



Atherectomy with Drug-Eluting Balloon for Common Femoral Artery Occlusive Disease: 4-Year Experience

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Disclosures

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Objectives

- Despite 17% of local and 15% of systemic complications¹, gold standard treatment for occlusive lesions of the common femoral artery used to be endarterectomy.
- In recent years, interest for endovascular treatment of the common femoral artery has been increasing².
- Stenting of the common femoral artery is possible^{2,3} but we believe it is better to avoid it. Calcified arterial lesions are not well treated with drug-coated balloons (DCB) alone⁴.

¹ Chaney M, Joshi G, Serrato JC, et al. Morbidity and mortality of common femoral artery endarterectomy. J Vasc Surg 2024;80(1):199-203.

² Deloose K, Martins I, Neves C, Callaert J. Endovascular treatment for the common femoral artery: is there a challenger to open surgery? J Cardiovasc Surg. 2019;60:8-13.

³ Gouëffic Y, Della Schiava N, Thaveau F, Rosset E, Favre JP, Salomon du Mont L, Alsac JM, Hassen-Khodja R, Reix T, Allaire E, Ducasse E, Soler R, Guyomarc'h B, Nasr B. Stenting or Surgery for De Novo Common Femoral Artery Stenosis. JACC Cardiovasc Interv. 2017;10:1344-1354.

⁴ Fanelli F, Cannavale A, Gazzetti M, Lucatelli P, Wlderk A, Cirelli C, d'Adamo A, Salvatori FM. Calcium burden assessment and impact on drug-eluting balloons in peripheral arterial disease. Cardiovasc Interv Radiol. 2014;37:898-907.

Objectives

- Atherectomy followed by DCB angioplasty do better than atherectomy followed by plain old balloon angioplasty⁵.
- Our aim was to evaluate vessel preparation with rotational atherectomy followed by DCB angioplasty to treat common femoral artery calcified occlusive disease.

⁵ Shammass NW, Shammass GA, Jones-Miller S, Shammass WJ, Bou-Dargham B, Shammass AN, Banerjee S, Rachwan RJ, Daher GE. Long-term outcomes with Jetstream atherectomy with or without drug coated balloons in treating femoropopliteal arteries: A single center experience (JET-SCE). Cardiovasc Revasc Med. 2018;19(7 Pt A):771-777.

Methods

- Registry
- In one Belgian center: University Hospital of Liège
- Start in June 2021
- Inclusion of all **heavy calcified** common femoral artery stenosis and chronic total occlusions
- Percutaneous treatment: rotational atherectomy followed by DCB angioplasty
- Exclusion: embolic occlusive disease, hybrid procedure (endovascular and open surgery), critical acute ischemia
- Primary end point: freedom from target lesion revascularization (TLR)

Results

Between June 2021 and July 2025, 89 patients including 20 with bilateral lesions were treated

