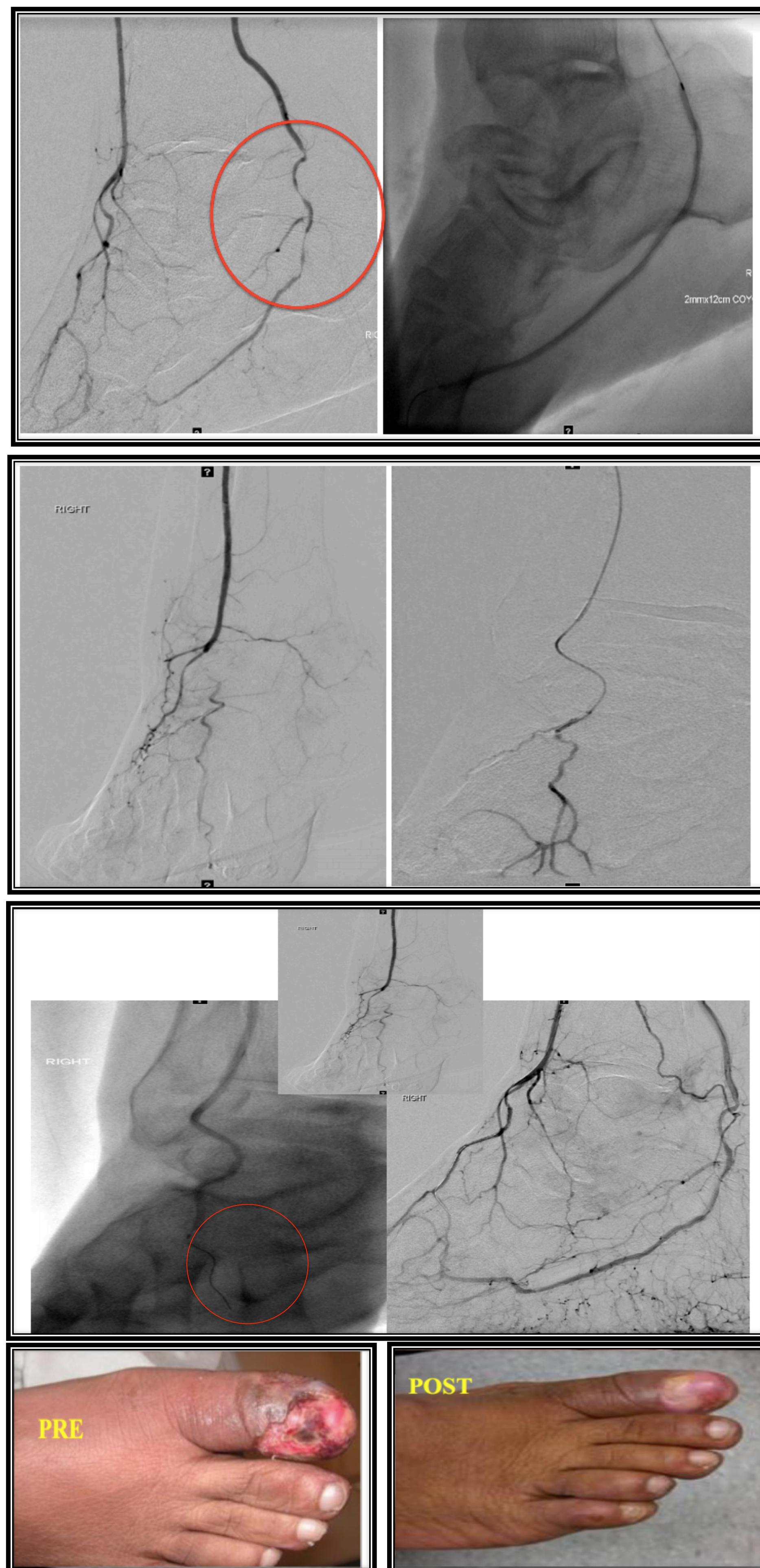


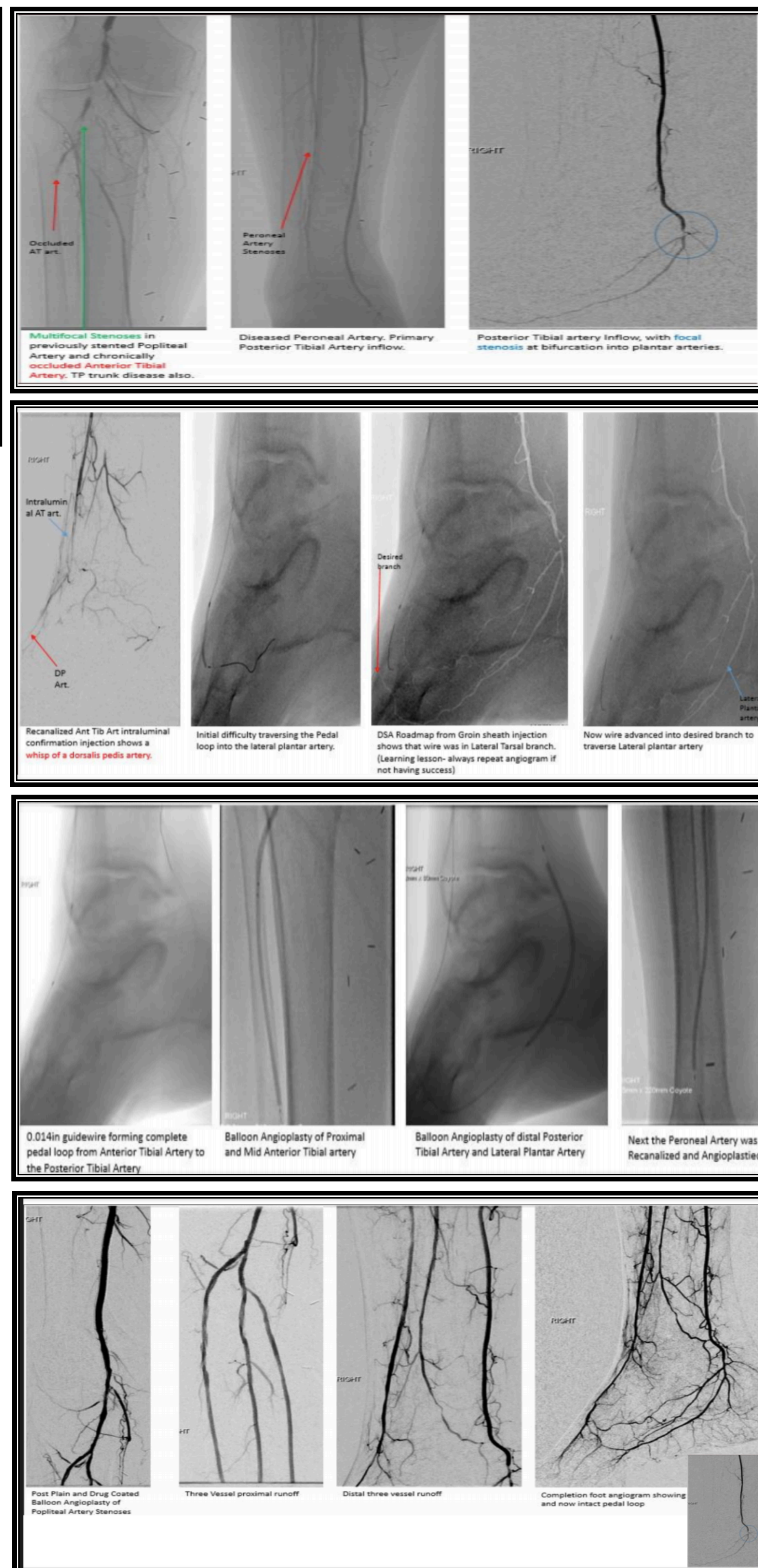
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CASE 1



CASE 2



ABSTRACT

Critical Limb Ischemic patients that undergo major amputation have a 5-year mortality rate that is >50%. Revascularization can significantly improve wound healing and limit major amputations. Many occlusions are difficult to cross using standard methods. Subintimal Arterial Flossing with Antegrade-Retrograde Intervention (SAFARI) is a minimally invasive endovascular technique used to restore blood flow to arteries with occlusions that cannot be crossed in the antegrade direction; or there is inability to re-enter the true lumen of the artery¹. Historically CLI revascularization focused on the superficial femoral and popliteal arteries. However, with SAFARI approach, the focus now is to restore direct blood flow to the pedal arteries, promoting chronic ischemic wound healing and a decrease in major amputations. This addition is a powerful tool that podiatrists should be aware of and seek for their patients.

LITERATURE

The SAFARI technique, initially introduced by Spinoza et al³ in 2005, is most helpful for patients with chronic critical limb ischemia (CLI), to improve wound healing. These patients tend to also have diabetes, end stage renal disease, and previous myocardial infarctions, amongst other co-morbidities⁴. To optimize chronic foot ulcer healing, Dr. Madassery, of Rush University Medical Center and others perform complex revascularization, many in patients considered having “no options”. They have also been using SAFARI approach to restore pedal blood flow, more specifically to the dorsalis pedis, plantar foot branches and tarsal arteries. Limb preservation outcomes (the main goal) have been significant and steadily increasing. With initial diagnostic tools and noninvasive imaging such as ankle-brachial index and ultrasound, and referrals to such interventionalists, we can provide more effective treatments to further limb salvage.

STATEMENT OF PURPOSE

Our aim is to introduce pedal SAFARI as an effective and at times critical wound care treatment modality.

