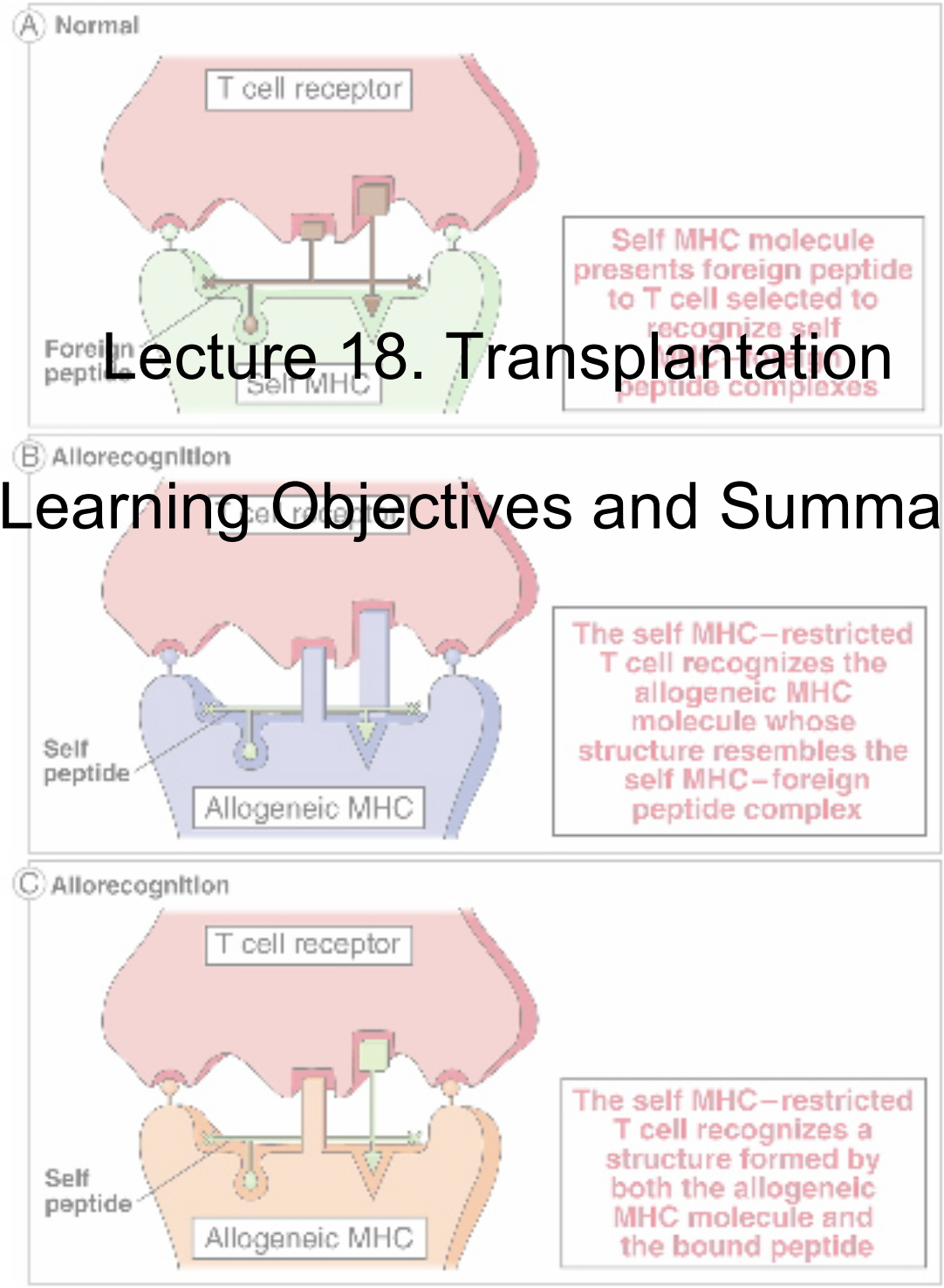

Lecture 18. Transplantation

Learning Objectives and Summary

18. Transplantation

Learning objectives:

1. Understand the immunological mechanisms responsible for first and second set allograft skin rejection
2. Conceptualize direct and indirect alloantigen recognition
3. Learn the definition and mechanism(s) associated with the mixed lymphocyte reaction (MLR)
4. Distinguish and compare the pathophysiology of hyperacute, acute and chronic solid organ vs. bone marrow allograft rejection
5. Appreciate the roles that central and peripheral immunological tolerance have in orchestrating graft rejection.
6. Appreciate the general and specific indications for bone marrow transplantation and understand the essential components for development of graft vs. host disease (GVHD)

SUMMARY

1. First set donor tissue rejection from a non-identical MHC recipient is a primary adaptive immune response.

2. Second set donor tissue rejection for a non-identical MHC recipient involves memory antigen host T & B cells.

3. Alloantigen antigen direct and indirect presentation involves donor and host APC, respectively.

4. T-cell activation and proliferation involves the formation of an “immunological synapse” utilizing TCR/MHC and co-simulating ligands and receptors.

5. Tissue rejection may be hyperacute (preexsisting Ab) acute (days to weeks) and/or chronic (months to years).

6. Allogenic stem cell transplantation may result in hyperacute (1-7 days), acute (7-10 days) and/or chronic (100 days– 5 yr) GVHD.