Splenic Infarcts

Splenic infarcts are common lesions caused by the occlusion of the major splenic artery or any of its branches. The lack of extensive collateral blood supply predisposes to infarction following vascular occlusion. The spleen, along with kidneys and brain, ranks as one of the most frequent sites where emboli lodge. In normal-sized spleens, infarcts are most often caused by emboli that arise from the heart. The infarcts can be small or large, single or multiple, or even involve the entire organ. They are usually bland, except in individuals with infectious endocarditis of the mitral or aortic valves, in whom septic infarcts are common. Infarcts are also common in markedly enlarged spleens, regardless of cause, presumably because the blood supply is tenuous and easily compromised.

MORPHOLOGY

Bland infarcts are characteristically pale, wedge-shaped, and subcapsular in location. The overlying capsule is often covered with fibrin (Fig. 13-40). In septic infarcts this appearance is modified by the development of suppurative necrosis. In the course of healing, large depressed scars often develop.

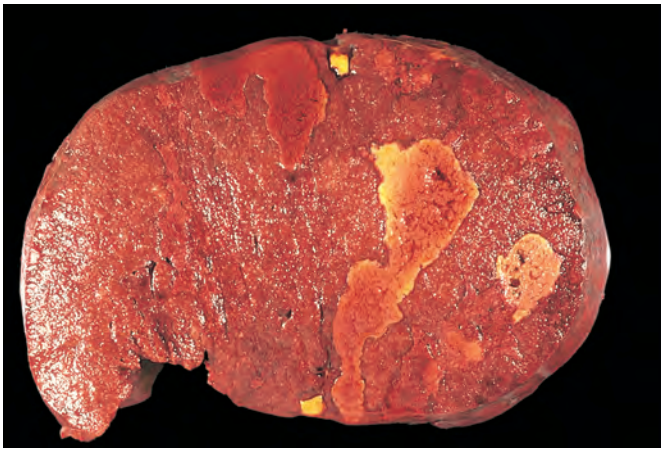

Figure 13-40 Splenic infarcts. Multiple well-circumscribed infarcts are present in this spleen, which is massively enlarged (2820 gm; normal: 150 to 200 gm) by extramedullary hematopoiesis secondary to a myeloproliferative disorder (myelofibrosis). Recent infarcts are hemorrhagic, whereas older, more fibrotic infarcts are a pale yellow-gray color.

Neoplasms

Neoplastic involvement of the spleen is rare except in myeloid and lymphoid tumors, which often cause splenomegaly (discussed earlier). Benign fibromas, osteomas, chondromas, lymphangiomas, and hemangiomas may arise in the spleen. Of these, lymphangiomas and hemangiomas are most common and often cavernous in type.

Congenital Anomalies

Complete absence of the spleen is rare and is usually associated with other congenital abnormalities, such as situs inversus and cardiac malformations. *Hypoplasia* is a more common finding.

Accessory spleens (spleniculi) are common, being present singly or multiply in 20% to 35% of postmortem examinations. They are small, spherical structures that are histologically and functionally identical to the normal spleen. They can be found at any place within the abdominal cavity. Accessory spleens are of great clinical importance in some hematologic disorders, such as hereditary spherocytosis and immune thrombocytopenia purpura, where splenectomy is used as a treatment. If an accessory spleen is overlooked, the therapeutic benefit of removal of the definitive spleen may be reduced or lost entirely.

Rupture

Splenic rupture is usually precipitated by blunt trauma. Much less often, it occurs in the apparent absence of a physical blow. Such "spontaneous ruptures" never involve truly normal spleens but rather stem from some minor physical insult to a spleen made fragile by an underlying condition. The most common predisposing conditions are infectious mononucleosis, malaria, typhoid fever, and lymphoid neoplasms, which may cause the spleen to enlarge rapidly, producing a thin, tense capsule that is susceptible to rupture. This dramatic event often precipitates intraperitoneal hemorrhage, which must be treated by prompt splenectomy to prevent death from blood loss. Chronically enlarged spleens are unlikely to rupture because of the toughening effect of extensive reactive fibrosis.

THYMUS

Once an organ buried in obscurity, the thymus now has a starring role in cell-mediated immunity (Chapter 6). Here, our interest centers on the disorders of the gland itself.

The thymus is embryologically derived from the third and, inconstantly, the fourth pair of pharyngeal pouches. At birth it weighs 10 to 35 gm. It grows until puberty, when it achieves a maximum weight of 20 to 50 gm, and thereafter undergoes progressive involution to little more than 5 to 15 gm in older adults. The thymus can also involute in children and young adults in response to severe illness and HIV infection.

The fully developed thymus is composed of two fused, well-encapsulated lobes. Fibrous extensions of the capsule divide each lobe into numerous lobules, each with an outer cortical layer enclosing the central medulla. Diverse types of cells populate the thymus, but thymic epithelial cells and immature T lymphocytes, also called thymocytes, predominate. The cortical, peripheral, epithelial cells are polygonal in shape and have an abundant cytoplasm with dendritic extensions that contact adjacent cells. In contrast, the epithelial cells in the medulla are densely packed, often spindle-shaped, and have scant cytoplasm devoid of