Vascular anomalies fall into two unique groups—hemangiomas and vascular malformations—based on their endothelial characteristics. Hemangiomas have a defined natural history characterized by distinct periods of proliferation, plateau, and involution. Although present at birth, vascular malformations might not be clinically evident until early childhood. Vascular malformations grow commensurately with the child; however, certain lesions may expand suddenly following trauma, sepsis, or hormonal changes. In general, vascular malformations occur sporadically, although some are inherited in an autosomal dominant fashion. Complications from vascular malformations include venous stasis, ischemia, skeletal anomalies, coagulopathy, disseminated intravascular coagulation, heart failure, and death. Vascular malformations can be further subclassified based on flow characteristics and predominant vessel disease. Two main categories exist: fast-flow lesions (i.e., arteriovenous malformations, and arteriovenous fistulas), and slow-flow lesions (i.e., capillary malformations, lymphatic malformations, and venous malformations). The seminar outlines the classification, describes how vascular anomalies clinically behave and are diagnostically evaluated, outlines modalities for their treatment, as well as some recent advances.