# Common Femoral Artery Stenting for Occlusive Disease: Short, Mid, and Long Term Results

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## RESEARCH QUESTION

Do patients with significant lower extremity peripheral arterial occlusive disease (PAD) involving the common femoral artery (CFA) requiring treatment have similar or better patency and safety outcomes with endovascular stent compared to open endarterectomy surgery?

## BACKGROUND

For decades, open surgery was the only treatment for PAD. Such treatment included open endarterectomy and bypass, which had excellent outcomes. However, such surgery was traumatic with long recovery times. In the 1980's-90's, endovascular interventions arose and now have become accepted as standard of care for most vessels in the body. Initial early attempts with stents at the CFA were unsuccessful due to bending and misshaping of the stent. Thus endarterectomy remained the standard of care. However, recent reports using new stent materials and techniques have shown that endovascular interventions can be successful. But these reports had small patient numbers and did not have enough data to convincingly show the safety and efficacy of CFA stenting. We report 12 years of data with hundreds of patients from many surgeons to add to the literature to help settle this debate.
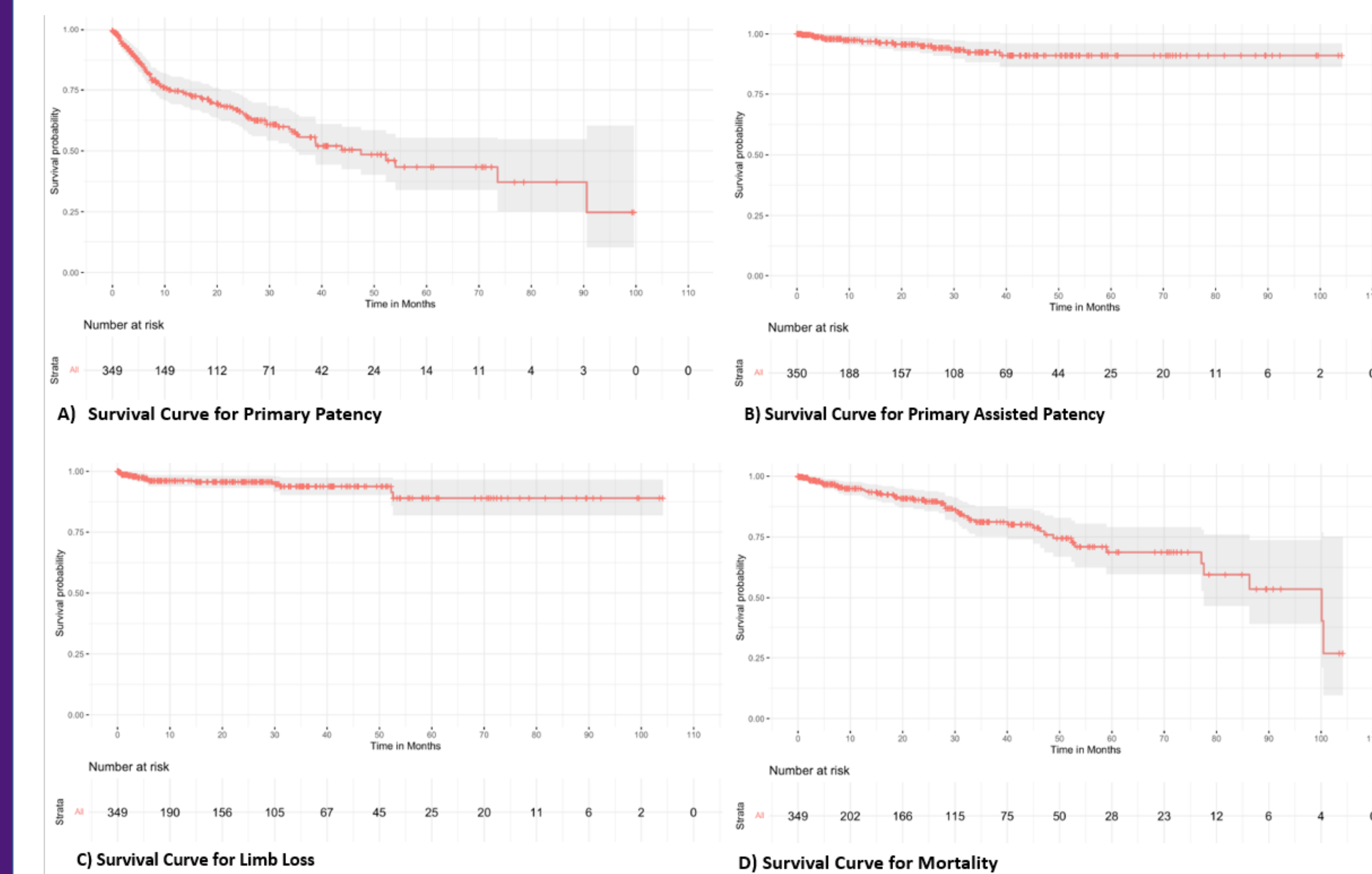
## METHODS

This is a retrospective chart review study of all consecutive patients with CFA occlusions treated by 15 surgeons in Dallas and Los Angeles from 2012-2021. Patient were evaluated within 30 days, 3, 6, 9, and 12 months and yearly thereafter. We look specifically for Rutherford clinical classification pre- and post-op, postoperative complications, and patency rates. Primary endpoint will be patency. Secondary endpoints will be infection and complication rates, length of hospital stay, and post-operative recovery times. We include comorbidities, such as diabetes mellitus, high blood pressure, and smoking as there may be confounding factors that might explain differences. We analyzed patency using Kaplan-Meier Life tables and ANOVA analysis. The measurements used to compare outcomes include ankle-brachial index (ABI) readings, duplex ultrasound of lower arteries and angiogram outcomes. We also compare our results to those in the literature.

