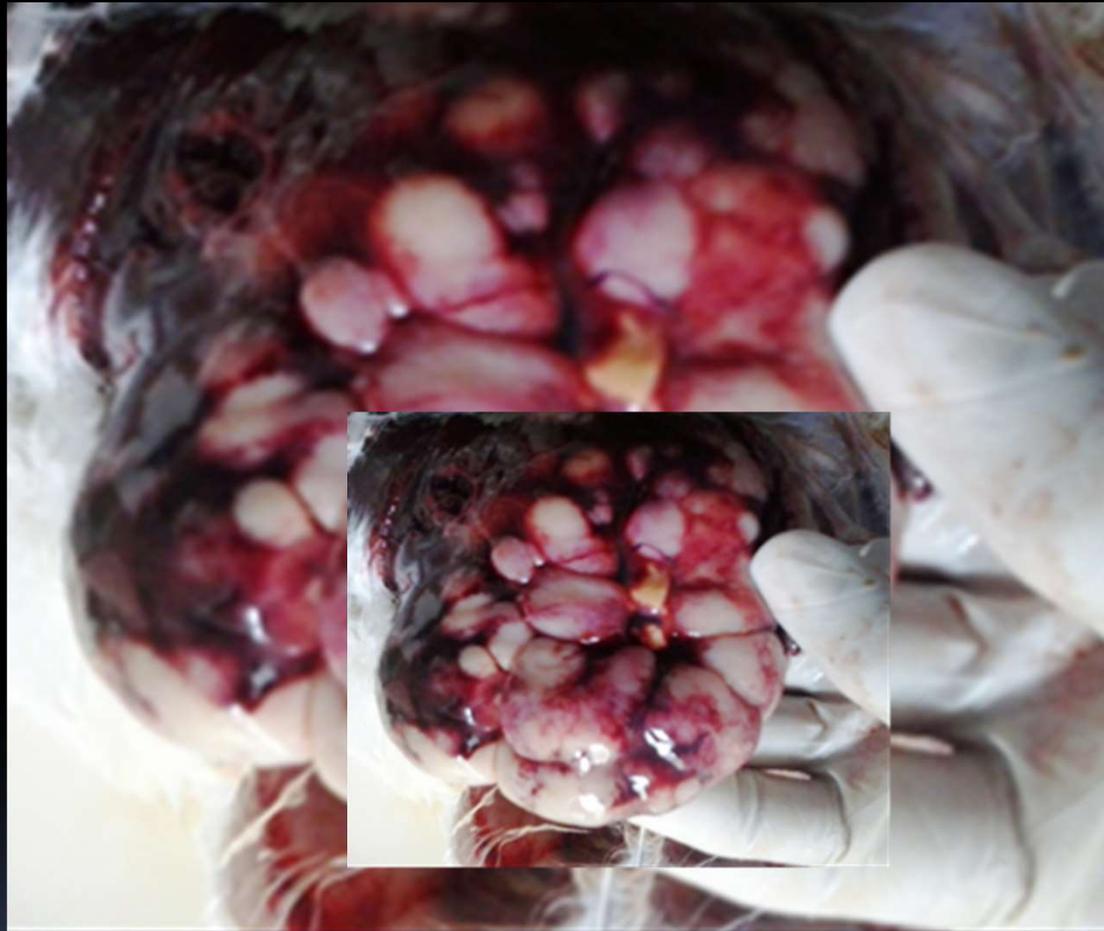
HPAI/BIRD FLU



PETECHIAE

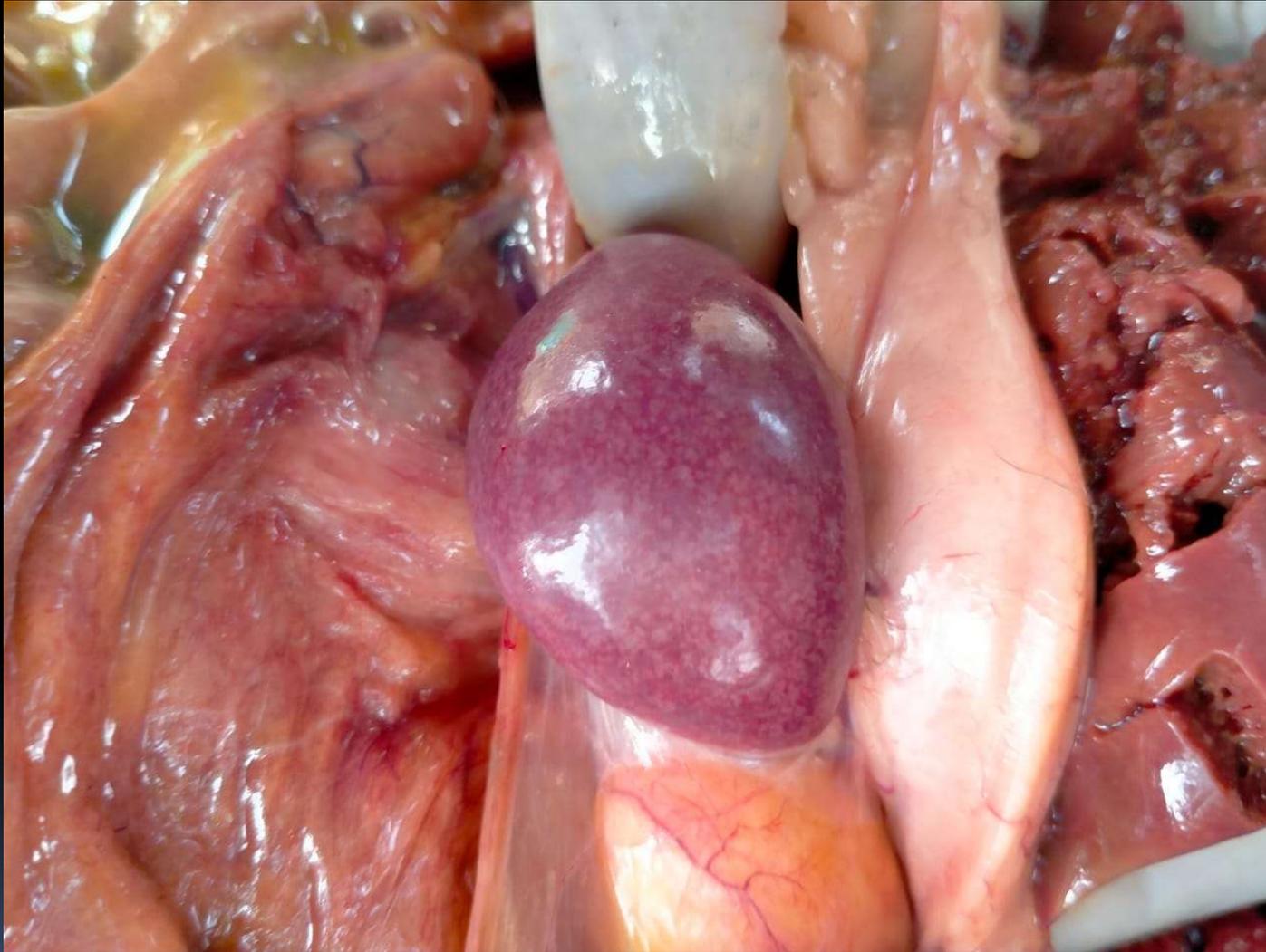
LESIONS IN SPLEEN

MAREK'S DISEASE



MULTIPLE TUMOURS

HPAI/BIRD FLU



MOTTLED APPEARANCE

GASTROINTESTINAL LESIONS

- PROVENTRICULUS

- Incise and examine luminal surface



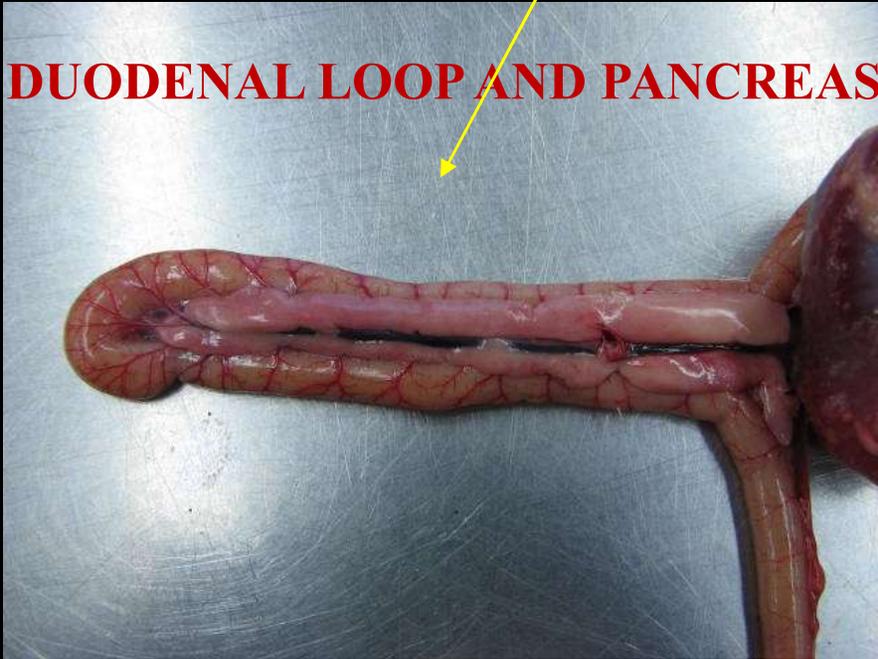
- VENTRICULUS/GIZZARD

- Incise and examine luminal surface
- Note thickness on cut surface
- Peel the thick keratin lining (Koilin)
 - Should peel easily
 - Provides protection while grinding seeds



