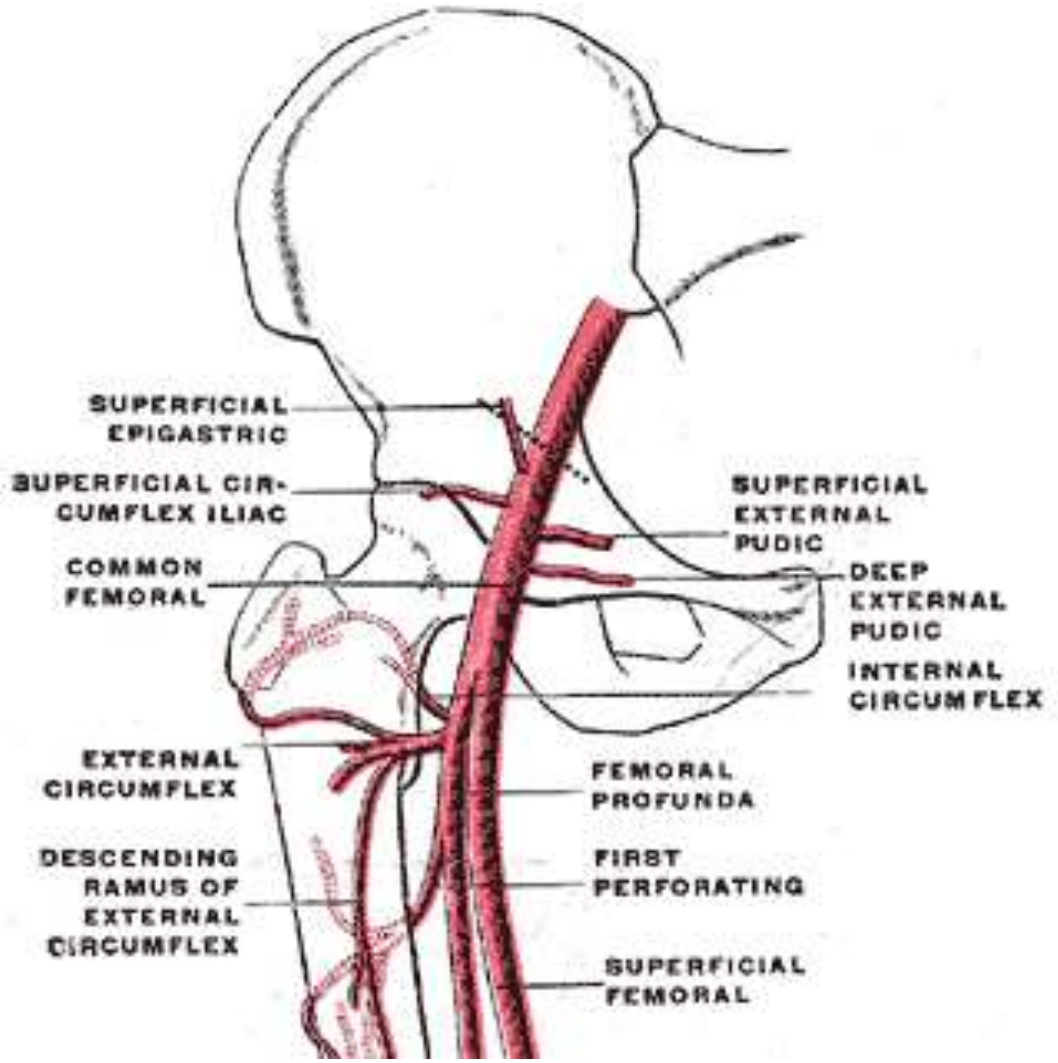
Endovascular stent treatment of common femoral artery (CFA): When and how

Montero-Baker, Miguel

Associate Professor of Surgery

Division of Vascular and Endovascular Surgery

Baylor College of Medicine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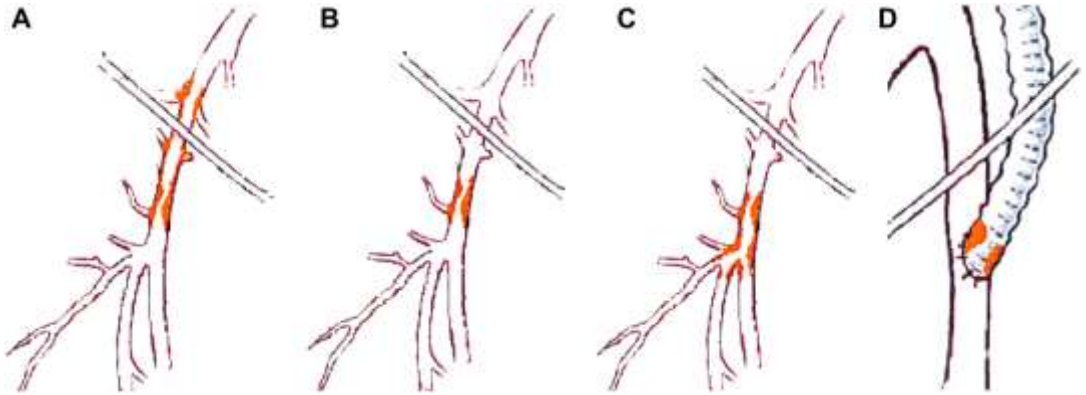

A
B
C
D

Current State of CFA Care

Surgery continues to be SOC

Vascular interventions of the groin carry higher risk

Wound VAC (PICO system) have improved surgical outcomes

Patients who are high risk for surgery can be pre-identified

Stenting or Surgery for De Novo Common Femoral Artery Stenosis

Yann Gouëffic, MD, PhD,[a,b,c] Nellie Della Schiava, MD,[d] Fabien Thaveau, MD, PhD,[e] Eugenio Rosset, MD, PhD,[f] Jean-Pierre Favre, MD, PhD,[g] Lucie Salomon du Mont, MD,[h] Jean-Marc Alsac, MD, PhD,[i] Réda Hassen-Khodja, MD,[j] Thierry Reix, MD,[k] Eric Allaire, MD, PhD,[l] Eric Ducasse, MD, PhD,[m] Raphael Soler, MD,[n] Béatrice Guyomarc'h,[o] Bahaa Nasr, MD[p]

ABSTRACT

OBJECTIVES The TECCO (Traitement des Lésions Athéromateuses de l'Artère Fémorale Commune par Technique Endovasculaire Versus Chirurgie Ouverte [Endovascular Versus Open Repair of the Common Femoral Artery]) trial is a randomized comparison of safety and efficacy of stenting versus open surgery for de novo common femoral artery (CFA) stenosis.

