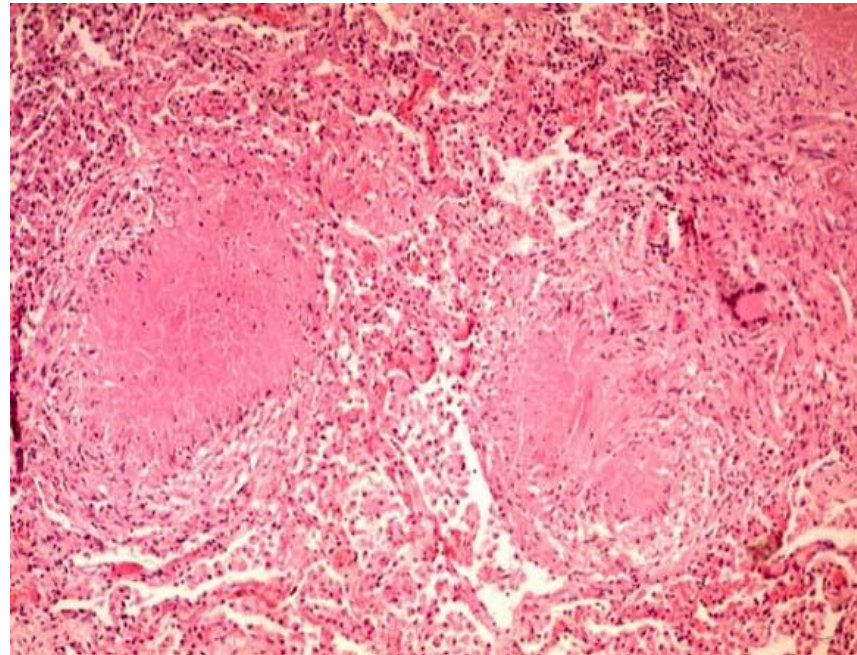


**M.J.F. COLLEGE OF VETERINARY AND ANIMAL SCIENCE,  
CHOMU, JAIPUR**

**DEPARTMENT OF VETERINARY PATHOLOGY**



# Veterinary Pathology ( 4+2)

- ▶ Unit-1. General Veterinary Pathology
- ▶ Unit-2. Systemic Veterinary Pathology
- ▶ Unit-3. Animal Oncology, Veterinary Clinical Pathology and Necropsy
- ▶ Unit-4. Pathology of Infectious and Non infectious Diseases of Domestic Animals
- ▶ Unit-5. Avian Pathology
- ▶ Unit-6. Pathology of Diseases of Laboratory and Wild Animals

## Books for Reference

1. A Text Book of Veterinary General Pathology
2. A Text Book of Veterinary Systemic Pathology
3. A Text Book of Veterinary Special Pathology (Dr. J.L. Vegad)
4. Veterinary Pathology, Ganti A. sastry
5. Pathologic Basis of Veterinary Diseases, James F. Zachary and [M. Donald McGavin](#) -2007
6. [Veterinary Pathology](#)- Jones and Hunt -1983
7. [Thomson's Special Veterinary Pathology](#)-1984
8. A text Book of Pathology, William Boyd-1988
9. Diseases of Poultry, Calnek, Y.M. Saif 12<sup>th</sup> Edn-2012

# Unit-1: GENERAL VETERINARY PATHOLOGY

- ❑ Pathology : **Study of Disease**
- ❑ Pathos: Sufferings or Disease
- ❑ Logos: Study of/ Discourse
- ❑ Pathology is scientific study of disease.
  
- ❑ Disease: Condition in which individual suffers from discomfort.
- ❑ **Dis**; away from/not/negative      **Ease**: comfort
- ❑ **Anatomy** is the study of **structure** of normal body.
- ❑ **Physiology** is study of **functioning** of normal body.
- ❑ Pathology is the study of structure and function of body in disease.