- Examine serosal surfaces and open entire GI tract!
 - Duodenal loop
 - ✦ Note pancreas
 - Jejunum and Ileum loops
 - ✦ Meckel's diverticulum (lymphoid tissue)
 - Paired caeca
 - ✦ Caecal tonsils (at junction w/ colon)
 - Colon
 - Cloaca
 - ✦ Digestive, urinary and reproductive tracts end
 - Bursa of Fabricius
 - ✦ In sexually immature birds
 - ✦ Dorsal to cloaca

DUODENAL LOOP AND PANCREAS



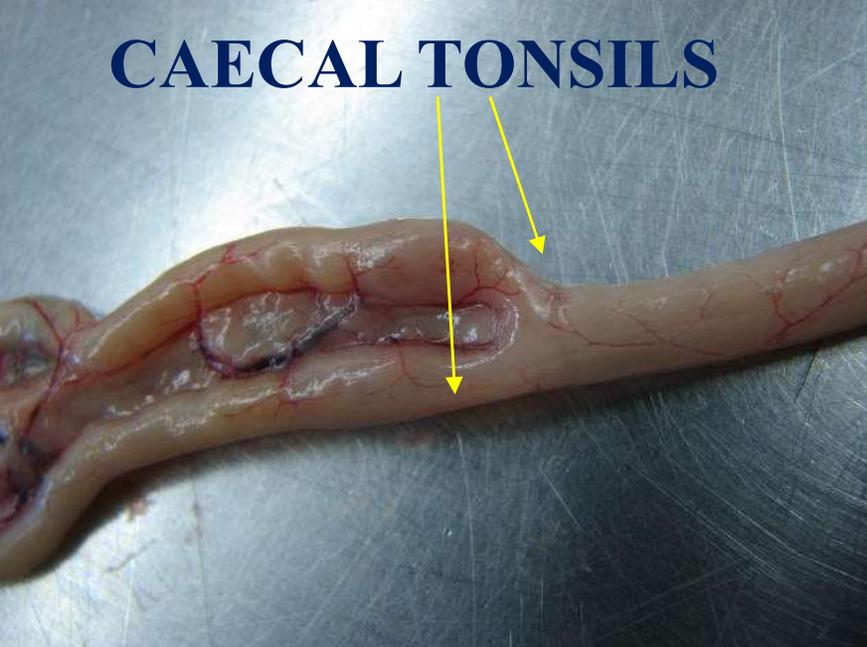
ILEUM AND PAIRED CECA



MECKEL'S DIVERTICULUM



CAECAI TONSILS



HPAI/BIRD FLU



PETECHIAE

NEWCASTLE DISEASE (RANIKHET DISEASE)



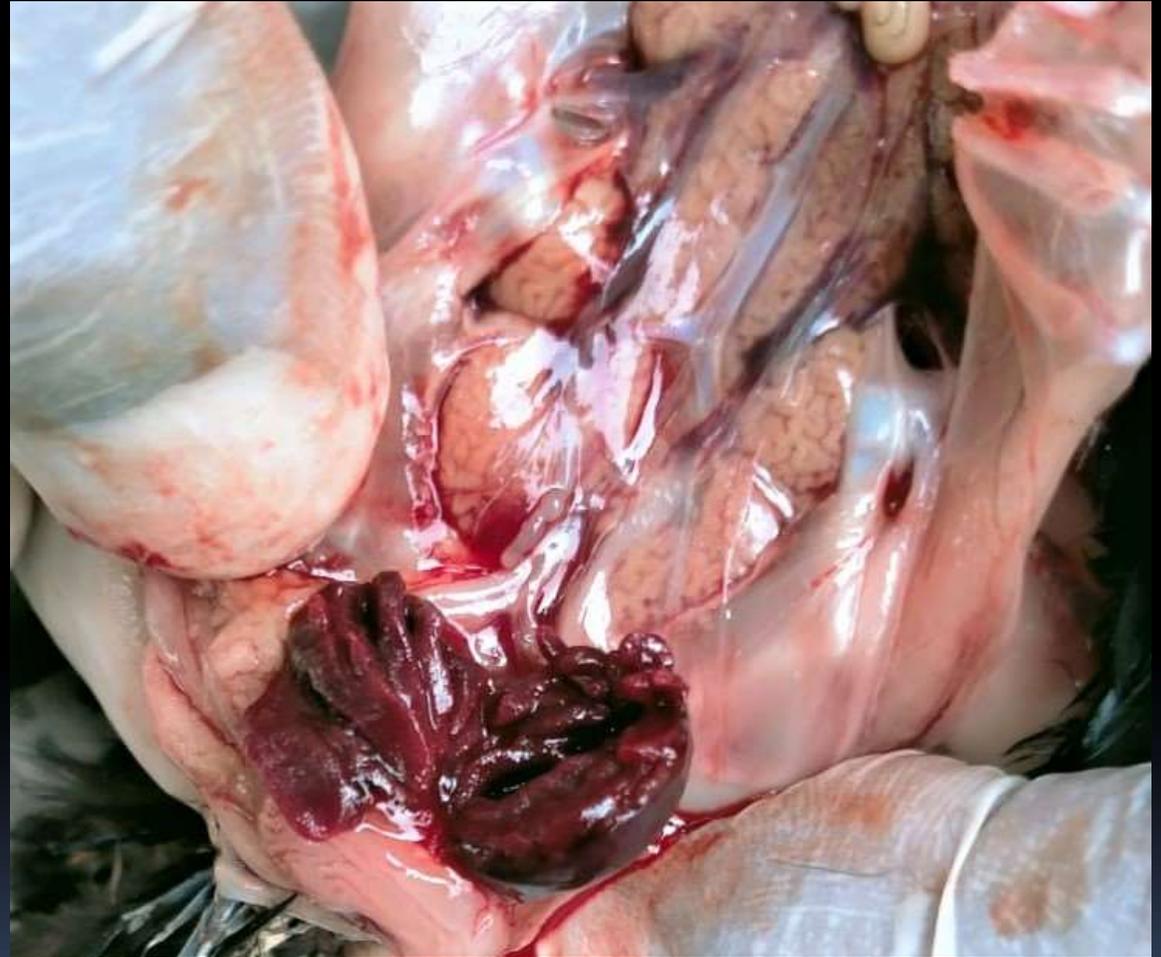
PETECHIAE IN TIP OF PROVENTRICULAR GLANDS

IBD/GUMBORO DISEASE



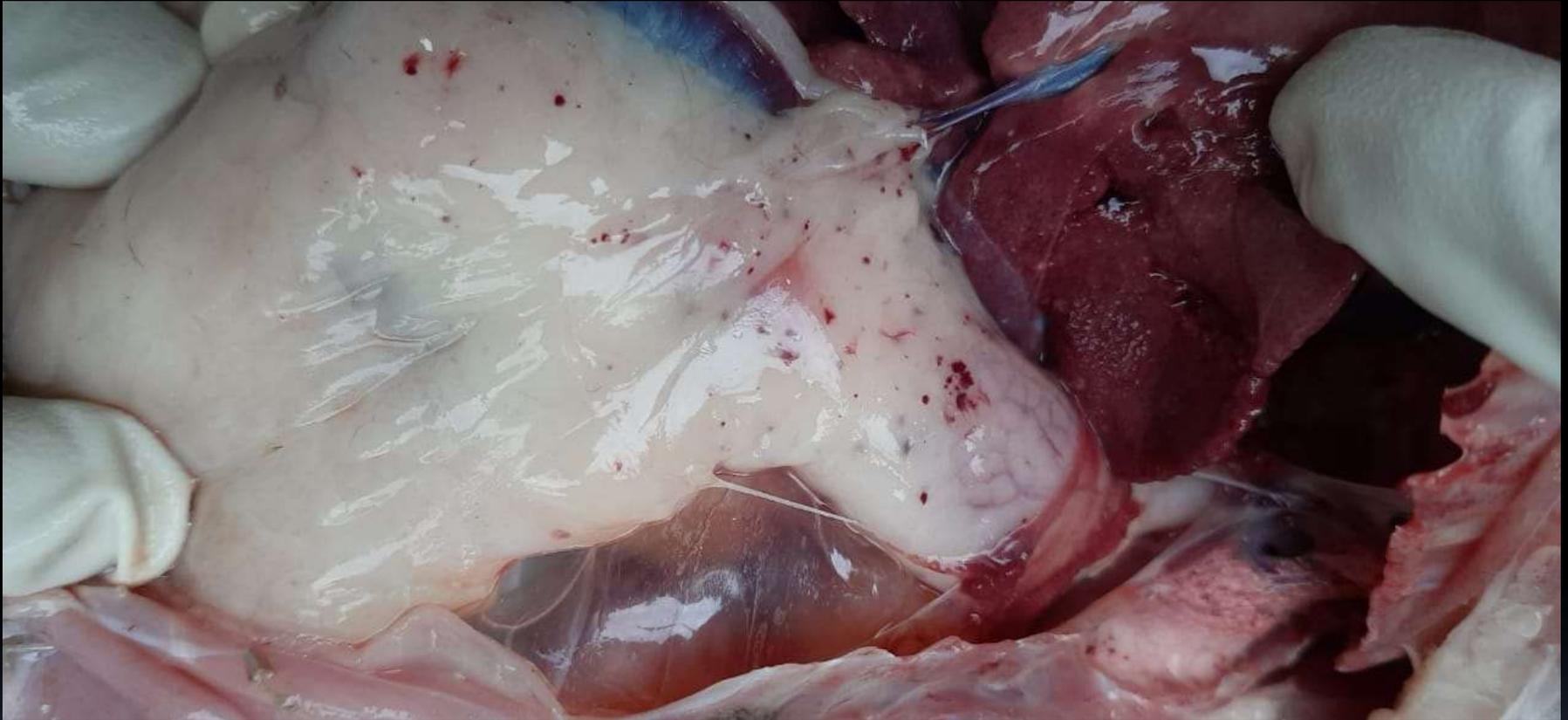
**HAEMORRHAGES IN BETWEEN
PROVENTRICULOUS AND VENTRICULOUS**

IBD/GUMBORO DISEASE



HAEMORRHAGE IN BURSA OF FABRICIOUS

FOWL CHOLERA



PETECHIAE IN ABDOMINAL FAT

NEWCASTLE DISEASE (RANIKHET DISEASE)