BACKGROUND Surgery for CFA lesions is considered effective and durable. Despite the widespread use of endovascular repair for infrainguinal disease, the value of this procedure for such lesions is uncertain.

METHODS From February 23, 2011, to September 5, 2013, a total of 117 patients with de novo atherosclerotic lesions of the CFA were randomly assigned to undergo surgery (n = 61) or stenting (n = 56). The main exclusion criteria were asymptomatic disease, restenosis, and thrombosis of the CFA. The primary outcome was the morbidity and mortality rate within 30 days. This includes any general complications or local complications that caused or prolonged hospitalization and/or re-intervention, lymphorrhea of more than 3 days, and post-operative paresthesia that required drugs. The median duration of follow-up was 2 years (interquartile range [IQR]: 19.8 to 24.9 years).

RESULTS Primary outcome events occurred in 16 of 61 patients (26%) in the surgery group and 7 of 56 patients (12.5%) in the stenting group (odds ratio: 2.5; 95% confidence interval: 0.9 to 6.6; p = 0.05). The mean duration of hospitalization was significantly lower in the stenting group (3.2 ± 2.9 days vs. 6.3 ± 3 days; p < 0.0001). At 24 months, the sustained clinical improvement, the primary patency rate, and the target lesion and extremity revascularization rates were not different in the 2 groups.

CONCLUSIONS In patients with de novo atherosclerotic lesions of the CFA, the perioperative morbidity and mortality rate was significantly lower among patients who underwent endovascular therapy by stenting compared with surgery, whereas clinical, morphological, and hemodynamic outcomes were comparable at mid-term. (Traitement des Lésions Athéromateuses de l'Artère Fémorale Commune par Technique Endovasculaire Versus Chirurgie Ouverte [Endovascular Versus Open Repair of the Common Femoral Artery] [TECCO]; NCT01353651) (J Am Coll Cardiol Intv 2017;10:1344–54)

FIGURE 1 Randomization and Follow-Up

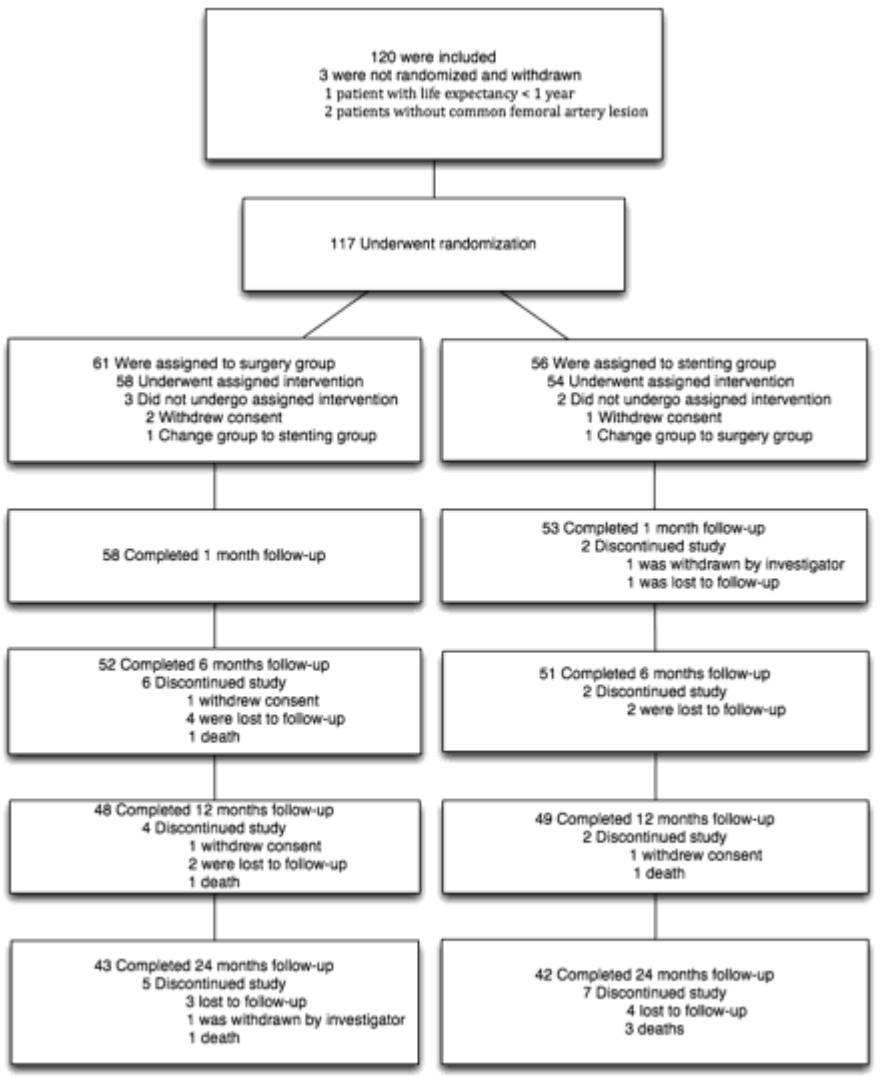
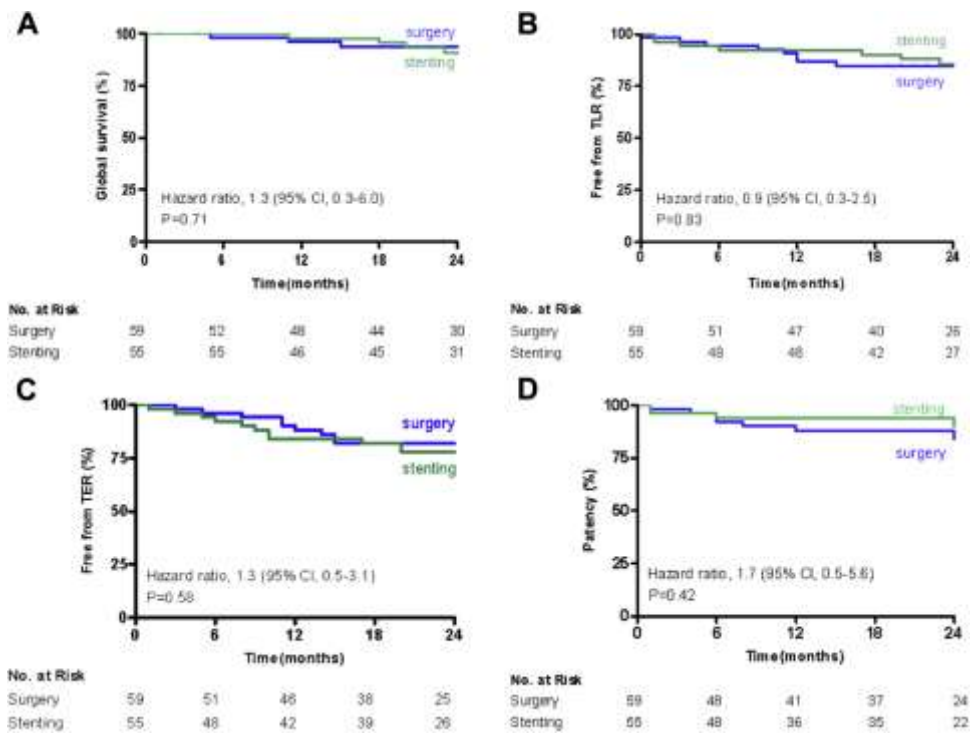