- ▶ **Pathology deals with the structural and functional changes in cells, tissues and organs that underlie the disease.**
- ▶ Dorland- Structural and functional changes in tissues & organs of the body which cause or are caused by disease (Scientific study of the way things go wrong )
- ▶ ● Jones/ Hunt/King : Study of derangements of molecules, cells, tissues and function that occur in living organism in response to injurious agent or deprivations.

- ▶ It is also a scientific study of way the things go wrong
- ▶ It is a discipline that bridges basic science and clinical practice.
- ▶ The object of pathology is to acquaint the students with the changes occurring in the cells or tissues as a result of disease.
- ▶ While studying pathology the student learns to apply the knowledge of basic subjects, visualize the tissue changes and appreciate and understand the changes in terms of symptoms appear in diseased animal.
- ▶ Pathology is that correlating study in which pre pathology courses are coordinated so that better understanding of clinical subjects become possible. It explains how altered structure produce lesions and altered functions produce symptoms.
- ▶ Pathology is central to an understanding of disease. It occupies pivotal position in the study of veterinary Medicine.

- ❑ Health: Normal condition of body and mind.
- ❑ Body is in complete harmony with its surrounding or environment.
- ❑ Mechanism by which body is kept at equilibrium or harmony is Homeostasis.
- ❑ Body is adapting to the constant changes in external and internal environment.
- ❑ When there inadequate adaptation comes under pathology.
- ❑ When adaptation is not possible a sequence of regressive changes occur collectively known as cell injury.
- ❑ General Adaptation Syndrome: Effect of ever changing environment and never ending sequences of adaptation
- ❑ If this is successful – there is a status of health
- ❑ If this fails- there is situation called Stress
- ❑ Stress prepares or precipitates the disease.

- ❑ As long as our body is on requirement based response i.e. requirement is met, the response is reversed- if this is static. This is absolute/physiological state of health.
- ❑ If requirement based response is not there-
- ❑ Neuroendocrinal system is stimulated and release stress hormones like corticoids, adrenaline and initiate diminished response in terms of
  - ❑ Decreased production,
  - ❑ reproduction,
  - ❑ growth,
  - ❑ leucocytes,
  - ❑ body temp. etc.



- ❑ Earlier study of pathology –mostly confined to morphological changes both gross and microscopic.
- ❑ Modern pathology- Molecular and immunological mechanisms have become integral part in understanding the indepth study of any disease process.
- ❑ Disease first produced at molecular level and bio molecular lesion is first developed.
- ❑ This induces structural changes first at E. M. level (Ultrastructural lesion) then
- ❑ Light microscope level (Microscopic lesion) then
- ❑ Gross lesion (Macroscopic lesion ) are seen

# GENERAL PATHOLOGY

- Basic reactions/alterations of cells or tissues or organ as a result of injured stimuli or disease.
- *e.g.* Fatty changes, Thrombosis, Oedema, Infarction, Amyloidosis, Embolism, Necrosis.
- Fundamental reactions that are common to more than one tissue or organ



# SYSTEMIC PATHOLOGY

- ▶ Application of basic reactions to various body systems
- ▶ Alterations in tissues/organs of a particular system. *e.g.* Respiratory system, Genital system etc.