**Haemorrhage in
caecal tonsils**



Duodenal ulcer

CAECAI COCCIDIOSIS



HAEMORRHAGIC TYPHLITIS

INTESTINAL COCCIDIOSIS



HAEMORRHAGES

Ascaridia galli



HÆMORRHAGIC ENTERITIS



DUODENAL HAEMORRHAGE

HPAI/BIRD FLU



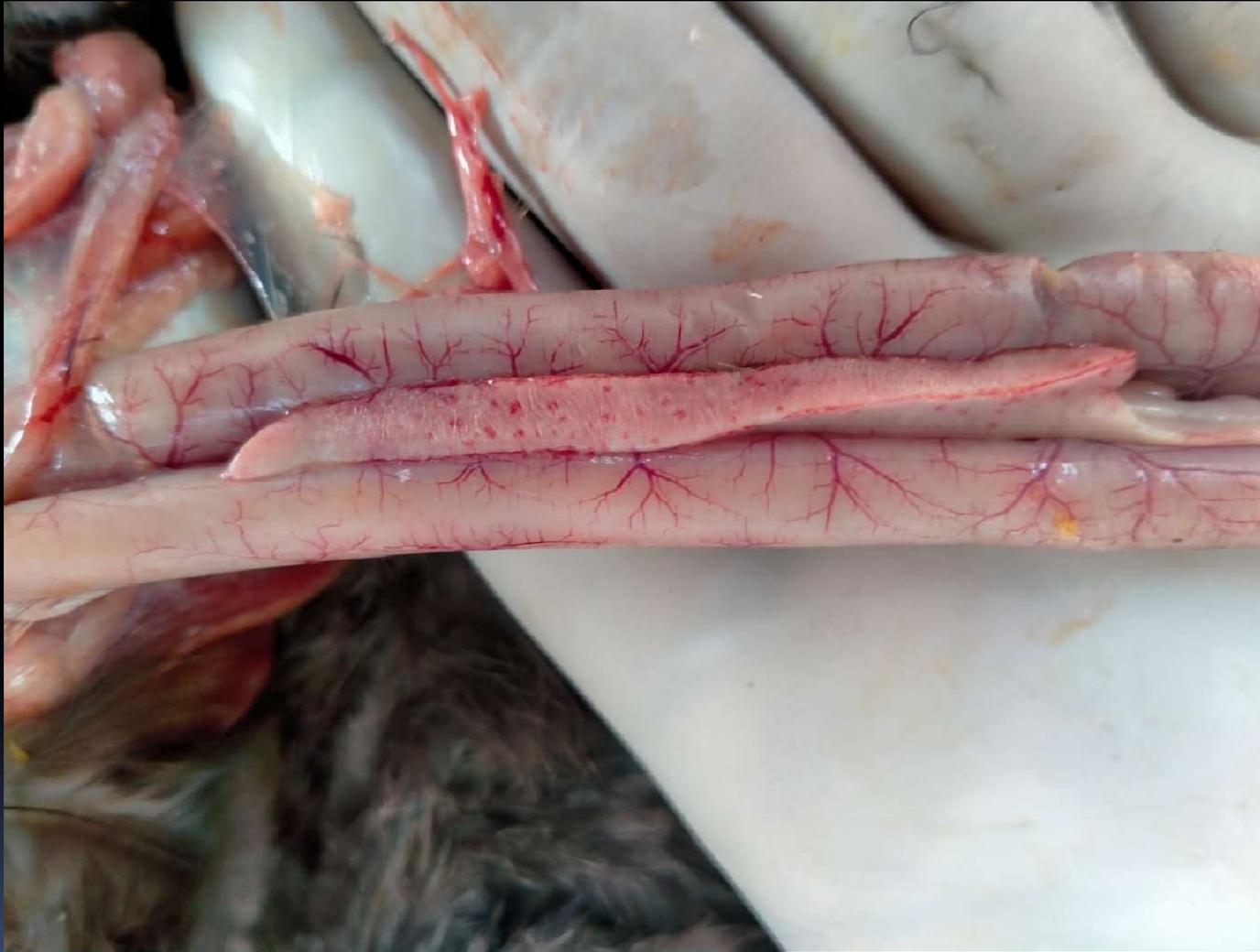
Petechiae in mesentery

HPAI/BIRD FLU



SWOLLEN PANCREAS

HPAI/BIRD FLU

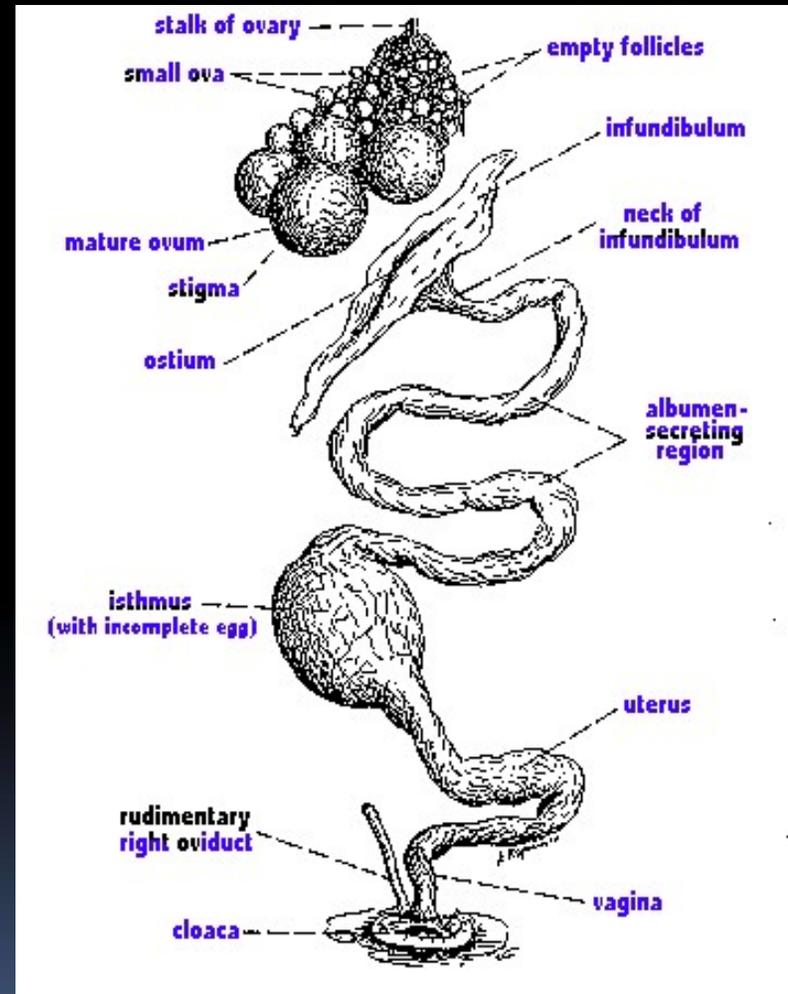