TABLE 3 Primary Outcome and Components of the Primary Endpoint, According to Treatment Group*

	Intent-to-Treat Analysis			Per Protocol Analysis		
	Surgery (n = 61)	Stenting† (n = 56)	p Value	Surgery (n = 58)	Stenting (n = 47)	p Value
General complications						
Death	0 (0)	0 (0)		0 (0)	0 (0)	
Stroke	0 (0)	1 (1.8)		0 (0)	1 (2.1)	
Myocardial infarction	0 (0)	0 (0)		0 (0)	0 (0)	
Major amputation	0 (0)	0 (0)		0 (0)	0 (0)	
Local complications						
Hematoma	3 (5)	0 (0)		3 (5)	0 (0)	
Thrombosis	0 (0)	1 (1.8)		0 (0)	1 (2.1)	
Lymphorrhea	2 (3.2)	0 (0)		2 (3.4)	0 (0)	
Delayed wound healing	10 (16.4)	0 (0)		10 (17.2)	0 (0)	
False aneurysm	0 (0)	0 (0)		0 (0)	0 (0)	
Arteriovenous fistula	0 (0)	0 (0)		0 (0)	0 (0)	
Paresthesia	4 (6.5)	0 (0)		4 (6.9)	0 (0)	
Local infection	3 (5)	1 (1.8)		3 (5.1)	1 (2.1)	
Vascular perforation	0 (0)	1 (1.8)		0 (0)	1 (2.1)	
Primary endpoint	16 (26)	7 (12.5)†	0.05	16 (26)	3 (6.4)	0.005

Values are n (%). *Patients may have had more than 1 event. †In the stenting group, 1 patient did not have the stenting procedure, and 2 patients discontinued the study at 1-month follow-up (1 was withdrawn by the investigator and 1 was lost to follow-up). For these 3 patients, we assigned a positive primary endpoint.

FIGURE 3 Kaplan–Meier Estimates



Kaplan-Meier estimates of the rates of death from any cause, freedom from target lesion revascularization, freedom from target extremity revascularization, and primary patency are shown. **(A)** Death from any cause. **(B)** Freedom from target lesion revascularization. **(C)** Freedom from target extremity revascularization. **(D)** Primary patency. CI = confidence interval; TER = target extremity revascularization; TLR = target lesion revascularization.

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Combined use of directional atherectomy and drug-coated balloon for the endovascular treatment of common femoral artery disease: immediate and one-year outcomes.

Cioppa A[1], Stabile E, Salemme L, Popusoi G, Pucciarelli A, Iacovelli F, Arcari A, Coscioni E, Trimarco B, Esposito G, Tesorio T.

Author information

Abstract

AIMS: Surgical endarterectomy is the therapy of choice for atherosclerotic common femoral artery (CFA) obstruction. Recently, some large single-centre series have shown encouraging results for the percutaneous treatment of CFA obstructions. The purpose of this study was to evaluate the safety, feasibility, and one-year efficacy of the endovascular treatment of CFA obstructions with combined use of directional atherectomy (DA) and a paclitaxel-coated balloon (DCB).

METHODS AND RESULTS: Between January 2012 and July 2014, 30 consecutive patients with severely calcified obstructions of the common femoral artery were treated in our centre using DA followed by DCB dilatation. Provisional stenting was allowed in the case of a suboptimal result. Twenty cases (66%) were isolated CFA interventions, whereas five (17%) and five (17%) also involved inflow and outflow vessels, respectively. Chronic total CFA occlusions (CTO) were recanalised in six cases (20%). Procedural success was achieved in all cases; stenting was needed in three cases (10%). At one year, restenosis and target lesion revascularisation were observed in two of 30 (6.6%) and one of 30 (3.3%) patients, respectively. The secondary patency rate was 96.7%.

