

Feasibility and Safety of Transulnar Approach for Coronary Angiography and Angioplasty

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The transradial approach (TRA) for cardiac catheterization has been accepted as a safe and effective alternative to femoral approach due to fewer access site complications and improved patient comfort. Recently preliminary reports on small numbers of patients have suggested that the transulnar approach TUA is a useful alternative to TRA to preserve the radial artery as a potential coronary bypass graft. Objectives: To assess the feasibility and safety of TUA for coronary angiography and angioplasty. Methods: Single center, case series study. Catheterization data and outcomes during and post catheterization were collected prospectively. The access site determined by the operator preference. Results: From November 2005 through October 2009, 4479 patients were screened for TRA or TUA: In 32/388 (8.2%) patients screened for TUA, there was no palpable ulnar artery or ineffective palmar arch collateral support, compared to 61/4091 (1.5%) patients screened for TRA, $p < 0.0001$. TUA was performed in 356 (8.1%) and TRA in 4030 (91.9%) patients. Mean age (60.6 +/- 11.6 years), women (37.2%) and baseline characteristics were similar in both groups. Coronary angioplasty was performed in 47% of patients in both groups. Procedural failure and crossover to alternative access site were 7.3% in TUA versus 3.8% in TRA (OR 1.08, 95% CI 1.02 to 1.15, $p = 0.003$). The most frequent reason for access site failure in TUA were inability to introduce guiding wire despite good arterial flow (57.7% of all failed procedures) and failure to puncture the artery (30.8%). Fluoroscopy time (minutes) was 10.7 +/- 9.3 in TRA versus 11.6 +/- 10.7 in TUA ($p = 0.084$). There were no significant access site complications in TUA versus 0.07% in TRA (OR 1.0, 95% CI 0.99 to 1.00, $p = 0.27$). Conclusion: Transulnar approach is a feasible and safe, alternative to the TRA, for coronary angiography and angioplasty, to reduce vascular complications. However, it is more manual demanding and has higher access site failure rates.