LEVEL OF EVIDENCE

Level IV, Therapeutic

METHODS

Contralateral antegrade access is most common, obtained through the common femoral artery⁵. In an “up and over” approach, guide wires are threaded through to the vessels in the affected leg until the suspected occlusion is crossed. If the occlusion cannot be transversed or the true lumen of the vessel cannot be re-entered, an artery in the tibials (AT/PT/peroneal) or foot (i.e. DP) is accessed. A small guidewire is threaded retrograde across the occlusion and connected with antegrade access. This creates the “floss”. Once this is achieved, a rail is now present to perform angioplasty, atherectomy, or stent placement to establish revascularization. Advanced interventionalists such as Dr. Madassery do not use sheaths in the retrograde access, which decreases injury to the distal vessels, and eases hemostasis.

RESULTS

- A successful case is considered when there is unobstructed flow and angiographic blush of contrast at the wound(s) site that we are trying to heal.
- Technical success rates are in the 95% range, which may take 1-3 interventions to reach.
- Ulcer healing can take 3-12 months depending on the degree of wound. Many require minor surgical debridement, toe amputations, and sometimes a TMA.
- Major amputation (BKA, AKA) free survival is around 85% based on review of patients that were compliant with follow-up.

CONCLUSIONS

- RE-vascularization of the pedal arteries along with optimized wound care can play a significant role in healing foot wounds. Success rates seen by Dr. Madassery are higher than success rates seen in other studies where patient’s had similar co-morbidities of DM, CAD, HTN, ESRD, SLE⁴.
- One of the main concerns with this procedure is “Trash Foot” which can develop. In the right hands, the use small embolic protection filter devices, diamond tipped atherectomy, and recently, laser arthroectomy can help to prevent emboli in the smaller arteries of the toes.
- A multidisciplinary approach to chronic wound treatment plays an important role in obtaining the best outcomes for limb preservation.

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