CONCLUSIONS: This single-centre prospective study suggests that the combined use of DA and DCB is a safe and effective alternative to surgery, a treatment option for common femoral artery lesions and provides encouraging results in this setting.

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Endovascular treatment for the common femoral artery: is there a challenger to open surgery?

Deloose K[1], Martins I[2], Neves C[2], Callaert J[3].

Author information

Abstract

Common femoral artery (CFA) atherosclerotic lesions currently remain one of the last limitations for adoption of endovascular repair as the first-line treatment. The bulky, eccentric, heavily calcified character of the CFA plaques, frequent involvement of the femoral bifurcation, easy surgical accessibility and last but not least, favorable long-term outcomes still make CFA disease treatment part of the surgical domain. In the last 5 years, improvement of the endovascular equipment and technical skills of the operators have led to an increase in percutaneous CFA procedures. Especially the vascular mimetic implant Supera Peripheral Stent system (Abbott Vascular), with its extreme crush resistance (if correctly implanted), seems to be an ideal tool to deal with eccentric calcified plaques, crush risk and maintaining access possibilities. The multicentric, prospective, single arm VMI-CFA Trial evaluates the outcome of treatment of symptomatic (Rutherford 2-4) CFA stenotic or occlusive lesions with the Supera Peripheral Stent System. A 6-month cumulative primary patency rate of 100% is noticed, up to 210 days. The cumulative freedom from TLR rate is 100%. Four patients died, not procedure or device related. From a clinical point of view, a tremendous switch from Rutherford 2-4 towards Rutherford 0-1 happened. No procedure nor device related adverse events are noticed. These short-term data confirm the safety and feasibility of an endovascular approach with the Supera stent to the "no-stent zone" CFA. Of course 12- and 24-month data are essential to bring more clarification in this interesting field.

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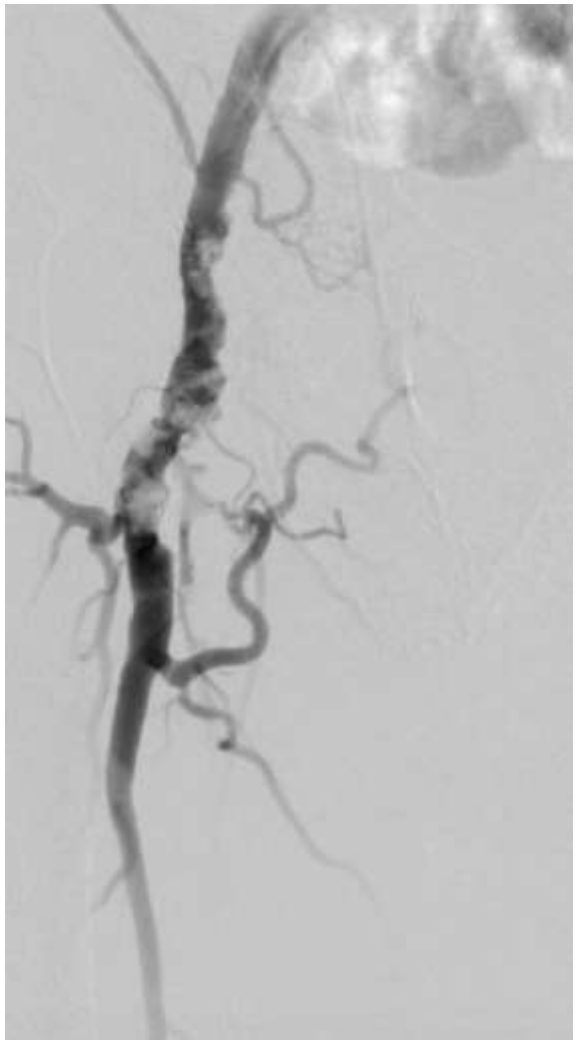

