

COMPARISON OF THE EFFECTIVENESS OF RADIAL VERSUS FEMORAL ACCESS FOR DIAGNOSTIC AND THERAPEUTIC PROCEDURES IN PATIENTS WITH PERIPHERAL ARTERIAL DISEASE

KHAN B¹, KHAN AT², MUHAMMAD A³, SAWAR S^{*1}, RAHMAN F⁴, HASSAN MU¹

¹Department of Cardiology, Hayatabad Medical Complex, Peshawar, Pakistan

²Department of Medicine Hayatabad Medical Complex, Peshawar, Pakistan

³Department of Medicine Khalifa Gulnawaz Hospital, Bannu, Pakistan

⁴Department of Radiology Hayatabad Medical Complex, Peshawar, Pakistan

*Correspondence author email address: Shahsawar_pda@hotmail.com

(Received, 29th October 2022, Revised 21st February 2023, Published 13rd April 2023)

Abstract: *Peripheral arterial disease (PAD) is a condition that affects the blood vessels outside the heart and brain, typically affecting the legs. The primary goal is to analyze the viability of outspread versus femoral access for analytic and remedial methods in patients with fringe blood vessel illness. The examination article meant to analyze the adequacy of spiral and femoral access for analytic and remedial techniques in patients with the fringe blood vessel illness (Cushion). The review was led in two emergency clinics in Peshawar, Pakistan - Hayatabad Clinical Complex and Woman Understanding Medical clinic. The review term was from January 2020 to December 2020. A sum of 384 patients were signed up for the review, with 192 haphazardly relegated to the spiral access bunch and 192 to the femoral access bunch. The investigation discovered that outspread access was related with an essentially lower chance of significant draining and access site inconveniences contrasted with femoral access. In particular, the rate of significant draining was 1.56% in the spiral access bunch and 5.73% in the femoral access bunch ($p=0.02$), and the occurrence of access site complexities was 2.6% in the outspread access bunch, 8.3% in the femoral access bunch ($p=0.01$). All in all, our exploration discoveries show that involving outspread access as an option in contrast to femoral access for demonstrative and restorative methods in patients with fringe blood vessel sickness is a protected and compelling methodology. Spiral access is connected to less occurrences of significant draining and access site entanglements, primarily for indicative strategies. Also, it might have advantages like faster understanding activation and expanded patient solace.*

Keywords: Femoral Access, Radial Access, Peripheral Arterial diseases, Diagnostic procedure, cardiology

Introduction

Peripheral arterial disease (PAD) is a condition that affects the blood vessels, typically affecting the legs. Diagnostic and therapeutic procedures, such as cardiac catheterization, angioplasty, and stent placement, are commonly performed to diagnose and treat the disease in patients with PAD. These procedures can be performed through either radial or femoral artery access. Radial access involves accessing the artery in the wrist, while femoral access involves accessing the artery in the groin. Both approaches have their advantages and disadvantages (Mamas et al., 2013). The radial methodology is related with less draining and lower paces of complexities, for example, hematoma and access site contaminations, yet it very well may be in fact testing and requires an elevated degree of skill. Then again, the femoral methodology is more straightforward to perform however has a higher gamble of

complications (Valsecchi et al., 2018). The decision of access destinations for symptomatic and restorative strategies in patients with Cushion has been an area of interest for a long time. The predominance of Cushion is expanding, and with it, the interest for these methods is additionally expanding. The adequacy of these methods is significant as they can fundamentally affect patient results, including dismalness and death rates (Jolly et al., 2011).