We have found that endovascular treatment of CFA lesions with self-expanding nitinol stents is safe and effective treatments for PAD. Additionally, we report that short, mid, and long term patency results are good and comparable to open modalities.
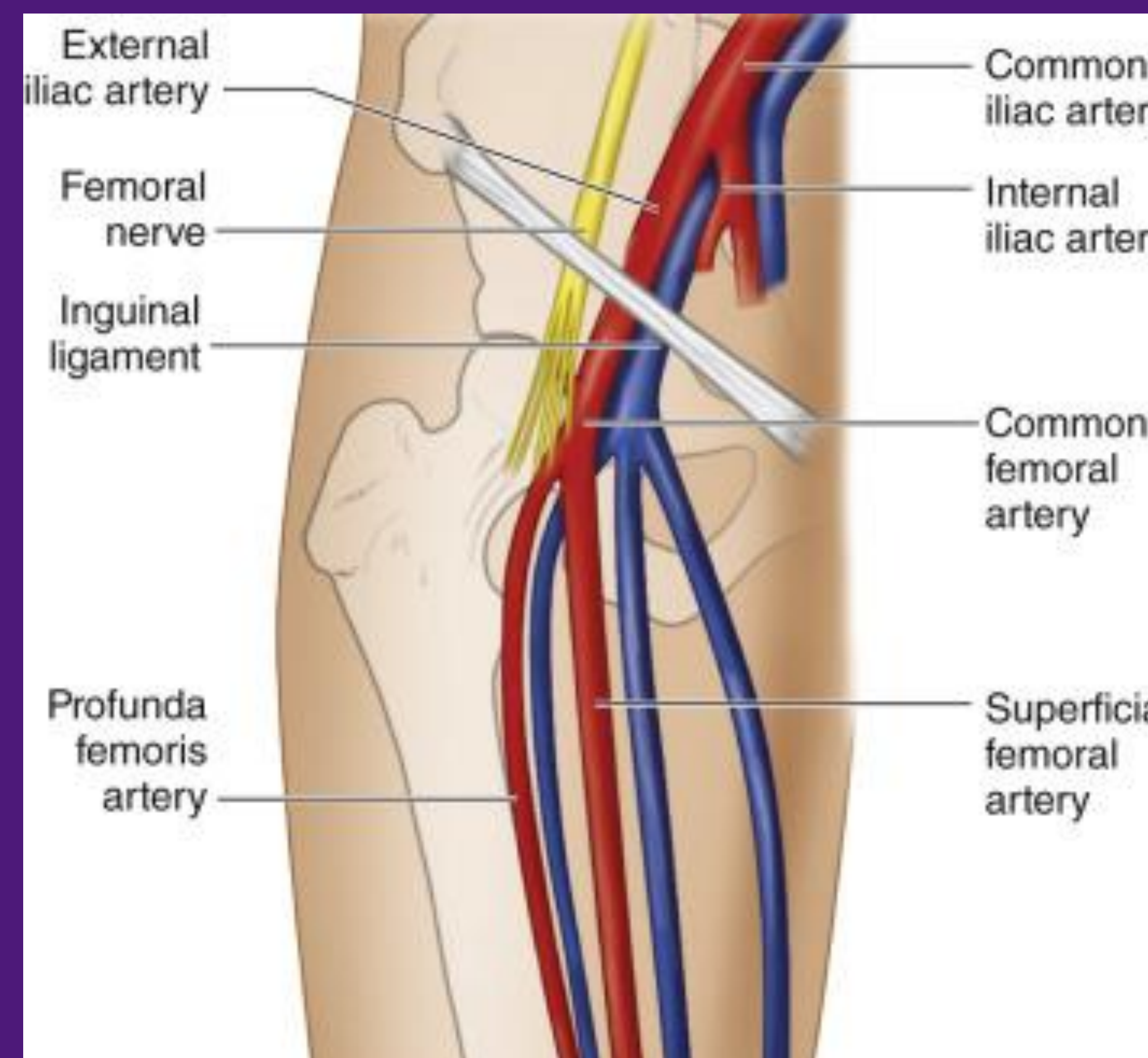
## RESULTS

Primary patency was 72.5% and primary assisted patency was 95.7%. 12 limbs (3.9%) thrombosed with 4 failures, achieving a secondary patency of 99.1%. There were 13 (3.7%) 30 day adverse events (see table). Long-term complications include: 2 stent thrombosis, 2 pseudoaneurysms, 1 stent dissection, 1 stent migration, and 1 hematoma >30 days after the procedure. Limb-loss was 4.3% with 8 BKA and 7 AKA out of the 349 treated limbs. Previous myocardial infarction correlated to loss of primary patency (p = .002). Ulcer/gangrene was 1.8x more likely to lose primary patency compared to claudication (p =.035). Ulcer/gangrene (p=.045) and rest pain (p=.007) compared to claudication were 9.5x and 4.9x more likely to have limb loss, respectively. Survival was 70% up to 75 months. Our results show that CFA stenting is safe and effective and provides durable long-term patency, limb salvage, and survival.



A) Survival Curve for Primary Patency
B) Survival Curve for Primary Assisted Patency
C) Survival Curve for Limb Loss
D) Survival Curve for Mortality

## FUTURE DIRECTIONS

With any attempt at changing the common treatment method, we will continue to evaluate the long term outcomes of our stented patients. Additionally, there is some debate as to whether stenting of the CFA causes increased occlusion of further distal vessels. We plan to investigate the outcomes of these vessels and their occlusion rates.