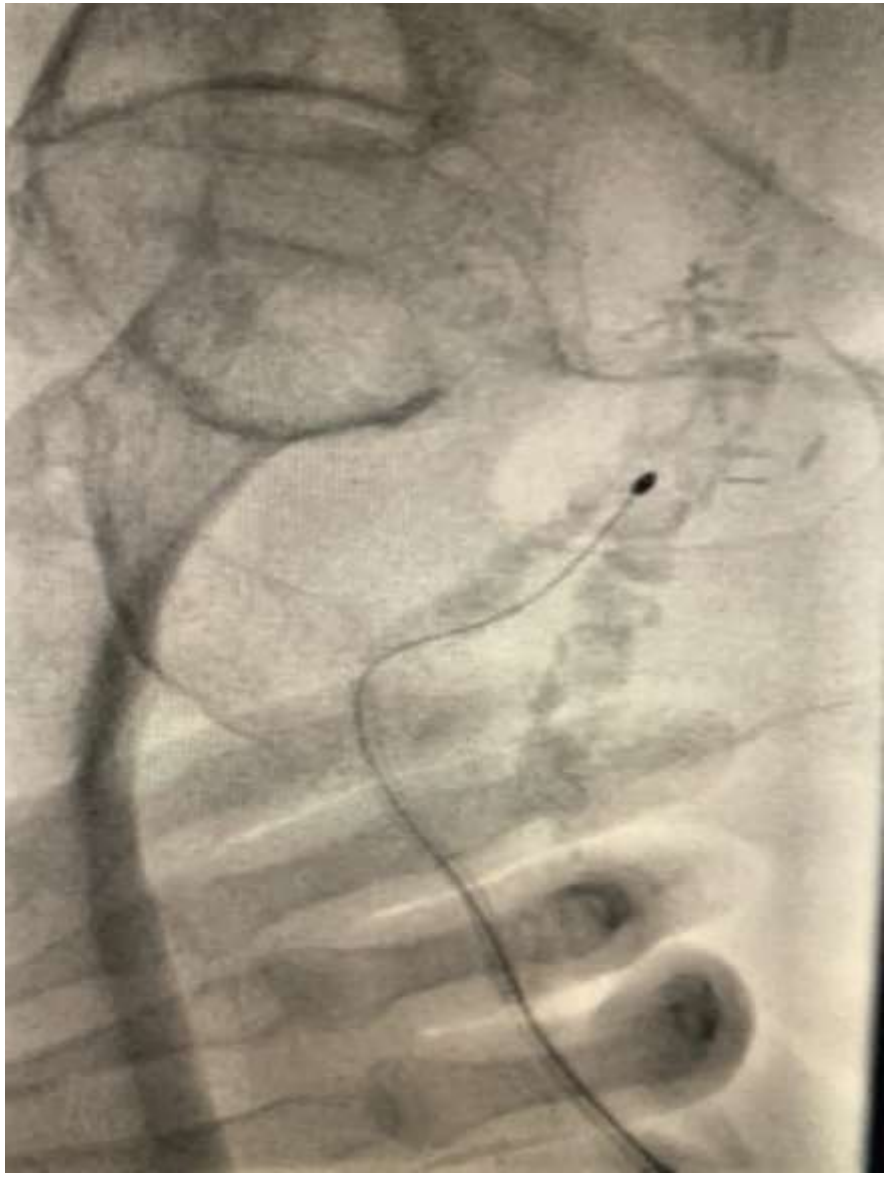

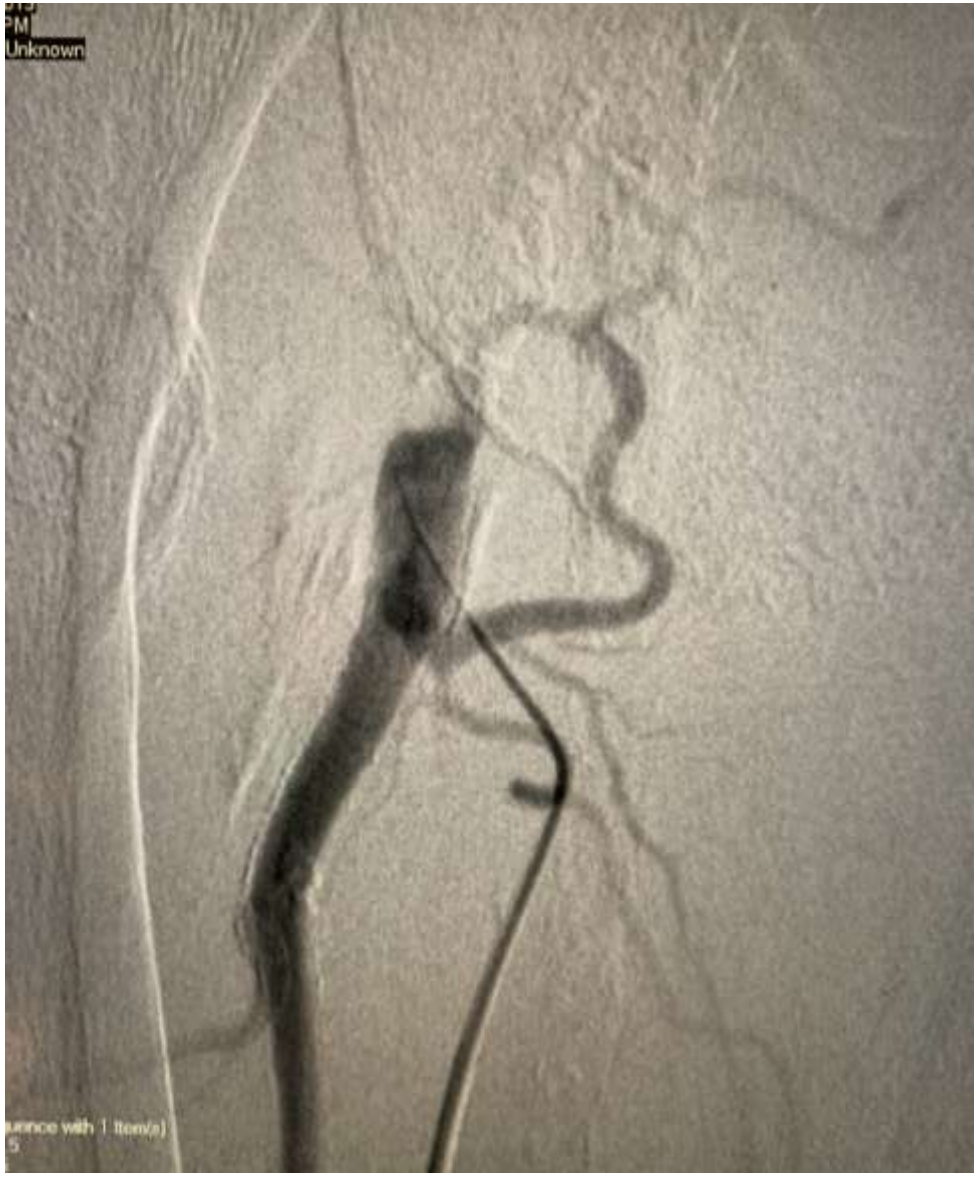
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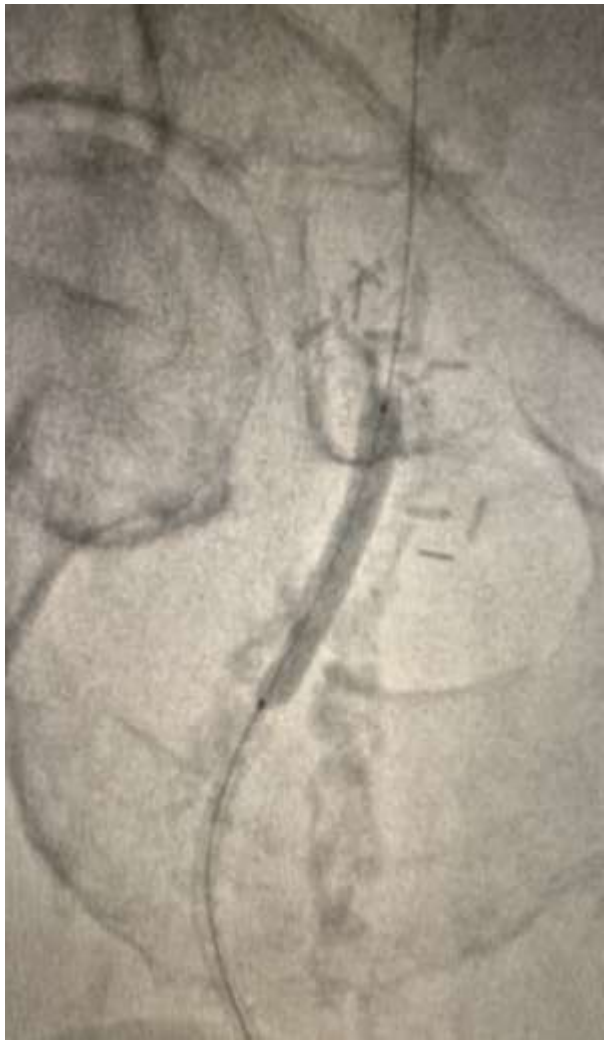