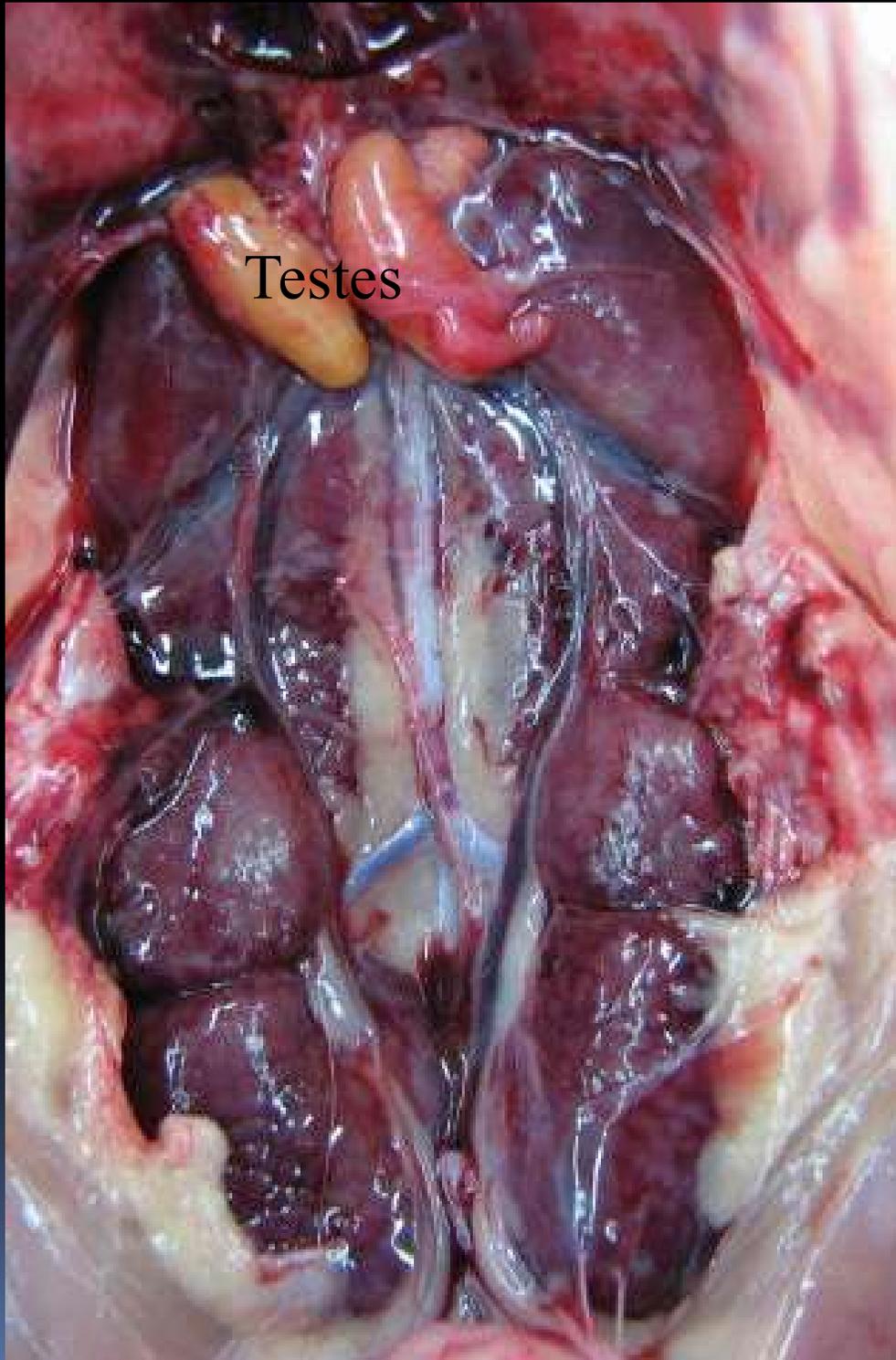
PETECHIAE IN PANCREAS

REPRODUCTIVE ORGANS

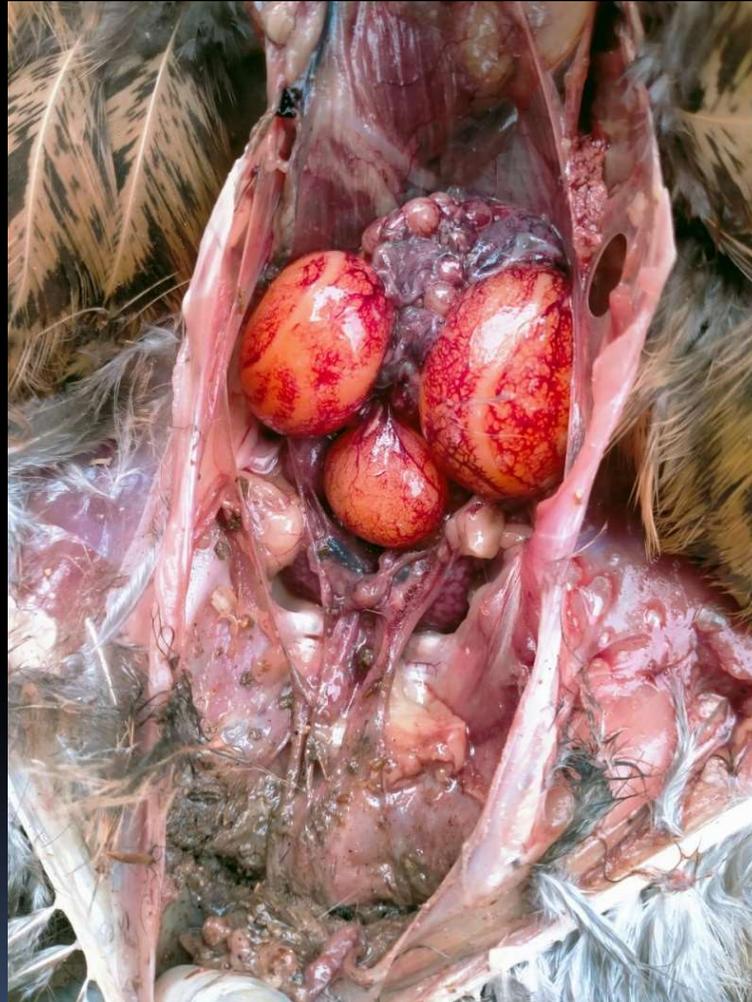
- Examine Testes or Ovary
 - Located at cranial pole of kidneys
 - Left ovary only for female
 - Paired testes in males

- Locate and examine Bursa of Fabricius
 - In sexually immature birds
 - Dorsal to cloaca