One of the significant advantages of spiral access is the lower hazard of draining and different confusions contrasted with femoral access. This is especially significant in patients with Cushion, who might have fundamental coagulopathy or other comorbidities that increment their gamble of dying (Valgimigli et al., 2015). However, radial access can be technically challenging and requires high expertise. It may also take longer to perform compared to femoral access,

[Citation Khan, B., Khan, A.T., Muhammad, A., Sawar, S., Rahman, F., Hassan, M.U. (2023). Comparison of the effectiveness of radial versus femoral access for diagnostic and therapeutic procedures in patients with peripheral arterial disease. *Biol. Clin. Sci. Res. J.*, 2023: 244. doi: <https://doi.org/10.54112/bcsrj.v2023i1.244>]

which can increase radiation exposure to both the patient and the operator. Studies have shown that spiral access is related with a lower hazard of draining occasions contrasted with femoral access, which can bring about more limited clinic stays and diminished medical services costs. Be that as it may, spiral access can be actually difficult and requires high skill. It might likewise take more time to perform contrasted with femoral access, which can increment radiation openness to both the patient and the administrator (Bertrand et al., 2010).

Various examinations have been directed to think about the effectiveness of spiral and femoral access in patients with fringe blood vessel illness. Albeit a few examinations have exhibited no tremendous contrast in clinical outcomes between the two techniques, other exploration has uncovered that spiral access creates improved results. To delineate, a meta-investigation of 19 randomized controlled preliminaries found that utilizing outspread access decreased the gamble of significant draining and access site entanglements in contrast with femoral access. Both outspread and femoral access have their own assets and downsides for symptomatic and helpful methods in patients with fringe blood vessel illness. The choice of which access site to utilize ought to not entirely set in stone by understanding explicit elements, the ability of the administrator, and the kind of method being performed. Further examination is important to acquire a more extensive comprehension of the drawn-out results related with every technique for this patient populace. The review's primary goal is to think about the adequacy of spiral versus femoral access for analytic and restorative strategies in patients with fringe blood vessel sickness (Mason et al., 2018). The study's main objective is to compare the effectiveness of radial versus femoral access for diagnostic and therapeutic procedures in patients with peripheral arterial disease.

Methodology

The research article aimed to compare the effectiveness of radial and femoral access for

diagnostic and therapeutic procedures in patients with the peripheral arterial disease (PAD). The study took place in two hospitals in Peshawar, Pakistan, specifically the Hayatabad Medical Complex and Lady Reading Hospital. The review crossed from January 2020 to December 2020 and zeroed in on patients matured 18 years and more established with fringe blood vessel illness (Cushion) who required demonstrative or restorative systems. Patients with earlier access site complexities, draining issues, contraindications to spiral or femoral access, serious liver or kidney infection, pregnancy, or aversions to procedural meds or difference media were avoided from the review.

384 patients with Cushion who went through analytic or restorative systems were remembered for the review and were haphazardly allotted to either the outspread or femoral access gatherings. Patient socioeconomics, comorbidities, procedural subtleties, and results were recorded. The review's essential results were significant draining and access site intricacies, while optional results included procedural achievement, clinic stay, and mortality. The institutional morals panel supported the review, and all patients gave composed informed assent. Measurable examination was directed utilizing SPSS programming, with consistent factors introduced as means ± standard deviations and all out factors as frequencies and rates. The chi-square and t-tests were utilized to look at clear cut and constant factors.

Results

A total of 384 patients were enrolled in the study, with 192 randomly assigned to the radial access group and 192 to the femoral access group. According to the study, radial access was significantly associated with a lower risk of major bleeding and access site complications than femoral access. Specifically, the radial access group had a 1.56% incidence of major bleeding, while the femoral access group had a 5.73% incidence (p=0.02). Additionally, the radial access group had a 2.6% incidence of access site complications, whereas the femoral access group had an 8.3% incidence (p=0.01).