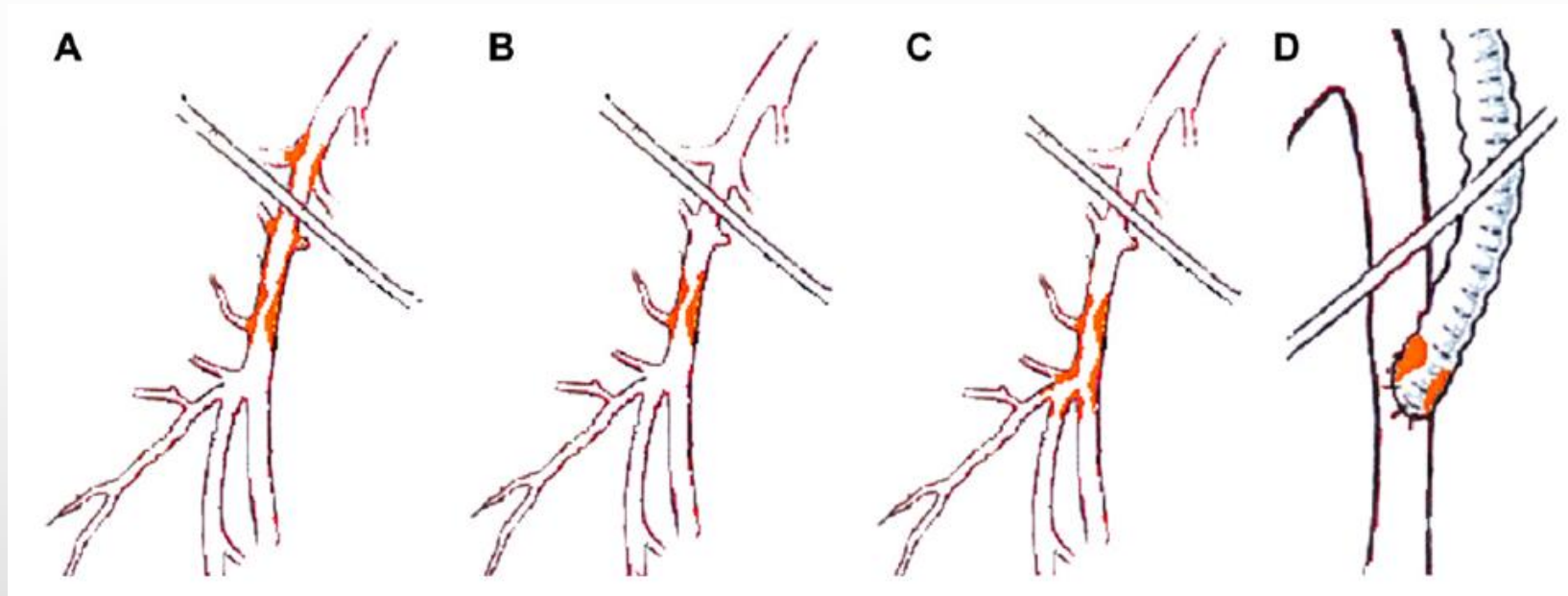
procedures	109
men	68
women	21
mean age	72,6 years old (52-93)
arterial hypertension	83 % (74/89)
smoking or stopped < 3 years	54 % (48/89)
diabetes (all types)	42 % (37/89)
dyslipidemia (all types)	85 % (76/89)
chronic kidney disease	40 % (36/89 with 3 dialysis)
Rutherford stage 1-2-3	84 % (92/109)
Rutherford stage 4-5-6	16 % (17/109)
mean ankle-brachial index	0,74 (0,2-1,4)
chronic total occlusion	8 % (9/109)
mean lesion length	3,75 cm (1,5-8)
simultaneous angioplasties	60,5 % (66/109)

Results

- All procedures were performed under local anesthesia, except 2 under general anesthesia
- 81 (74 %) were antegrade with 71 (65 %) contralateral femoral and 10 (9 %) upper limb punctures, and 28 (26 %) were retrograde with ipsilateral superficial femoral puncture
- No filter was used
- Technical success rate was 100% with 3 deep femoral retrograde punctures
- No arterial perforation was observed
- No bail-out stent was needed
- One asymptomatic embolization in a deep femoral artery side branch

