

Endoscopic radial artery harvesting: results of first 300 patients

Connolly MW, Torrillo LD, Stauder MJ, Patel NU, McCabe JC, Loulmet DF, Subramanian VA

Section of Cardiovascular and Thoracic Surgery, Lenox Hill Hospital, New York, New York, USA

Background: With the expanded use of the radial artery as a bypass conduit in patients undergoing coronary artery bypass grafting, an endoscopic radial artery harvesting method was used to improve esthetics and patient acceptance, and possibly, to decrease hand neurologic complications.

Methods: After informed consent and confirmation of adequate ulnar collateral blood flow, 300 consecutive patients undergoing coronary artery bypass grafting had their nondominant radial artery endoscopically removed through a small 3-cm incision just proximal to the radial styloid prominence. Standard endoscopic vein equipment (30-degree 5-mm endoscope, subcutaneous retractor, and vessel dissector) with ultrasonic harmonic coagulating shears were used. After radial artery isolation, the radial artery was proximally clipped and transected 1 to 2 cm distal to the visualized ulnar artery origin to the inferior end of the wrist incision.

Results: The mean age was 62.2 years; 23% of the patients were women, 39% had diabetes mellitus, and 28% had peripheral vascular disease. All 300 endoscopic radial arteries were grossly

acceptable and used for grafting. Early in the series, 29 patients (9.7%) required a second 3-cm incision proximally for vascular control. Only one wrist incision was required at the last 200 cases. The conduit length varied between 18 and 24 cm. Occurring early in the series, hospital complications were two tunnel hematomas requiring drainage and one brachial artery clipping repaired primarily without sequela. At 30 days postoperative follow-up, 5 patients (1.6%) had been treated with oral antibiotics for incisional cellulitis and 26 patients (8.7%) had objective dorsal thenar sensory numbness. No ischemic hand complication, perioperative myocardial infarction, reintervention in radial artery graft distribution, or numbness in the lateral forearm occurred. All patients expressed marked satisfaction with the small incision and cosmetic result.

Conclusion: In our initial experience, endoscopic radial artery harvesting can be performed safely, with minor, infrequent complications. A full-length radial artery conduit can be obtained with improved esthetics and patient satisfaction and acceptance. Late dorsal thenar paresthesias, although infrequent, continue to be a problem as with the open method.