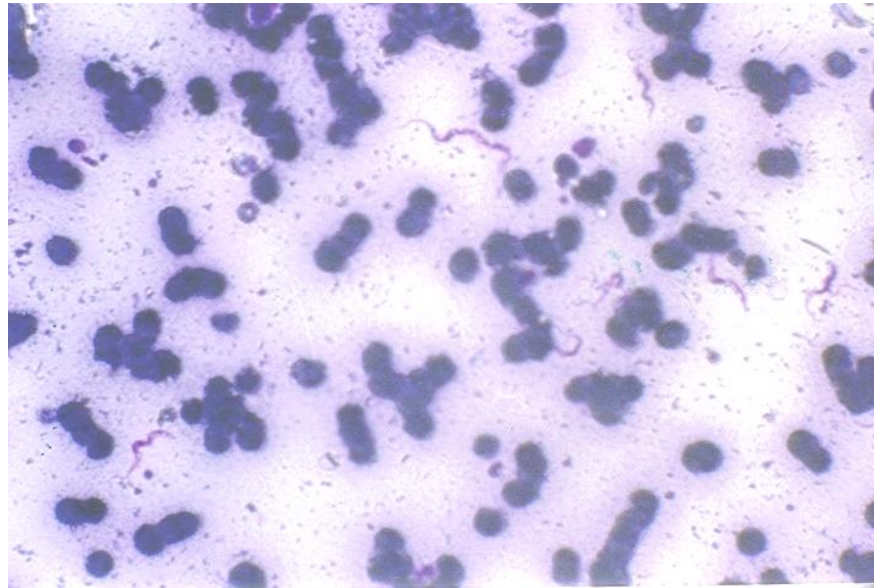


# SPECIAL PATHOLOGY

- ▶ Application of the basic alterations learned in general pathology to various specific diseases. It involves whole body or a part of body. *e.g.* Tuberculosis, Rinderpest etc.

# CLINICAL PATHOLOGY

- ▶ Branch of pathology which helps the clinician in making the diagnosis of disease in sick/ailing animals using laboratory materials such as excretions/secretions/ blood/skin scrapings/ biopsy, Urine, C.S.F., Faeces etc. *e.g.* Urine examination, Blood examination which include certain laboratory methods.



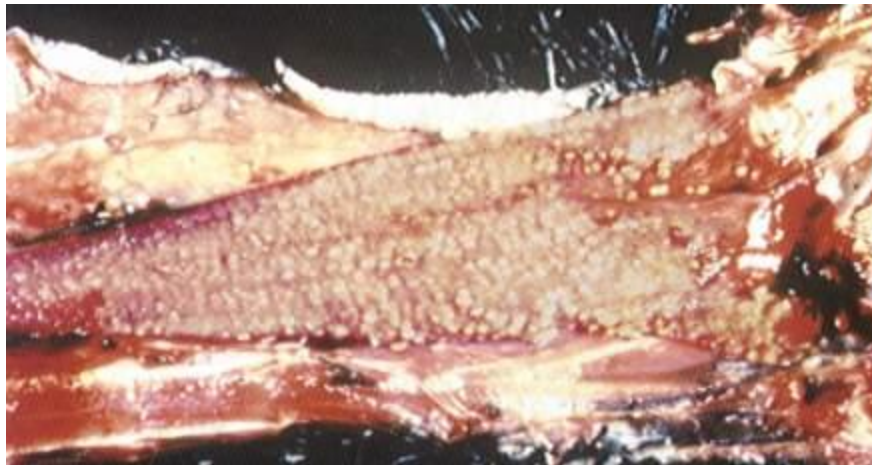
# EXPERIMENTAL PATHOLOGY

- ▶ Study of disease artificially produced in animals OR
- ▶ Production of lesion through experimental methods.
- ▶ *Rotavirus* → calves → enteritis/ diarrhoea in calves.



