Amyloid
Definitions

- Amyloid is an amorphous, extracellular, eosinophilic material deposited in various body tissues and organs giving the disease known as Amyloidosis.
- Amyloidosis is a disease characterized by the presence of amyloid as microscopic deposit, as plaques, or as confluent masses that may progressively replace the parenchyma of affected organs, which may become enlarged, firm, and pale in macroscopic appearance, with progressive loss of function leading to eventual organ failure and death, such affected organs may show a waxy texture to their cut surface.
- Amyloidosis also known as (Waxy texture or Lardaceous disease)
Composition of amyloid

• With the development of suitable extraction techniques it became clear that the bulk of amyloid of deposits were composed of protein.
• X-ray diffraction techniques showed that the protein was predominantly arranged in an anti-parallel β-pleated sheet conformation.
• Electron microscopic studies of amyloid have shown that all amyloid deposits display a unique fibrillary arrangement.
• In pathological material routinely prepared for electron microscopy, amyloid deposits appear as masses of extracellular, un-branched filaments, usually in a random orientation.
Beta-Amyloid Plaque
Classification

The main classification scheme for amyloid used until the 1980s was that of Reimann et al (1935) which divided amyloid types into the following categories:

- Primary amyloid occurring spontaneously in the absence of apparent predisposing illness and frequently affecting tissue of mesodermal origin such as muscle, heart, skin and tongue often with localized deposits. The spleen, liver, and kidney are infrequently affected in this type of amyloidosis.
• Secondary amyloid occurring in association with a wide range of predisposing or coexisting pathology. In the past these were often chronic infective diseases such as syphilis, or tuberculosis, but nowadays inflammatory conditions such as rheumatoid arthritis are more common. The distribution of the amyloid deposits it is typically systemic, being found in liver, spleen, kidneys, and adrenal glands.
• Tumor associated amyloid.
• Myeloma associated amyloid, found in a proportion of patients with plasma cell diseases such as multiple myeloma.
• Endocrine associated amyloid.
• Familial amyloid.
• Aging amyloid.