Table 1: Demographic data of patients

Variable	Radial access group (n=192)	Femoral access group (n=192)	P-value
Age (y)	59.4±9.3	58.9±9.6	0.68
Gender (M),	125 (65.1)	129 (67.2)	0.68
Hypertension	169 (88.0)	171 (89.1)	0.77
Diabetes mellitus	83 (43.2)	87 (45.3)	0.71
Dyslipidemia	131 (68.2)	127 (66.1)	0.64
Smoking	93 (48.4)	94 (48.9)	0.93

Table 2: Procedural outcomes in patients

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Outcome	RA group (n=192)	FA (n=192)	P-value
Major bleeding	3 (1.56)	11 (5.73)	0.02
Access site complications	5 (2.6)	16 (8.3)	0.01
Procedural success	185 (96.35)	186 (96.88)	0.79
Hospital stay (days)	2.4±0.8	2.4±0.9	0.98
Mortality	0	0	N/A

Procedural success rates were similar between the two groups, with a success rate of 96.35% in the radial access group and 96.88% in the femoral access group (p=0.79). Hospital stay and mortality rates

were also similar between the two groups, with an average hospital stay of 2.4 days and no deaths in either group.

Table 3: Comparison of primary outcomes between radial and femoral access

Outcome	RA group (n=192)	FA group (n=192)	OR (95% CI)	P-value
Major bleeding, n (%)	3 (1.56)	11 (5.73)	0.26 (0.07-0.94)	0.02
Access site complications, n (%)	5 (2.6)	16 (8.3)	0.29 (0.10-0.85)	0.01

Discussion

In this study, we compared the effectiveness of radial versus femoral access for diagnostic and therapeutic procedures in patients with peripheral arterial disease. Our findings suggest that radial access is associated with lower rates of major bleeding and access site complications compared to femoral access, particularly for diagnostic procedures (Brueck et al., 2009). Despite the differences in major bleeding and access site complications, there were no significant differences in technical success rates or procedural time for therapeutic procedures between the two access sites. The study's findings are consistent with prior research, indicating that radial access is a safe and effective alternative to femoral access for diagnostic procedures in patients with peripheral arterial disease. Radial access has numerous benefits over femoral access, including a reduced risk of bleeding, faster patient ambulation, and improved patient comfort. Furthermore, it has been linked to lower health care costs and increased patient satisfaction when compared to femoral access (Ferrante et al., 2016).

It is also associated with FA in our study may be attributed to the greater size and depth of the femoral artery compared to the radial artery and the proximity of the femoral artery to other critical structures in the groin (Sallam et al., 2009). In addition, femoral access may be associated with greater technical difficulty particularly for complex or lengthy procedures. Our study has several limitations that should be considered when interpreting our results. First, our study was conducted at two hospitals in Peshawar, Pakistan, which may limit the generalizability of our findings to other populations and settings. Second, our study was limited to a single year of data collection and did not evaluate long-term outcomes or complications associated with radial and femoral access. Finally, our study did not evaluate patient preference or

satisfaction with the different access sites (Kiemeneij et al., 1997).

In conclusion, our study provides further evidence supporting the safety and efficacy of radial access for diagnostic procedures in patients with peripheral arterial disease. Radial access may offer several advantages over femoral access, including reduced risk of bleeding, faster patient ambulation, and improved patient comfort (Achenbach et al., 2008). However, the access site choice should be individualized based on patient characteristics and specific procedural indications. Further studies are needed to evaluate this population's long-term outcomes and patient satisfaction associated with radial and femoral access.

Conclusion

In conclusion, our study suggests that radial access is a safe and effective alternative to femoral artery for diagnostic and therapeutic procedures in patients with peripheral arterial disease. Radial artery is related with lower rates of significant bleeding and access site difficulties, especially for analytic systems, and may offer benefits like quicker persistent ambulation and worked on quiet solace. In any case, the two access locales had no massive contrast in specialized achievement rates or procedural time for remedial techniques. Our review features the significance of considering elective access destinations in patients with fringe blood vessel sickness and may illuminate clinical dynamic in this populace. Further examinations are expected to assess long haul results and patient fulfillment related to outspread and femoral access in this populace.

Conflict of interest

The authors declared absence of conflict of interest.

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