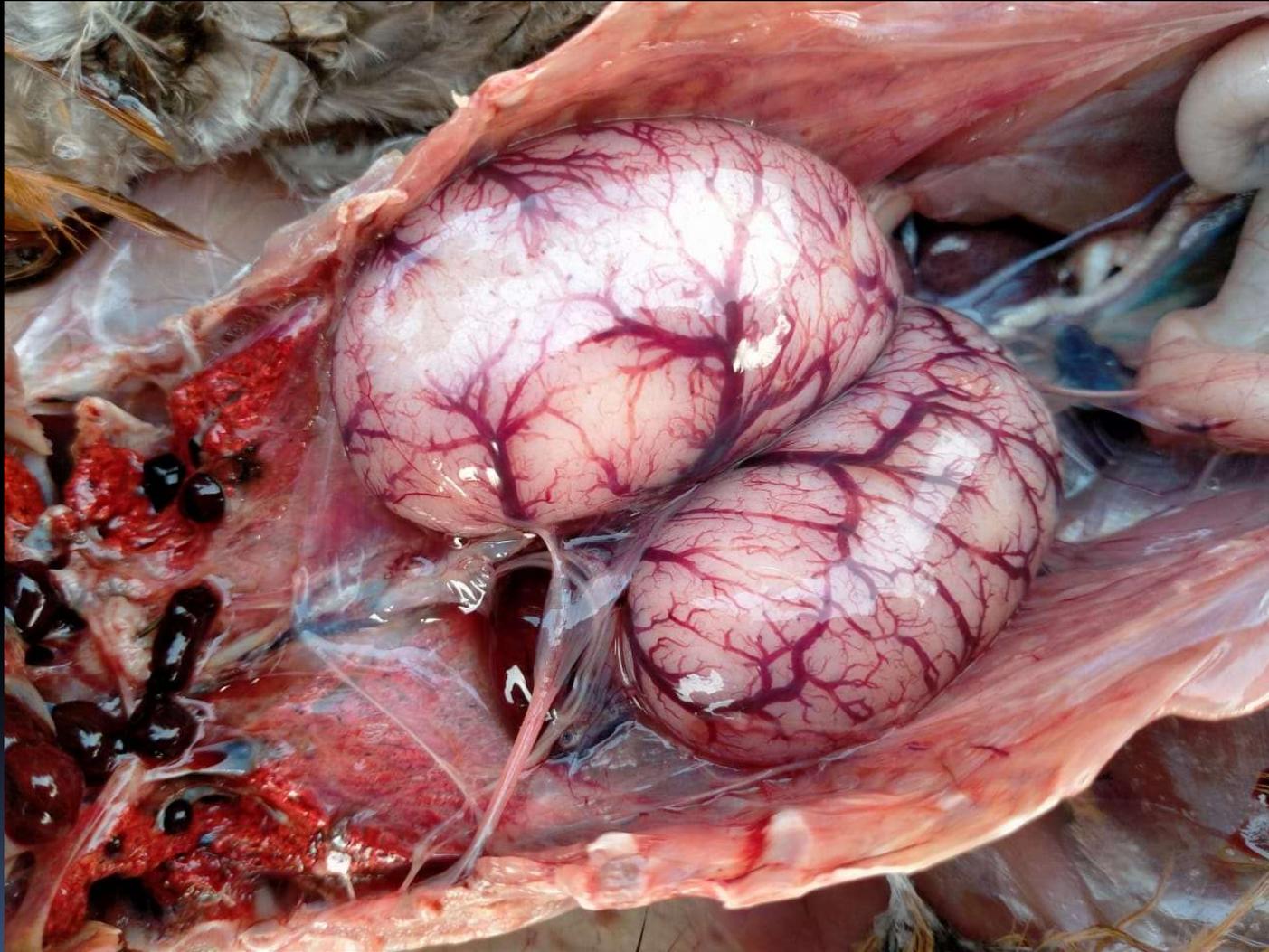


FOWL CHOLERA



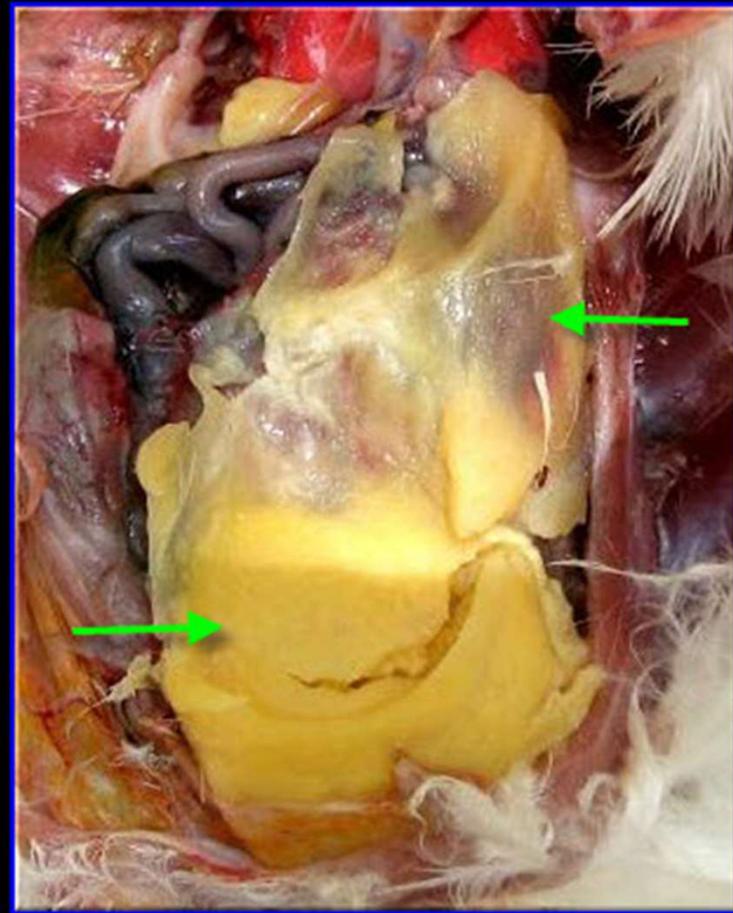
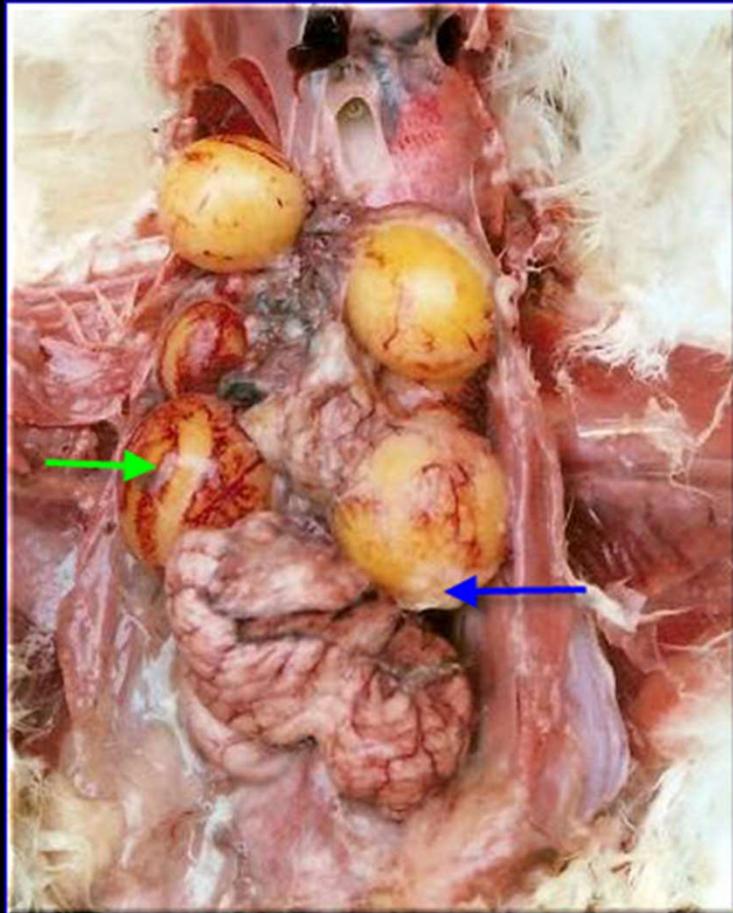
HAEMORRHAGIC OOPHORITIS

FOWL CHOLERA



CONGESTED TESTICLES

EGG PERITONITIS



AVIAN MYCOPLASMOSIS (CRD)



