Intraoperative and postoperative angiography

Due to the fact that unexpected findings (aneurysmal rest, unclipped aneurysm, or major vessel occlusion) were seen on 19% of post-op angiograms (the only predictive factor identified was a new post-op deficit, which signaled major vessel occlusion), the routine use of some confirmatory test is recommended. May also be applied to AVM surgery. Options include:

1. post-op angiography: correctable problems identified with this option require a return to the operating room, and some potentially reversible deficits may be too late to recover by that time

2. intraoperative options

a) catheter angiography using traditional iodinated contrast and fluoroscopy.Requires the use of a radiolucent head holder. Typically the introducer sheath is placed in the femoral artery at the time of initial pre-op angio, and is left in place for intraoperative use. Requires the services of an angiographer if the surgeon does not do this

b) visualize the vessels during surgery(has largely supplanted intra-op catheter angiography)

1. indocyanine green (ICG): can be visualized under normal light, or sometimes to better advantage when illuminated with near-infrared light. Use is restricted to surface vessels. Maybe less reliable with giant or wide-neck aneurysms or with thick-walled atherosclerotic vessels

2. fluorescein videoangiography