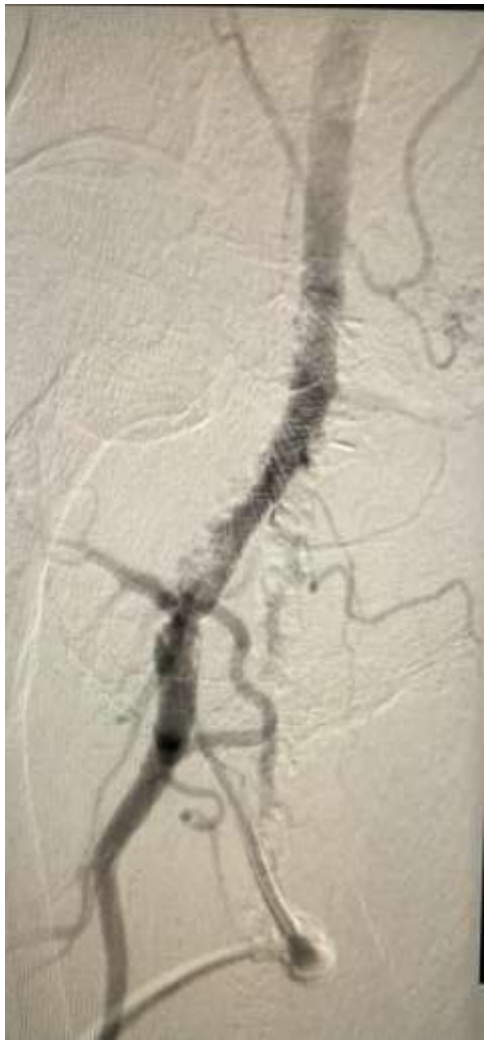

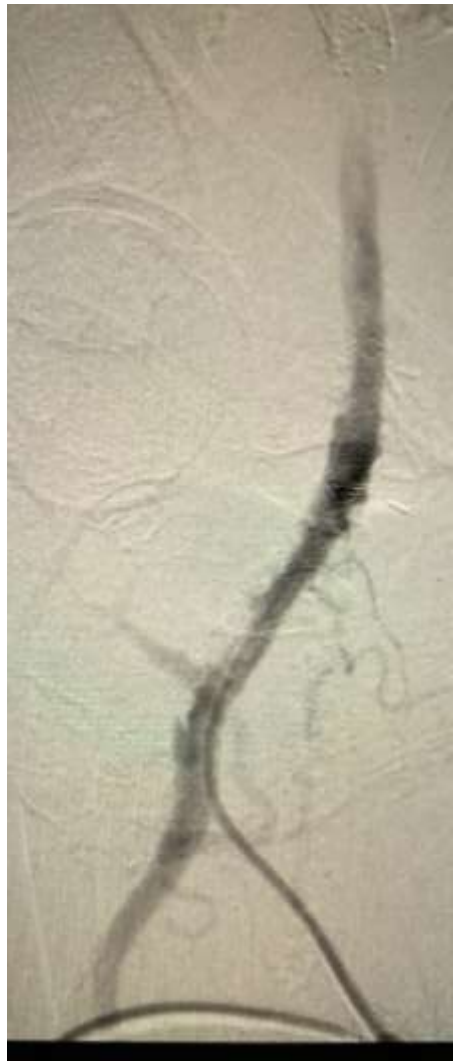

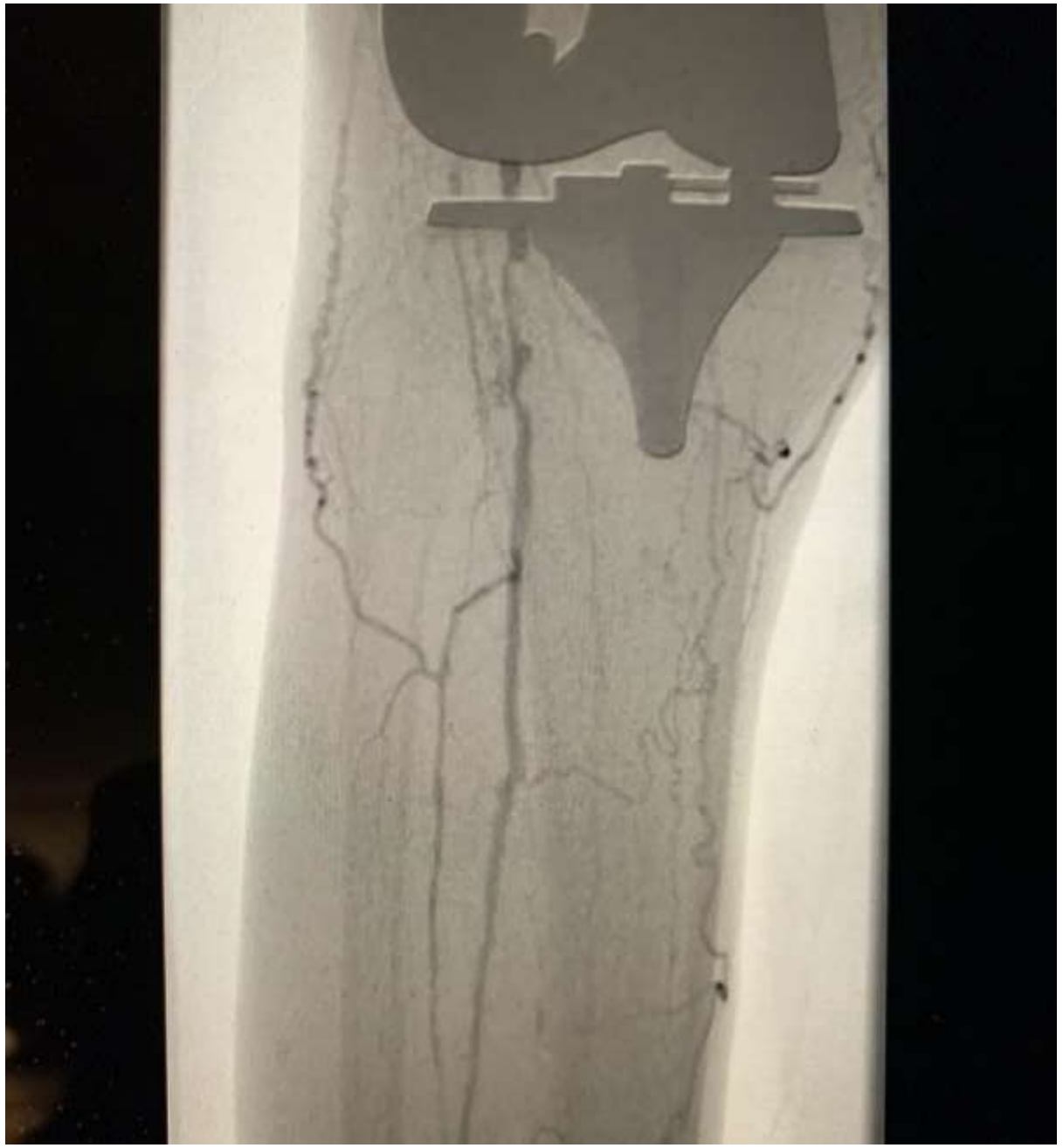

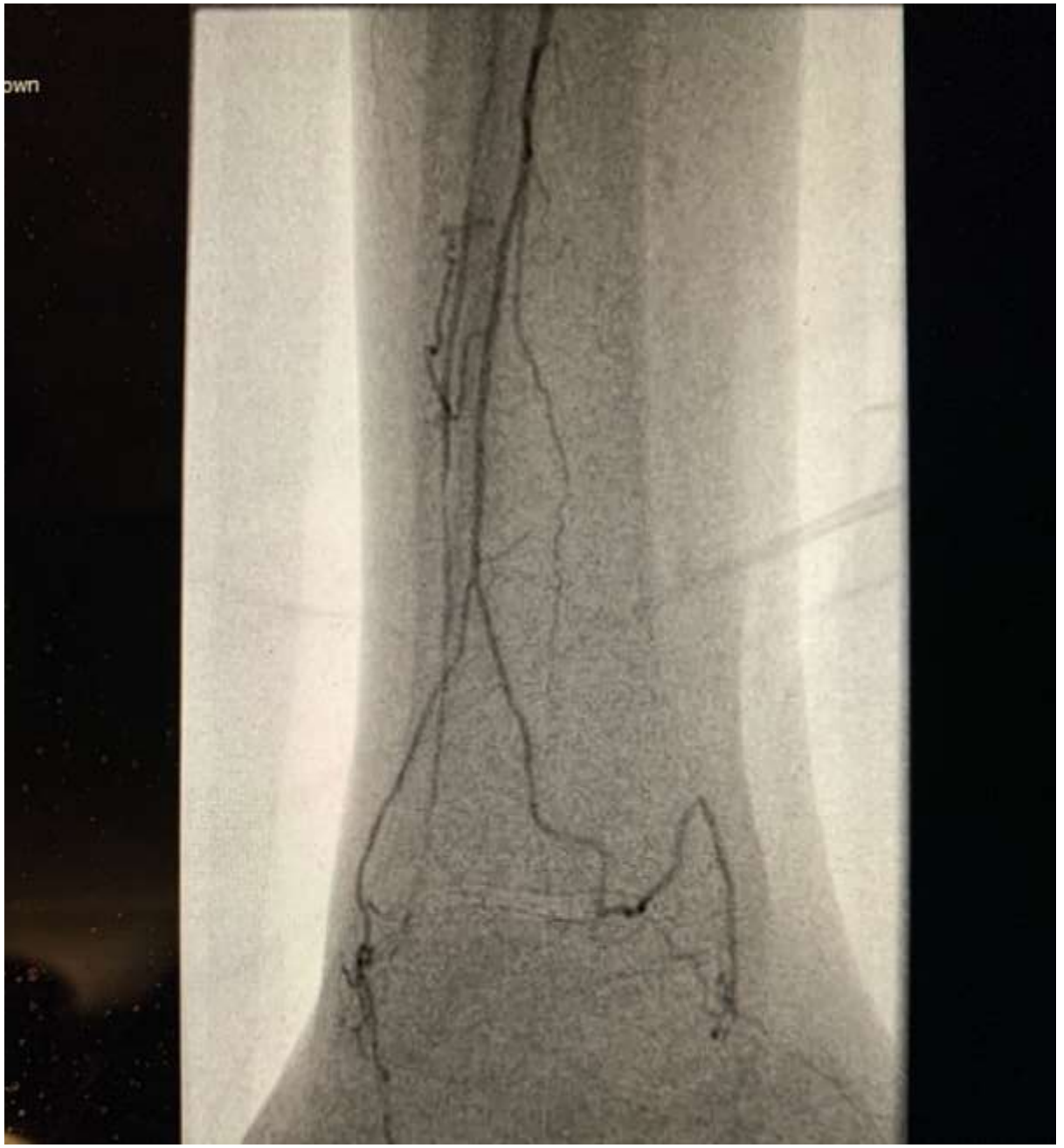

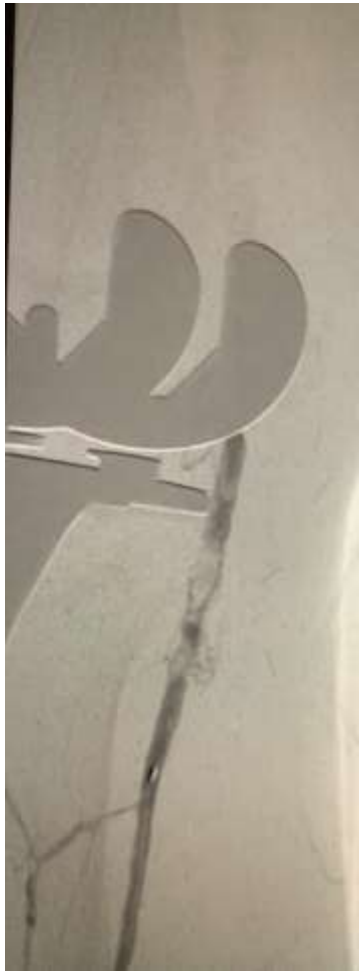
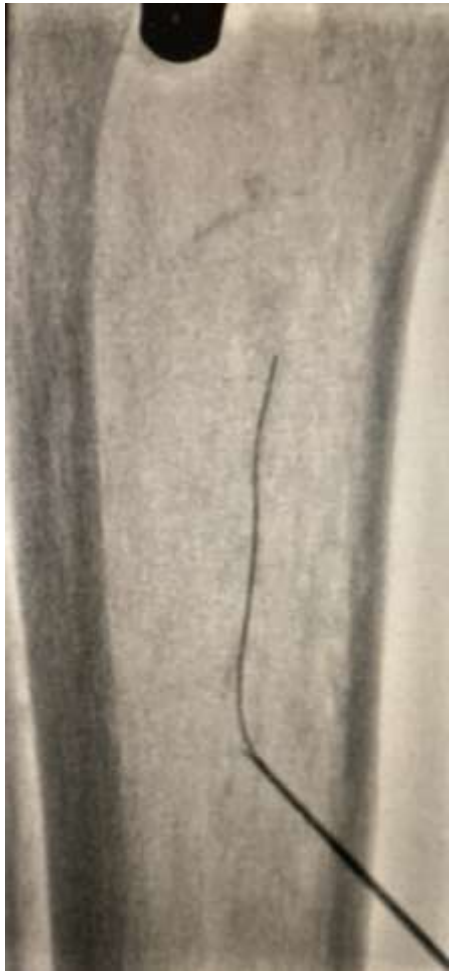