Serofibrinous exudate

COLIGRANULOMA

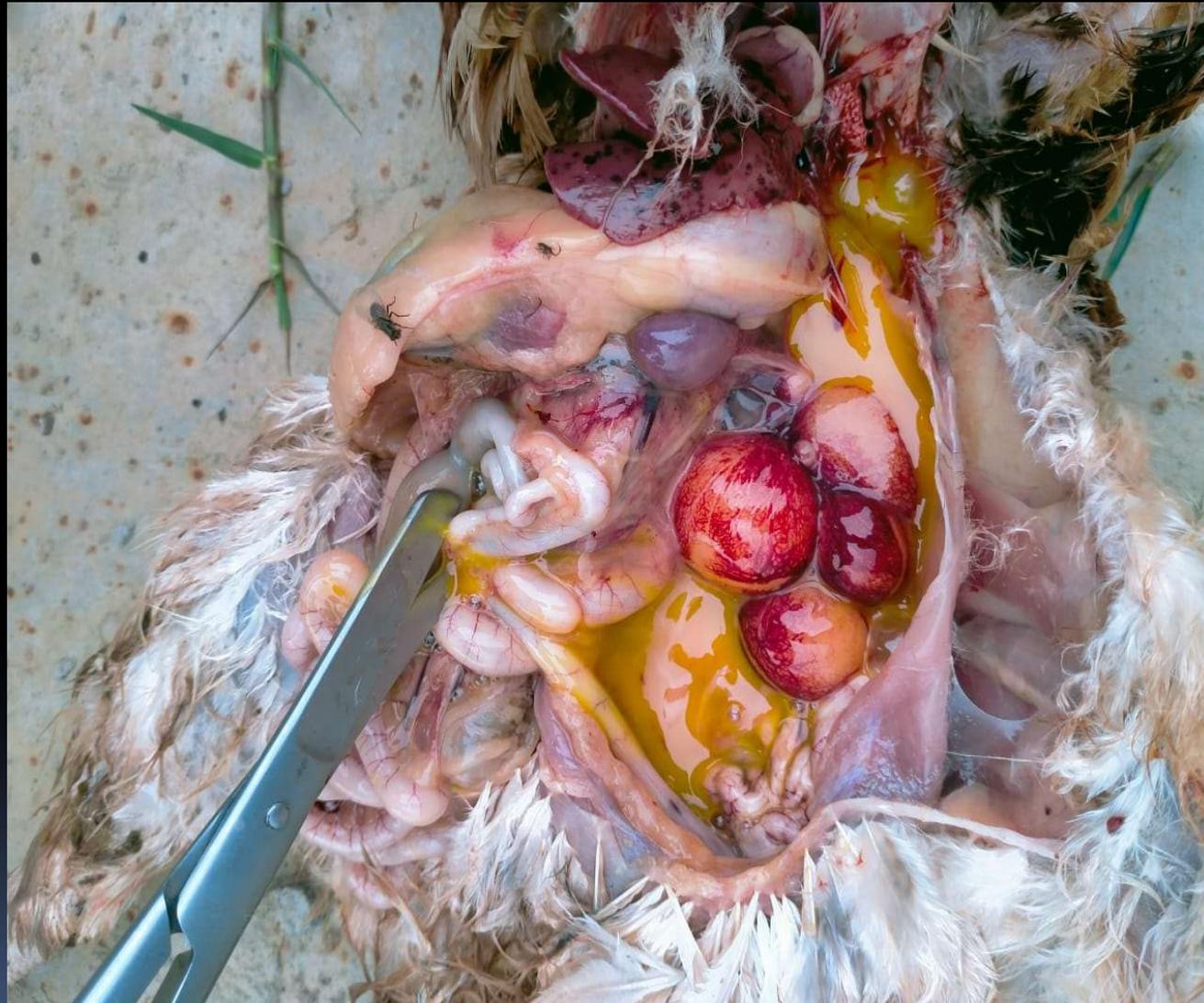


GRANULOMMA

COLIGRANULOMA



HEAT STROKE

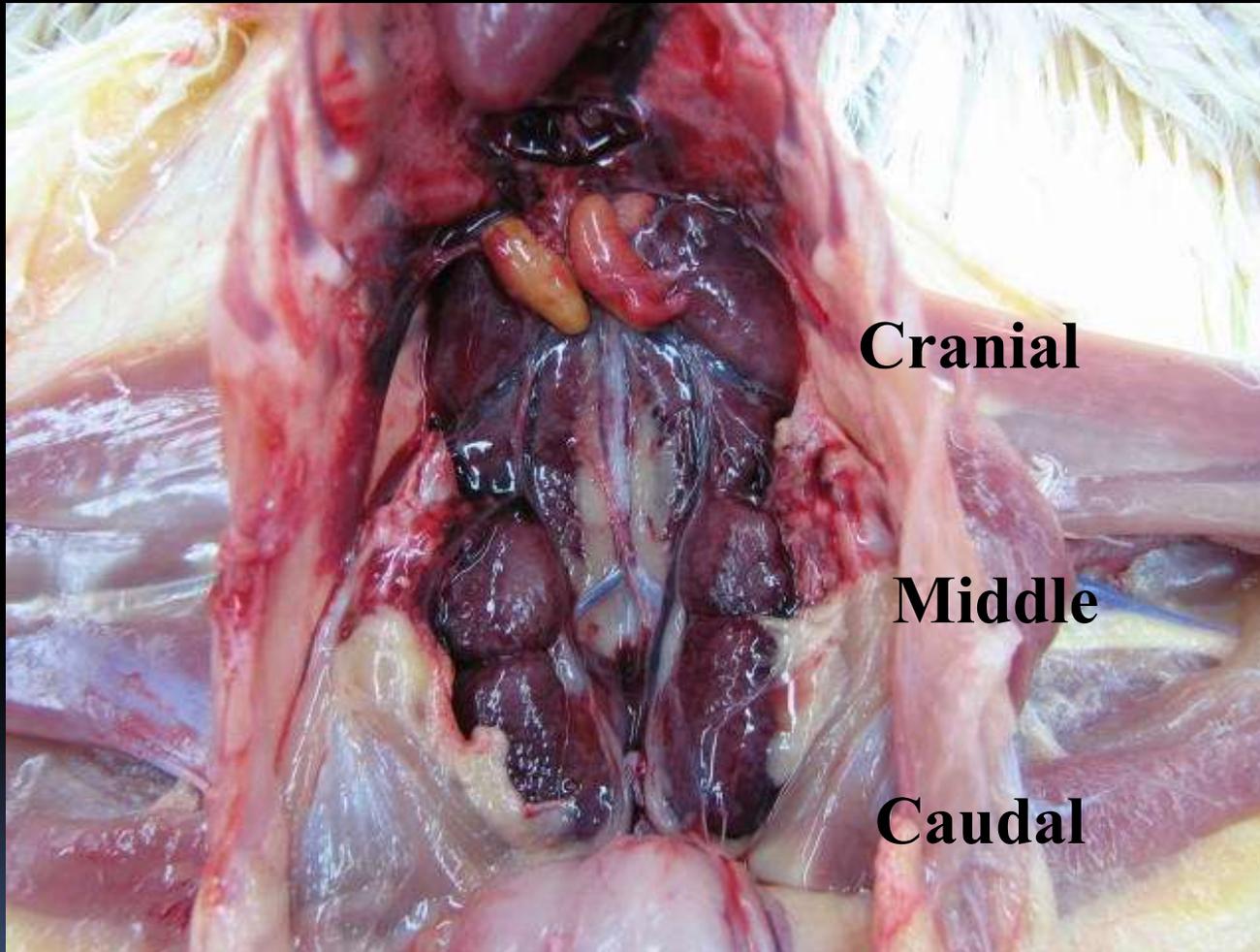


GREASY VISCERAL ORGANS

PROLAPSE



KIDNEYS

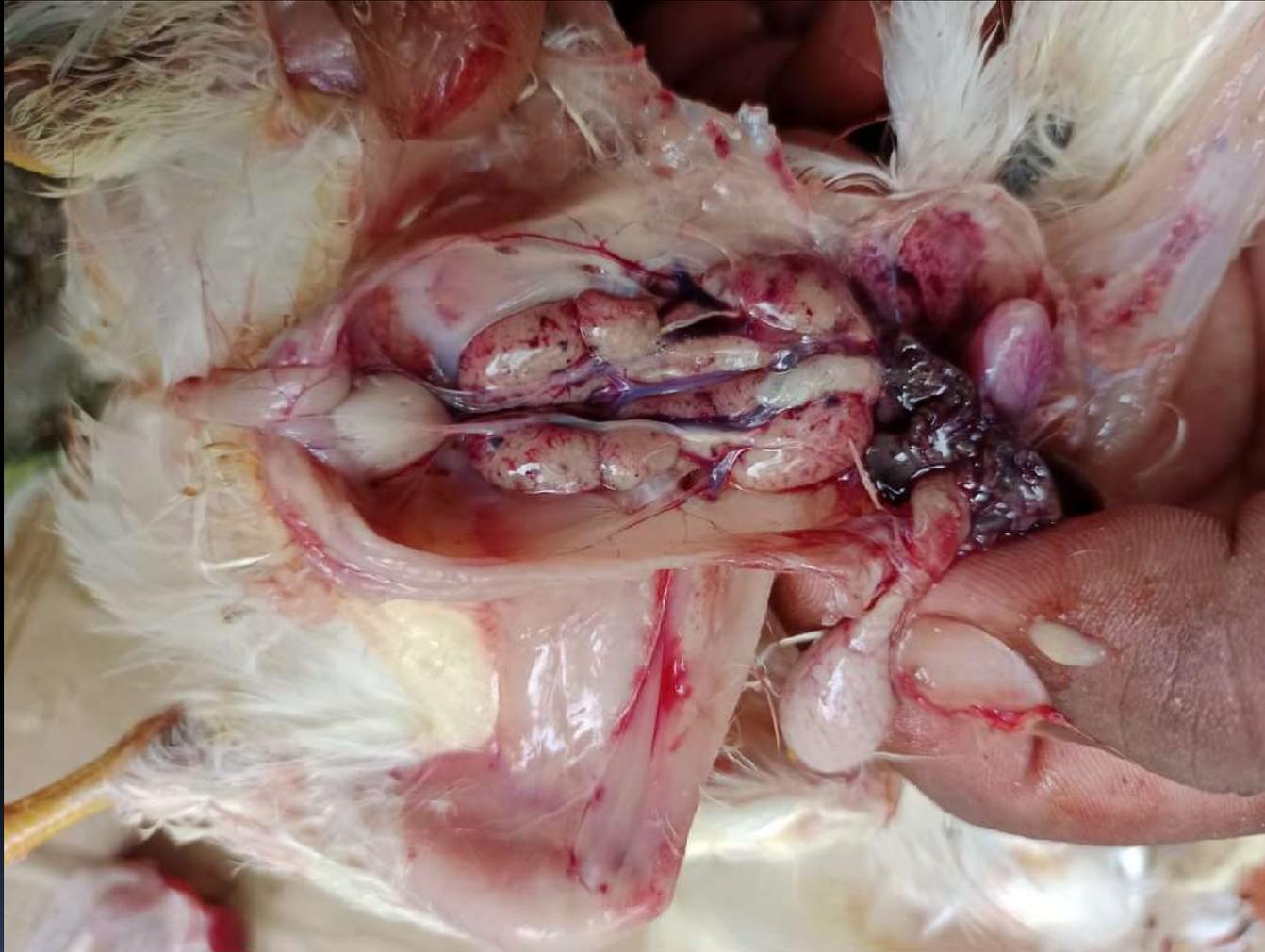


VISCERAL GOUT



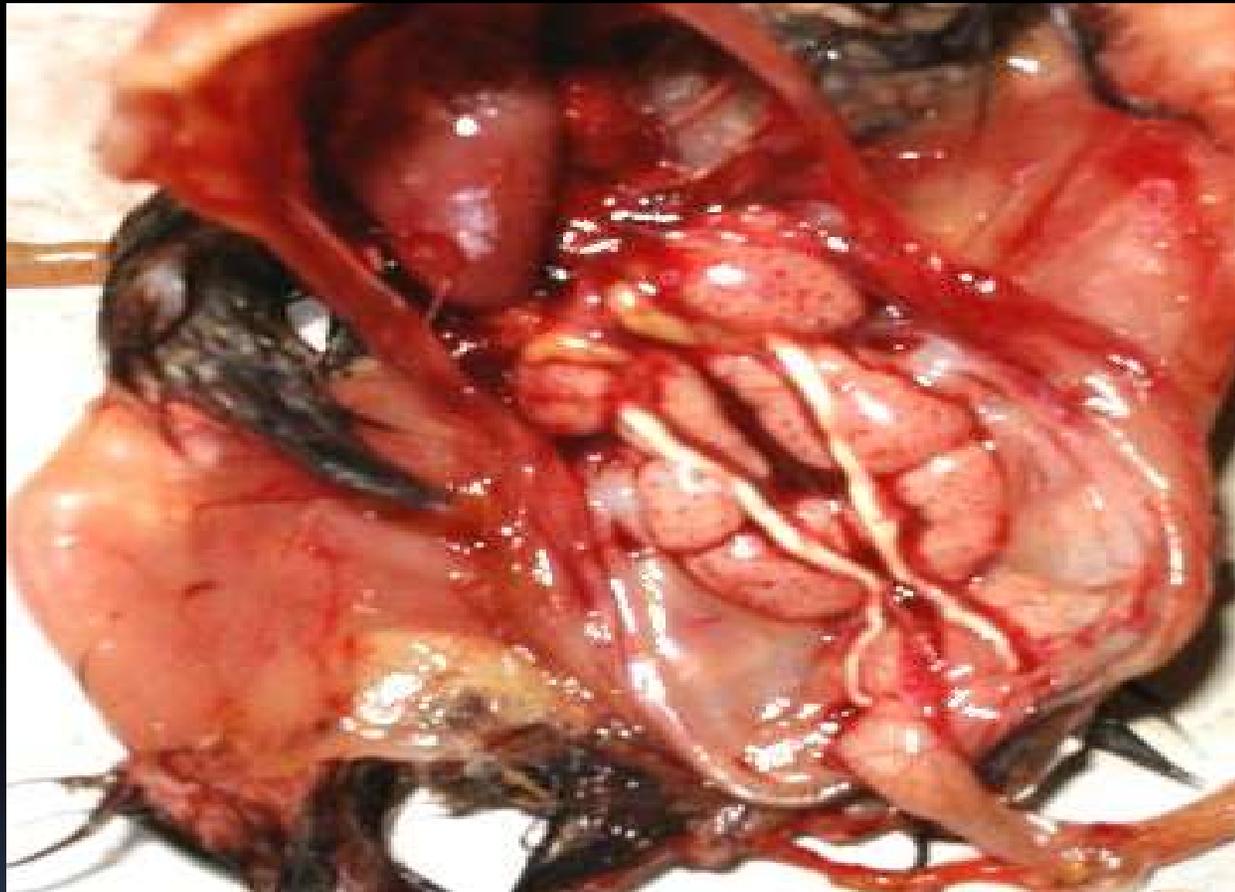
CHALKY WHITE URATE DEPOSITE

CHEMICAL TOXICITY



Haemorrhages

VISCERAL GOUT



PALE AND SWOLLEN KIDNEYS WITH ENGORGED URETER BY URATE DEPOSITS

VISCERAL GOUT



URATE DEPOSITS

IBH

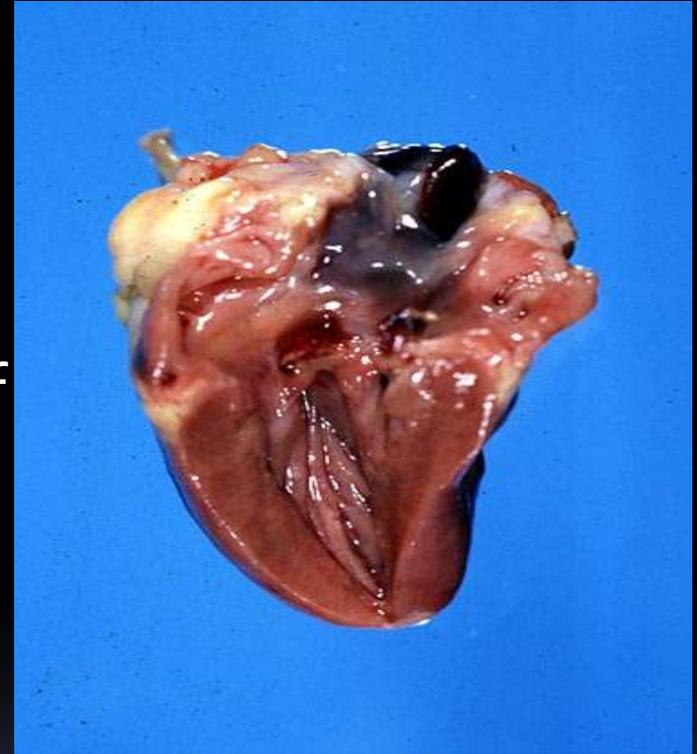


Pale and swollen kidneys with petechiae

HEART

Remove and examine heart

- Examine the pericardial sac
- Place intact in formalin if very small
- Make incision from the base to the apex of left heart
 - Visualize left atrioventricular valve