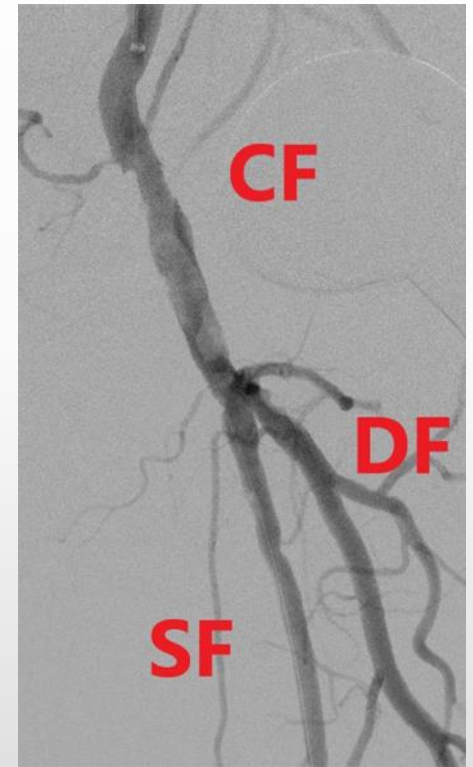
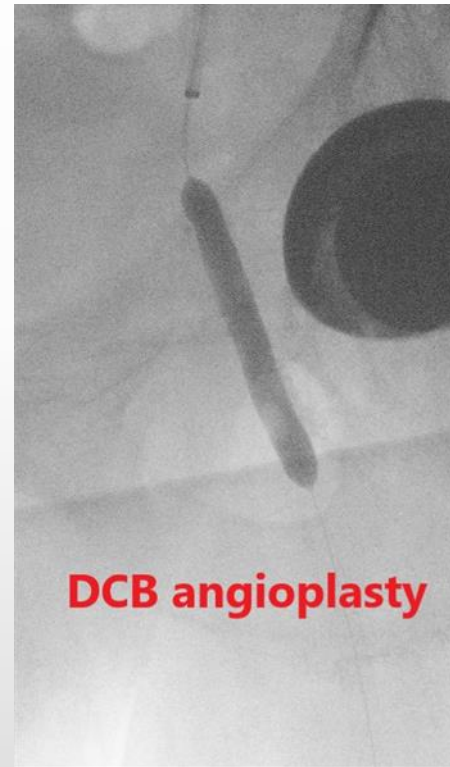
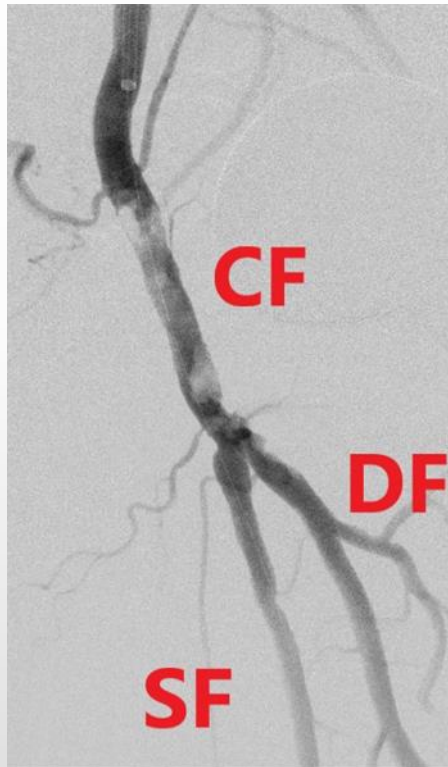
Results

- All types of the Azéma classification⁶ for common femoral artery occlusive disease could be treated



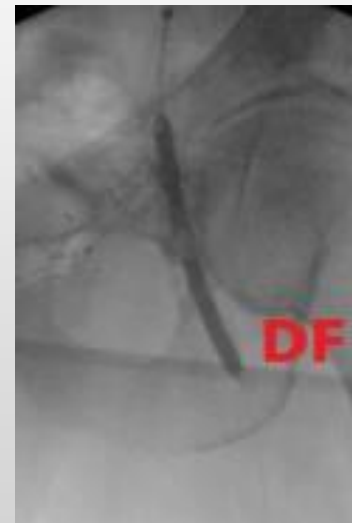
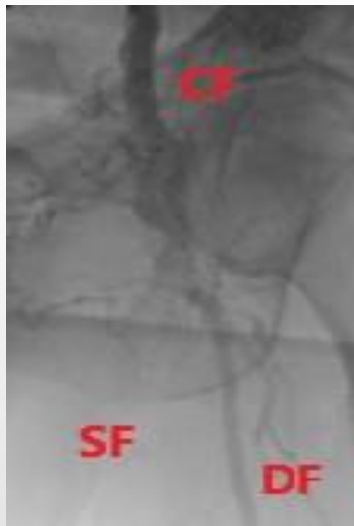
⁶ Azéma L, Davaine JM, Guyomarch B, Chaillou P, Costargent A, Patra P, Gouëffic Y. Endovascular repair of common femoral artery and concomitant arterial lesions. Eur J Vasc Endovasc Surg. 2011;41(6):787-93.

