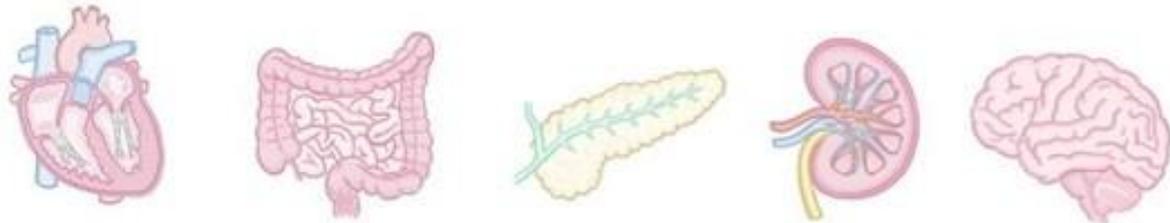


# AMYLOIDOSIS



Course Title: (VETERINARY PATHOLOGY (Paper-I))  
UNIT No. : I

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# Introduction

- ▶ **Amyloidosis** is a rare disease that occurs when an abnormal protein, called amyloid, builds up in the organs and interferes with their normal function.
- ▶ Amyloid isn't normally found in the body, but it can be formed from several different types of proteins.
- ▶ Organs that may be affected include the heart, kidneys, liver, spleen, nervous system and digestive tract. Some varieties of amyloidosis may lead to life-threatening organ failure.
- ▶ It is a group of diseases in which **abnormal proteins**, known as amyloid fibrils, build up in tissue.

# Definition of Amyloidosis

- ❖ It is believed to be an **immunological disorder** characterised by deposition of a homogeneous, translucent substance/ waxy starch like substance in the perivascular space( in between capillary endothelial cells and adjacent cells or tissue).

OR

- ❖ It is a group of diseases characterised by extracellular deposition of **fibrillary-insoluble-proteinaceous** substances(=Amyloid) having common morphological appearance and staining properties.

# Amyloid

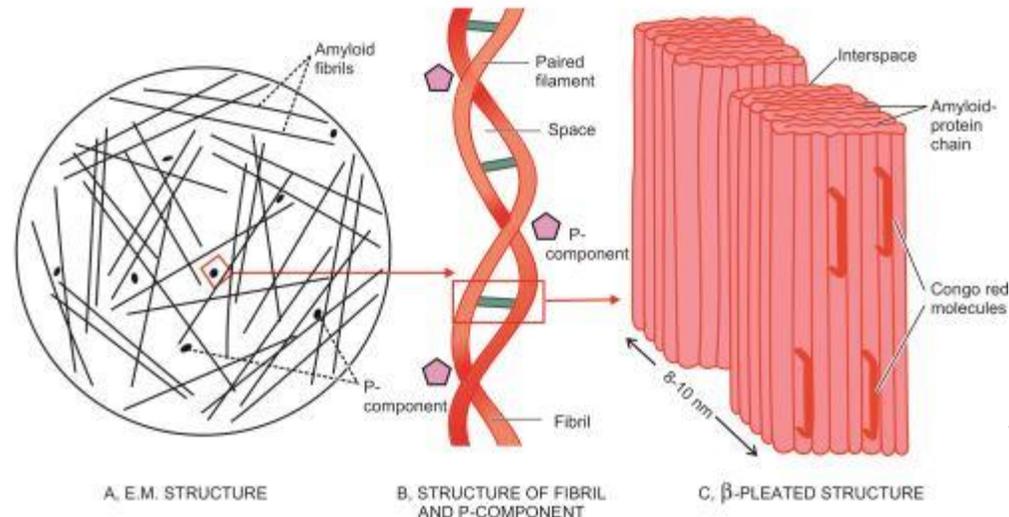
- The name Amyloid was given by Virchow under the mistaken belief that the material was **starch-like** (Amylon=starch).
- The cut surface of organ containing amyloid stained BROWN with iodine and turned VIOLET after addition of sulphuric acid.
- Confirmatory staining property is **congophilia** (+with congo red) followed by examination under polarising microscopy showing **apple-green birefringence**.

# Chemical Composition of Amyloid

It is composed of TWO main types of complex proteins

I. Fibril Protein(=about 95%)

I. Non-Fibrillar Component which contains P-component(=remaining 5%)



Reference: BOOK TITLE: [Essential Pathology for Dental Students](#) ;Chapter-07 Amyloidosis

# Classification of Amyloidosis

## Based on Causes:

- Primary Amyloidosis-** -due to plasm cell dyscrasias/disorder and  
-due to deposition occurring as a part of the disease itself
- Secondary Amyloidosis:** -due to complication of chronic inflammatory condition  
-found classically in TB/ bronchiectasis

## Based on extent of amyloid deposition:

- Systemic/Generalised Amyloidosis:** involving multiple organs
- Localised Amyloidosis:** involving one or two organs or site

# Pathogenesis of Amyloidosis

Regardless of the organ involved, deposition of amyloid occurs in the perivascular space of tissues with progressive accumulation of amyloid around the Blood vessel.

**THREE IMPORTANT CHANGES OCCURS:**

The extravascular amyloid deposits produces pressure atrophy of adjacent cells/tissues

Due to impervious amyloid deposition; exchange of gases, nutrients & waste materials between the blood vessels and adjacent cells can't occurs resulting into degeneration and necrosis of surrounding cells/tissue

Enlarged amyloid mass put pressure upon the vessel and causes stenosis of vessels and causes ischemia in portion of the involved organs

# Lesions of Amyloidosis

It can be found in all organs including the heart, kidneys, liver, spleen, nervous system and digestive tract but incidence may vary with species and organs.

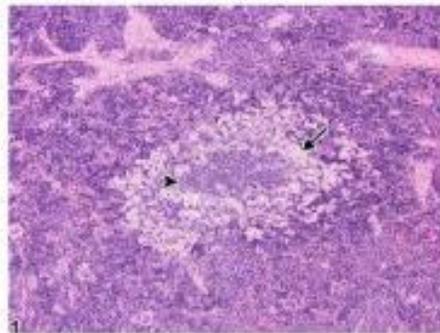
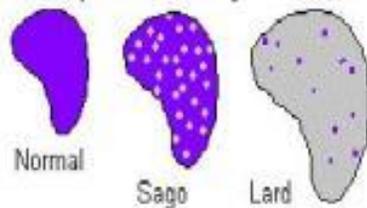
## Amyloidosis of spleen:

one of two patterns of deposition is seen:

**Sago spleen** - deposits are large but limited to the splenic follicles, producing tapioca-like granules grossly.

**Lardaceous spleen** - Amyloid involves the walls of the splenic sinuses and connective tissue framework in the red pulp. Fusion of the early deposits gives rise to large, map-like areas of amyloidosis.

The Spleen in Amyloidosis



# References:

1. Book : “Textbook of Pathology” By Harsh Mohan, Eighth edition.
2. Pictures are taken from [www.google .com](http://www.google.com)



**Thank you**