 - Visualize aortic valve
- Make incision along boundary of right ventricle and reflect wall
 - Visualize right atrioventricular valve
 - Visualize pulmonary artery valve

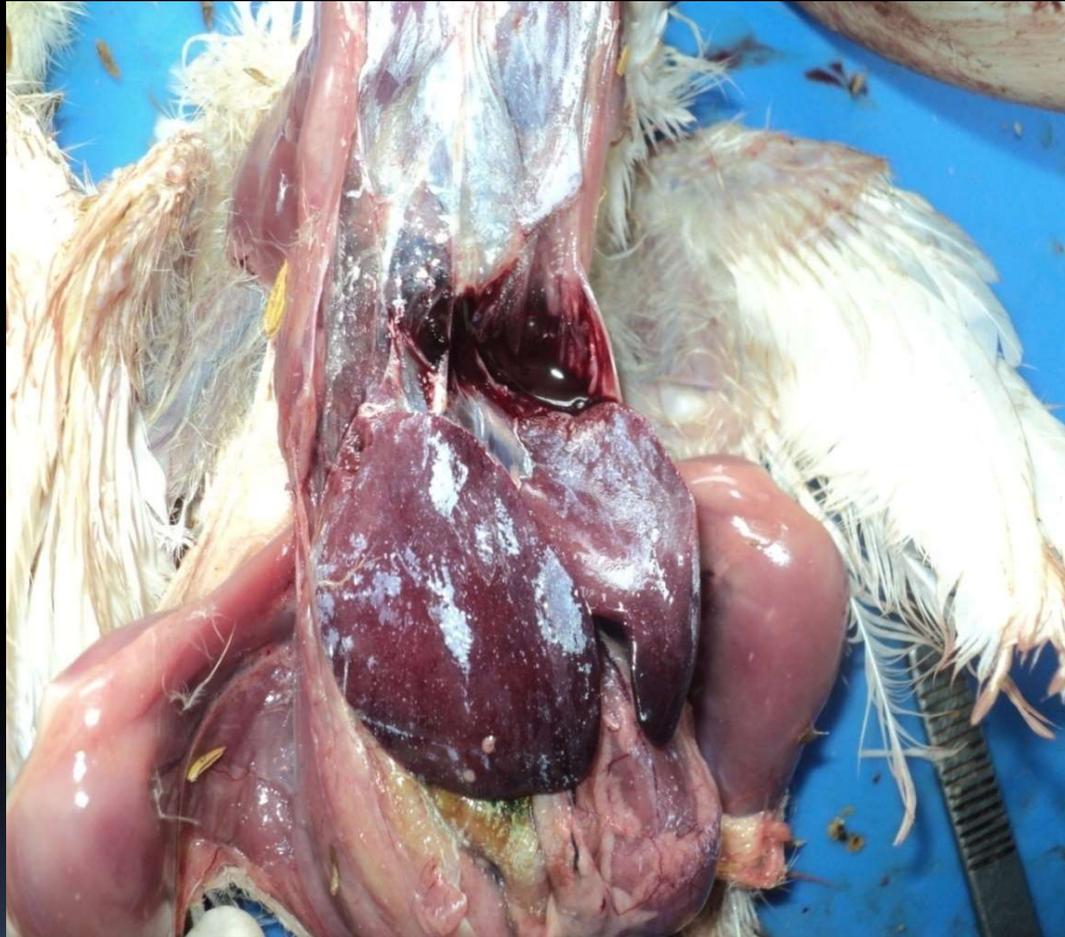


AVIAN INFLUENZA/BIRD FLU



PETECHIAE

VISCERAL GOUT



URATE DEPOSITS

TRACHEAL LESIONS

TRACHEA

- Insert scissors at one corner of mouth and cut down esophagus to crop
 - Examine lining and contents of esophagus and crop
- Remove trachea
 - Cut lengthwise and examine lumen and lining
- Examine the thyroid/parathyroid
 - Found at thoracic inlet lateral to the syrinx
- Examine brachial plexus for enlargement
 - Wide nerves at shoulder



AVIAN MYCOPLASMOSIS (CRD)



Cheesy exudate

AVIAN MYCOPLASMOSIS (CRD)



Congestion

AVIAN MYCOPLASMOSIS (CRD)



