Hypersensitivity Type III

Hypersensitivity Type III reaction occurs due to circulating antigen-antibody immune complexes that deposit in various locations (especially vessel walls) and cause inflammation. It can result in systemic (i.e. Serum sickness) or local immune complex disease (i.e. Arthus reaction).



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Immune Complex
Moon-Antibody-Complex
Antibody circulating within blood vessels attaches to antigen forming circulating immune complexes that then deposit in various locations.

Antigen-antibody (IgG) complex activates complement
Ant-gem Ant-tie-body and Gold Globulin-goblin Hugging and Complimenting
These immune complexes activate complement via antibody binding to Fc receptors of leukocytes. This results in inflammation.

Neutrophils release lysozomal enzymes
Nude-trojan Spraying Lysos-bottle
Inflammation occurs due to neutrophil release of lysosomal enzymes and reactive oxygen intermediates.

Examples

Arthus Reaction
Artist Painting
This is an example of a local immune complex disease that usually occurs in the skin.

Serum Sickness
Syrup sickness
This is an example of systemic immune complex disease that occurs due to a patient receiving non-human animal serum in significant amounts.

Systemic Lupus Erythematosus (SLE)
Loopy-butterfly
This is a chronic type of serum sickness that occurs due to antibody formation against nuclear antigens.

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