Comparing the Left Distal Transradial Artery Access To Traditional Access Methods For Coronary Angiography: A Single Center Experience

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OBJECTIVE

The aim of the study was to compare the effectiveness and safety of left distal transradial (LdTRA) approach in patients who had prior coronary artery bypass grafting (CABG) with conventional femoral and radial access in cardiac

BACKGROUND

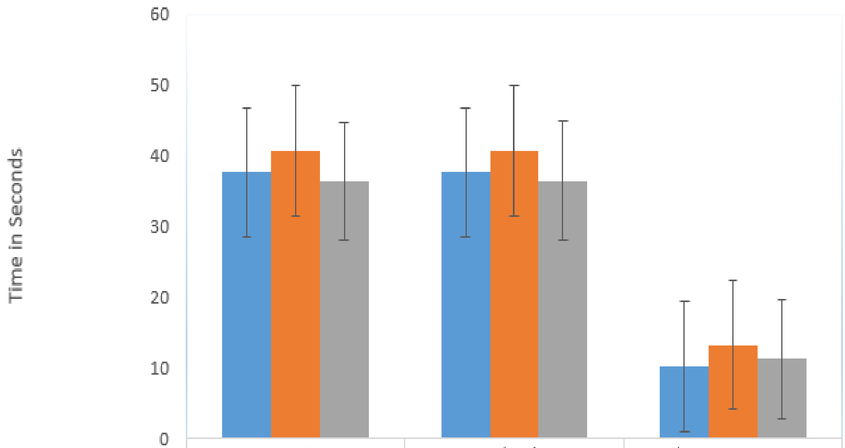
The left distal transradial approach (LdTRA) is a newer vascular access for coronary angiography. We hypothesized that LdTRA is superior to traditional femoral and right radial cardiac catheterization approaches in patients who underwent prior bypass graft surgery.

METHODS

We retrospectively screened 417 patients with prior CABG, undergoing coronary angiography at our institution between January 2018 and August 2020, to compare the type of intervention using site of access as independent factor. We screened patients' charts using Xper IM. Analyses were performed by Statistical Product and Services Solution using Chi Square test and Pearson's correlation for categorical data and ANOVA test for nominal data, at a p value of <0.05. Pre-defined end points were time to access, procedure duration, fluoroscopy time and dose.

RESULTS

The mean time for femoral access was 37.68±1.19 seconds (95% CI 35.3295-40.04), for snuffbox access 36.4±5.06 seconds (95% CI=26.03-46.81), and for proximal radial access 40.71±4.17 seconds (95% CI=31.21-50.20).Mean procedural time via femoral access was 37.68±1.97 minutes, via snuffbox access was 36.43±5.06 minutes, and via radial access was 40.71±4.17 minutes. Mean length of stay for femoral access was 1.97±0.14 days, for radial access 2.13±0.31 days and for snuffbox access 1.68±0.27 days. The fluoroscopy time for femoral access was 10.23±0.41 minutes, for snuffbox access was 11.28±2.00 minutes and for radial access was 13.23±1.74 minutes. The fluoroscopy dose for femoral access was 599.98±26.63 Gy/cm2, for snuffbox approach 722.71±112.94 Gy/cm2 and for radial access was 767.06±90.89 Gy/cm2. There were no complications noted in our study. We found no statistical significance difference between approaches with regards to time of access, procedure duration, fluoroscopy time and dose



	Access Time	Procedural time	Flouroscopy time
Femoral approach	37.68	37.68	10.23
Radial Approach	40.71	40.71	13.23
Snuff Box Approach	36.4	36.43	11.28

DISCUSSION

Since its introduction ,the use of radial access for coronary interventional angiography has markedly increased worldwide. Studies that compared a transradial approach (TRA) with a transfemoral approach (TFA) have shown an unequivocal benefit of TRA in regards to reduced morbidity and mortality, greater patient preference, and cost reductions. With repeated interventions done through radial access, there's a chance that it might limit the viability of the vessel and there's a risk of arterial occlusion. The dTRA is a newer approach that prevents these complications as it spares the palmer branch that supplies the deep palmer arch, reducing ischemic hand events.

In prior studies, LdTRA is preferred route than right radial and femoral access in patients with prior CABG. The main results of our study didn't show any statistically significant difference between the three approaches for invasive coronary procedures. One of the reasons probably that our retrospective study was a single centre experience over three years with a small sample size. We need more studies in future to determine the effectiveness of the LdTRA in prior CABG patients.

CONCLUSION

Due to lack of statistical significance between outcomes of either approach, all approaches are acceptable options. Clinically, the snuffbox approach may be superior because it helps salvage the radial conduit for future coronary interventions and avoids the risk of femoral access complications. Therefore, we recommend to electively opt for snuffbox approach in the absence of lack of any significant side effect profile.