**Cheesy coagulated exudates in trachea
as complicated by ILT virus**

RANIKHET DISEASE



TRACHEITIS WITH MUCOUS

AVIAN INFLUENZA



Petechiae

INFECTIOUS BRONCHITIS



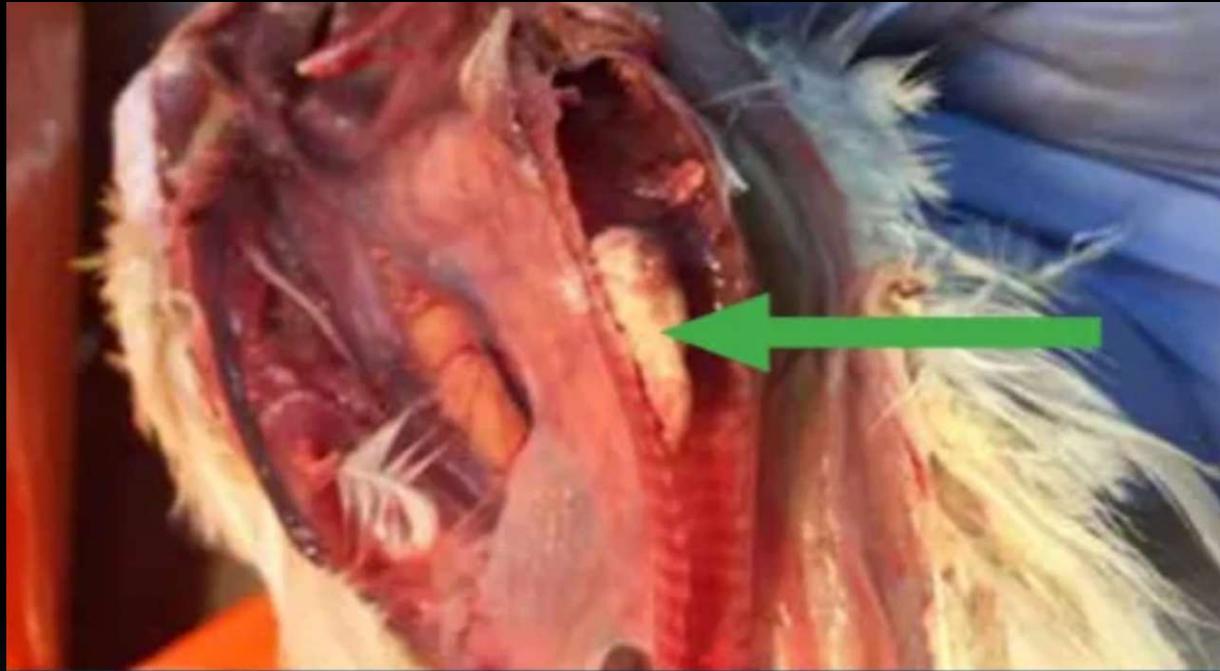
**MUCOID PLUG OF PUS AT THE POINT
OF BIFURCATION OF TRACHEA**

INFECTIOUS LARYNGOTRACHEITIS



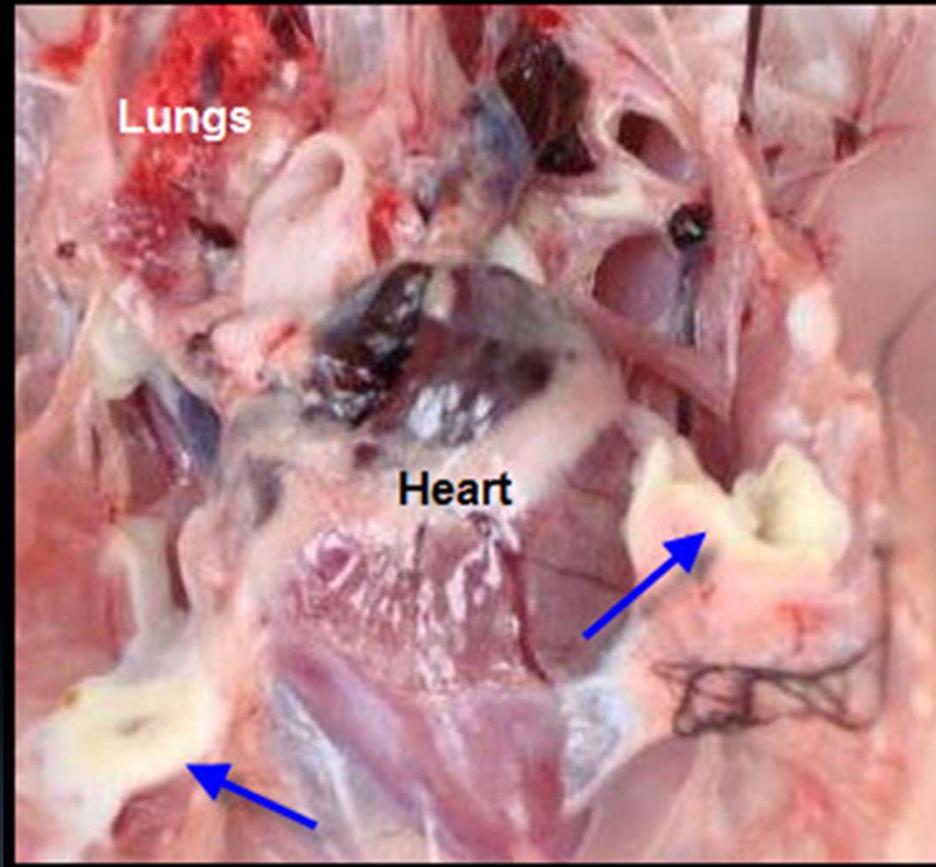
Haemorrhage

INFECTIOUS LARYNGOTRACHEITIS



FIBRINOHAEMORRHAGIC TRACHEATITIS

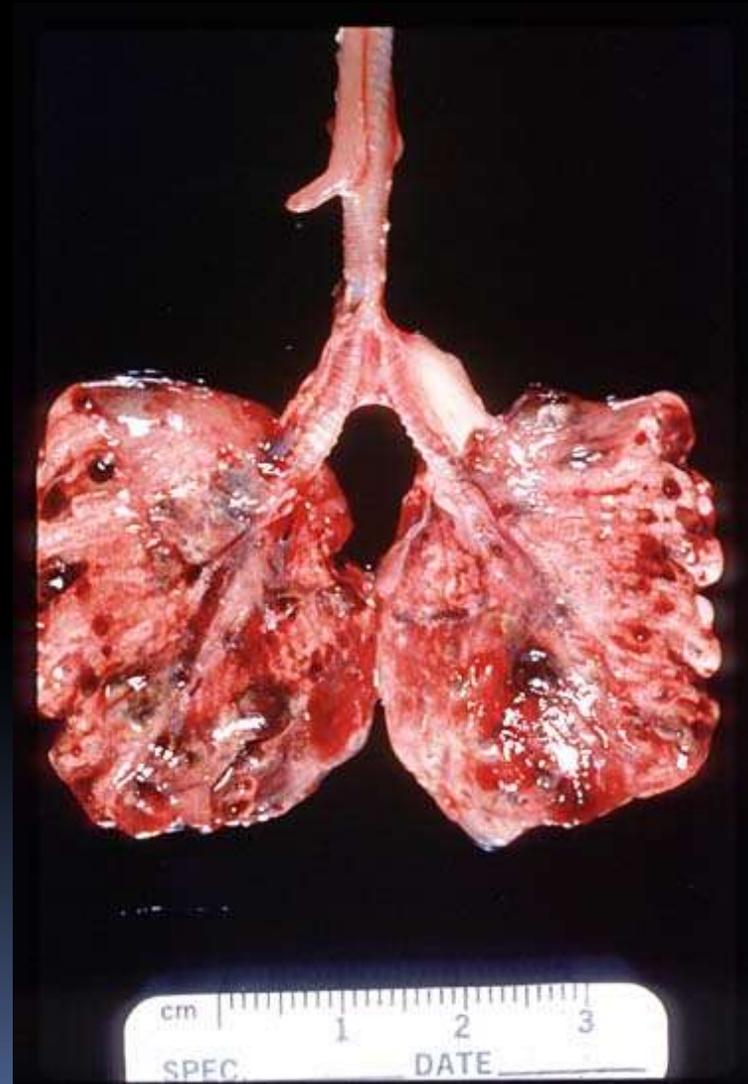
ASPERGILLOSIS



FUNGAL NODULES IN AIR SAC

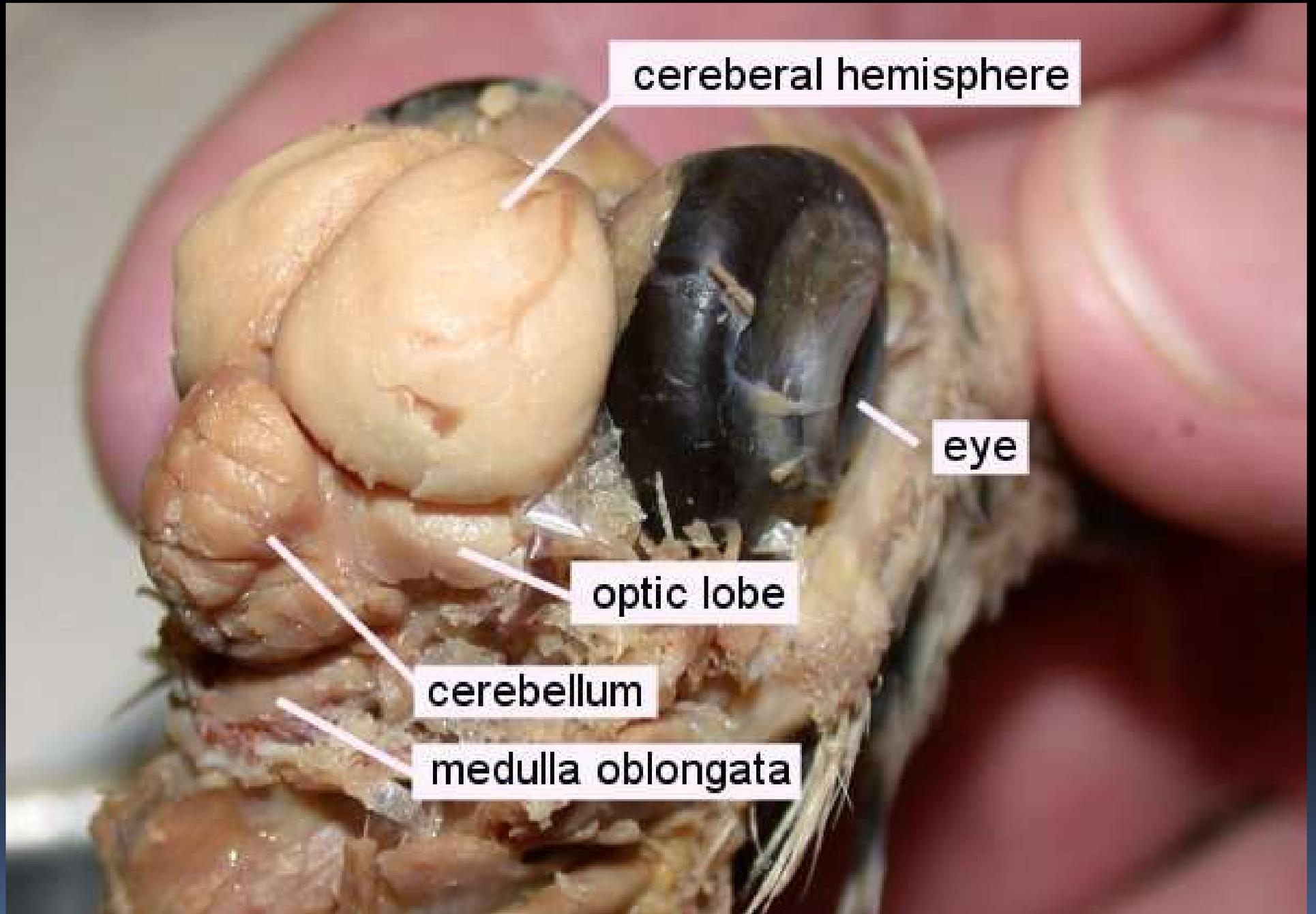
LUNGS

- Examine Lungs
 - Break loose air sacs and serous coverings
 - Strip lungs out with blunt edged instrument
 - Begin at caudolateral edge



BRAIN

- Examine turbinates and sinuses
 - Make transverse cut between nostrils and eyes
- Remove and Examine the Brain
 - Disarticulate the atlanto-occipital joint
 - Carefully remove the skull and expose the brain
 - Sever the cranial nerves and remove the brain
 - Hold head upside down and cut cranial nerves



cereberal hemisphere

eye

optic lobe

cerebellum

medulla oblongata

THANKS



**POULTRY
DISEASE**

Mrityunjoy Mondal



QUERIES