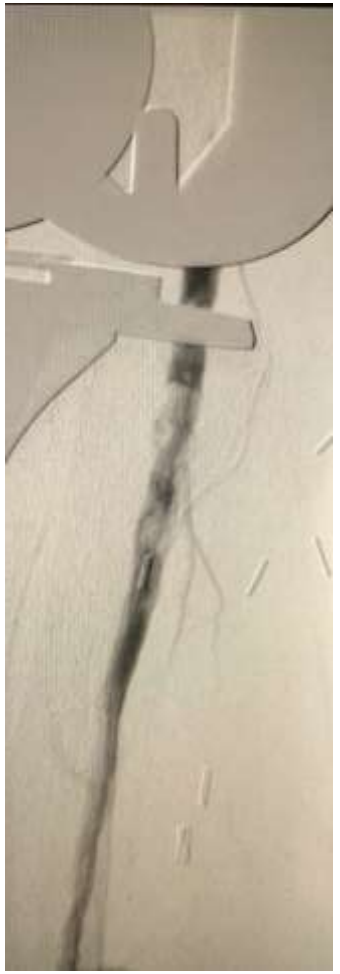
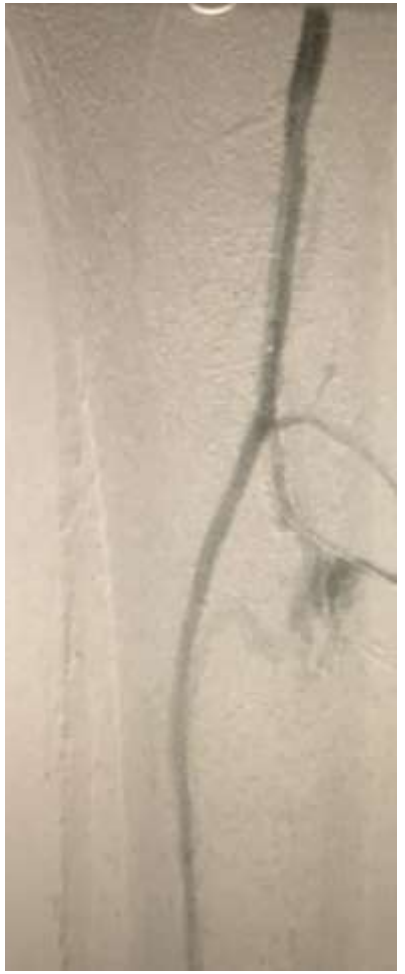

Conclusions

- Emerging data regarding safety and efficacy of percutaneous approach to CFA disease is growing
- As is usual with this space, multiple tools and small data sets limit the wide spread acceptance
- For now, there seems to be enough support to treat high-risk surgical patients via endovascular therapy
- Analysis of the complexity should lead the way to personalized tools, but caution is advised about potential of distal embolization