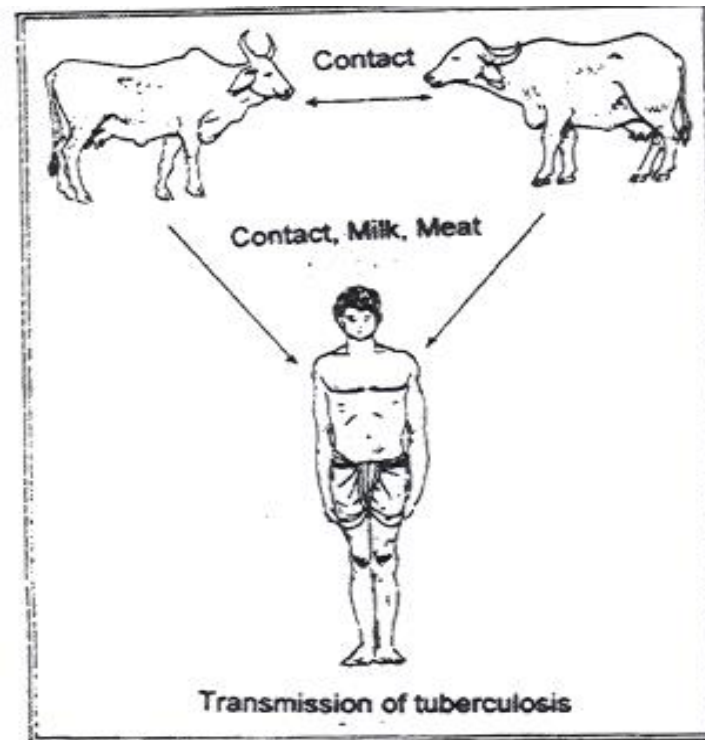
# NUTRITIONAL PATHOLOGY

- ▶ Study of diseases occurred due to deficiency or excess of nutrients. *e.g.* nutritional roup, rickets



# COMPARATIVE PATHOLOGY

- ▶ Study of diseases of animals with a comparative study in human beings and other animals. *e.g.* Zoonotic diseases such as Tuberculosis.



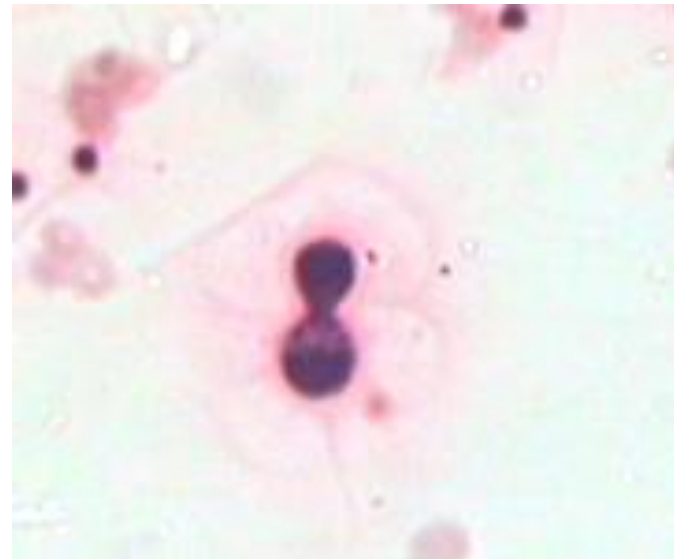
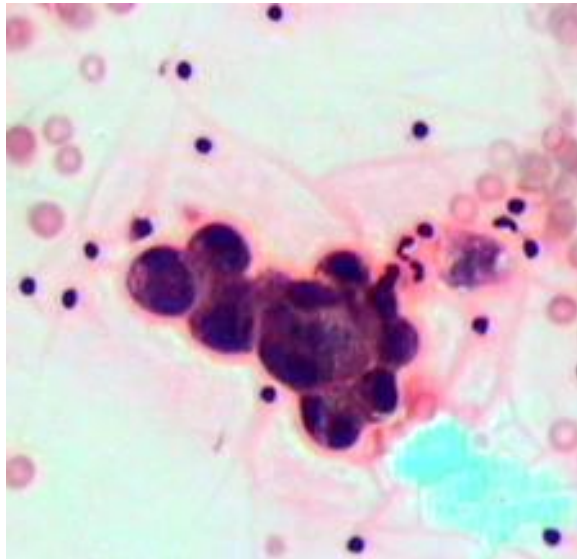


# IMMUNOPATHOLOGY

- ▶ Study of diseases mediated by immune reactions. It includes Immunodeficiency diseases, autoimmunity and hypersensitivity reactions.

# CYTOPATHOLOGY

- ▶ Study of cells shed off from the lesions for diagnosis.



# VETEROLEGAL PATHOLOGY

- ▶ **Careful examination and recording of pathological lesions in case of veterolegal cases.**

# TOXICO PATHOLOGY

- ▶ **Study of tissue/ organ alterations due to toxins/ poisons.**