

## Lecture-1

### INTRODUCTION

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# GENERAL PATHOLOGY or BASIC PATHOLOGY

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- **Patho** (disease, misery, suffering) and **logy** (study of, reasoning about)..... Greek words
- **Morphological, functional or biochemical changes in cells, tissues or fluids of the body.**
- Mammoth increase in knowledge about disease
- Appreciating something wrong in the body — **WHAT**,
- Further questions — **WHY** and **HOW**
- **GENERAL PATHOLOGY** — revolves around the **mechanisms** by which tissues are injured together with the **expressions** of injury and the **functional consequences** of it,

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## BRANCHES OF PATHOLOGY

- Medical pathology
- Veterinary pathology
- Diagnostic pathology
- Forensic pathology
- Surgical pathology
- Environmental pathology
- Toxicological pathology
- Zoo and wildlife pathology

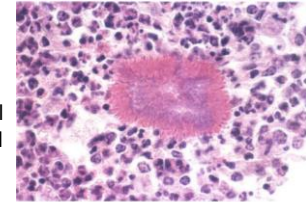
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- Immunopathology
- Clinical pathology
- Experimental pathology
- Systemic pathology
- General pathology

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## LANGUAGE OF PATHOLOGY

- **Lesion** (Latin, *laesio* - injury)
- **Pathognomonic lesion**
- A **biopsy**
- The **necropsy** ("autopsy")
- The **Disease** (dis ease) is a clinical manifestation in the form of clinical signs and symptoms of an underlying abnormality. The abnormality may be structural or functional or both.



1-22 Miliary abscess in pyogranulomatous lymphadenitis  
"Sulfur granule" (blue stained colony of bacteria) with a red regular peripheral rim of eosinophilic clubs surrounded by viable and necrotic macrophages and neutrophils (pus). Actinobacillus (*Actinobacillus lignieresii*). Cow. HE.

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## LANGUAGE OF PATHOLOGY

- **Pathogenesis**
- **Diagnosis**
- **Prognosis**
- **Aetiology**
- **Clinical signs and symptoms,**
- **Syndrome** - cluster of symptoms and/or signs not necessarily due to the same cause. e.g., mal-absorption syndrome
- **complications and sequelae**

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## TECHNIQUES IN PATHOLOGY

- Light microscopy
- Histochemistry
- Immunohistochemistry and immunofluorescence
- Electron microscopy
- Biochemical techniques
- Haematological techniques
- Cell cultures
- Medical microbiology
- Molecular pathology

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## TOOLS OF PATHOLOGY

- Eyes and Hands
- Magnifying lens, scale, weighing balance etc.
- Light Microscope
- Microtome
- Hematology analyzer
- Spectrophotometer
- Dry chemistry analyzer
- Refractometer
- Histochemical Stains

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- Dark-field, Phase Contrast, Fluorescence microscopy
- Electron Microscopy,
- PCR
- Sequencer
- Electrophoresis unit, etc.

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### References:

- JE van Dijk, E.Gruys and JMVM Mouwen, 2007. Colour Atlas of Veterinary Pathology, Second Ed., Saunders Elsevier.
- MD McGavin and JF Zachary, Pathologic basis of Veterinary Disease. 4<sup>th</sup> Ed., Mosby Elsevier.
- V Kumar, AK Abbas, N Fausto, JC Aster, 2010. Pathologic basis of disease. 8<sup>th</sup> Ed., **Saunders Elsevier.**

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*If you are not willing to learn,  
No one can help you.*

*If you are determined to learn,  
No one can stop you.*

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