Surgical Management of Complex Femoral Artery Pseudoaneurysms in the Era of a Minimally Invasive Intervention

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**Objectives:** To study the etiology, clinical presentation and surgical morbidity and mortality of Femoral artery pseudoaneurysms (FAPs) requiring surgery at our institute. We also proposed a classification of FAPs and an algorithm for systematic stepwise surgical decision-making of FAPs based on intraoperative findings.

**Methods:** Patients with FAPs requiring surgical intervention at our institution between January 2016 and April 2019 were included. Data in this study was collected prospectively.

**Results:** A total of 54 (male: 42; female: 12) patients with FAPs who underwent surgical intervention at our institute were included in the study. The mean age of the population was 50.1 years (y). Most of the FAPs were iatrogenic 83.3 %, while 13% were seen in IV drug abusers and 3.7% were traumatic. In iatrogenic, post-percutaneous coronary intervention (PCI) 33.3% was the most common cause, followed by post dialysis access 31.5%, and post surgery in 13%. Common femoral artery (CFA) was the most common involved artery (51.9%) in FAPs in our study. Right side pseudoaneurysms were common than the left side (72.2% vs. 27.8%). Pseudoaneurysm clot culture was positive in 63%. *Staphylococcus aureus* 29.6% was the most common organism isolated. There was a significant correlation between the etiology of pseudoaneurysm and surgery done even though our surgical decision was based on intraoperative findings. Post-dialysis pseudoaneurysms underwent primary rent closure (*P* = .014), post PCI pseudoaneurysms underwent patch repair (*P* = .04), post surgical pseudoaneurysms (*P* = .001) and IV drug abuser (*P* = .041) pseudoaneurysms underwent bipolar ligation. There was a significant difference (*P* = .04) in the age of patients who required amputation after bipolar ligation as compared to those who did not (55y vs. 41y). Mortality in our study was 3.7%, morbidity was mostly wound related, seen in 24% of patients. Re-exploration was needed in 11.1% of patients.

**CONCLUSION:** Even in the era of increasing minimally invasive approaches for various surgical problems, including FAPs, there is still a
role of open surgical pseudoaneurysm repair if indicated and can be done with acceptable morbidity and mortality.

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