Direct Cannulation of the Axillary Artery for Arterial Inflow

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Background: The axillary artery is our preferred arterial cannulation site when ascending aorta cannot be cannulated. We cannulate the artery directly. The purpose of this study was to review our experience with this technique and to investigate cannulation-related morbidity.
Methods: From January 2006 to October 2011, 63 patients underwent 63 axillary artery cannulations. Indications included calcified ascending aorta (5, 8%), ascending aortic aneurysm (41, 65%), acute type A aortic dissection (9, 14.2%), and cardiac reoperation (8, 12.7%). The right axillary artery was cannulated directly in all patients. In the patients with ascending aortic aneurysm and acute type A aortic dissection, distal anastomosis was performed with an open technique after hypothermic circulatory arrest and antegrade perfusion of the brain.
Results: We had no technical problems during direct axillary artery cannulation; no patient had vascular injury; and no incidence of postoperative peripheral neurological injury. Two operative deaths occurred. One patient had postoperative stroke, which resolved at late follow-up.
Conclusions: The axillary artery is an excellent site for arterial inflow. Furthermore, antegrade cerebral perfusion is easily accomplished during periods of circulatory arrest. Use of the axillary artery as inflow for cardiopulmonary bypass is associated with low morbidity.