evaluated further for paravalvular abscess, extracardiac abscesses (spleen, kidney), or complications (embolic events). Recrudescent fever raises the possibility of these complications but also of drug reactions or complications of hospitalization. Vegetations become smaller with effective therapy; however, 3 months after cure, 50% are unchanged, and 25% each are slightly larger or smaller.

***Antithrombotic Therapy*** Because patients with IE are at risk for hemorrhagic transformation of embolic strokes and for intracerebral hemorrhage from septic arteritis or ruptured mycotic aneurysms, initiation of antithrombotic (anticoagulant or antiplatelet) therapy requires careful consideration of the risks and benefits. Antithrombotic therapy can render such bleeding catastrophic. Neither anticoagulant nor antiplatelet therapy reduces the risk of emboli in patients with NVE, and thus such treatment is not indicated for that purpose. However, patients with IE may have coexisting conditions wherein anticoagulation is indicated. Thus, in the absence of a contraindication (i.e., no clinical or imaging evidence of a recent large embolic stroke, intracerebral hemorrhage, or mycotic aneurysm), anticoagulant therapy is given to patients who have a mechanical prosthetic valve, atrial fibrillation with either mitral stenosis or a CHA2DS2-VASc score ≥2, or deep-vein thrombophlebitis. Most experts use unfractionated or low-molecular-weight heparin for ease of reversal. Anticoagulant therapy should be reversed, at least temporarily, in most patients who have had an acute ischemic stroke or an intracerebral hemorrhage.

## SURGICAL TREATMENT

The indications for cardiac surgical treatment of IE **(Table 128-6)** have been derived from observational studies and expert opinion. The strength of specific indications varies; thus the risks and benefits as well as the timing of surgery must be individualized **(Table 128-7)**. These are best weighed by a team that includes cardiologists, cardiac surgeons, infectious disease physicians, and neurologists if there have been neurologic complications. Between 25% and 40% of patients with left-sided IE undergo cardiac surgery during active infection, with slightly higher surgery rates for PVE