Results



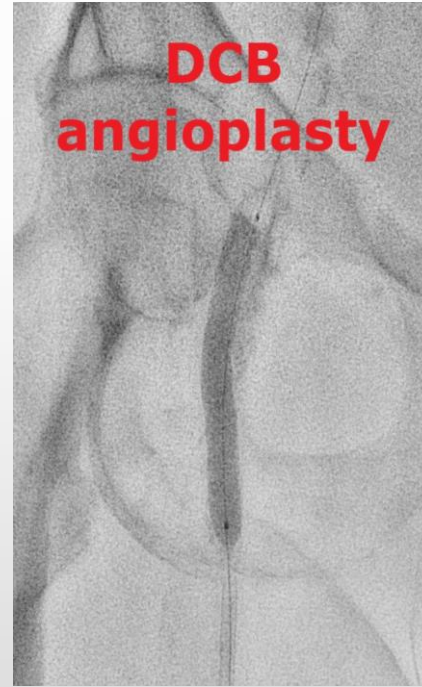
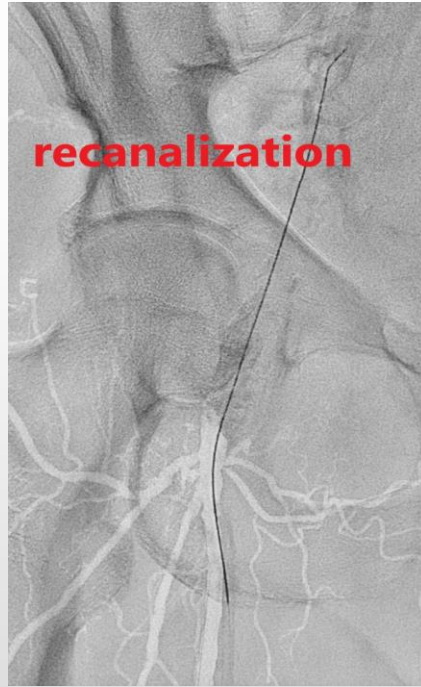
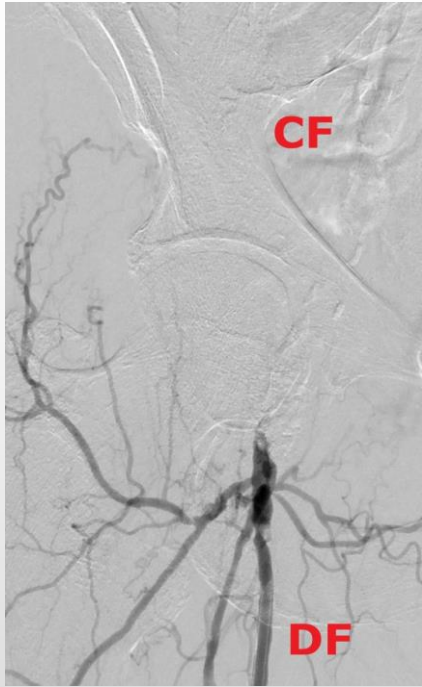
Results

Superficial and deep femoral arteries rotational atherectomy



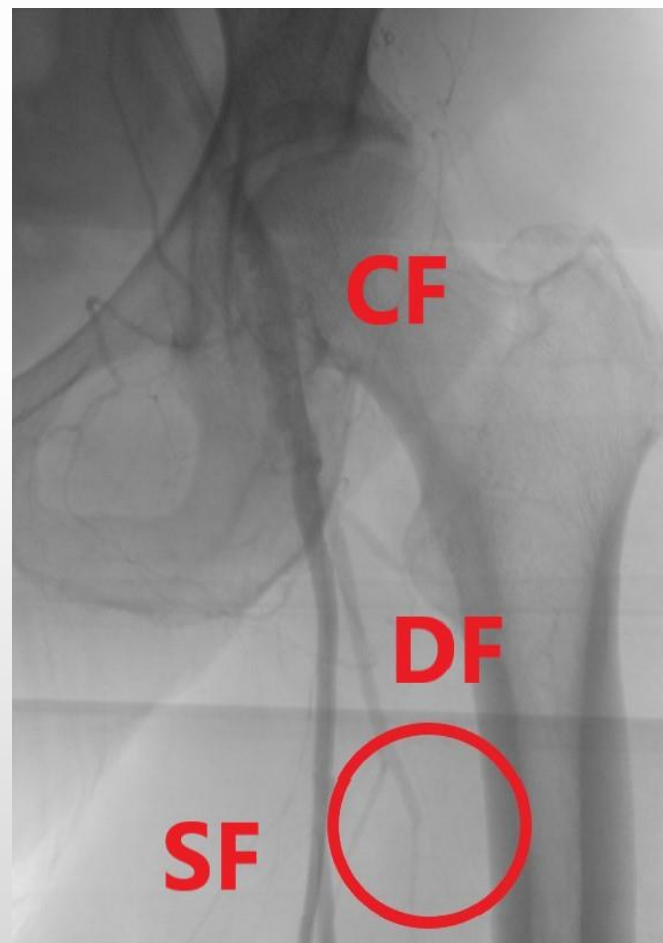
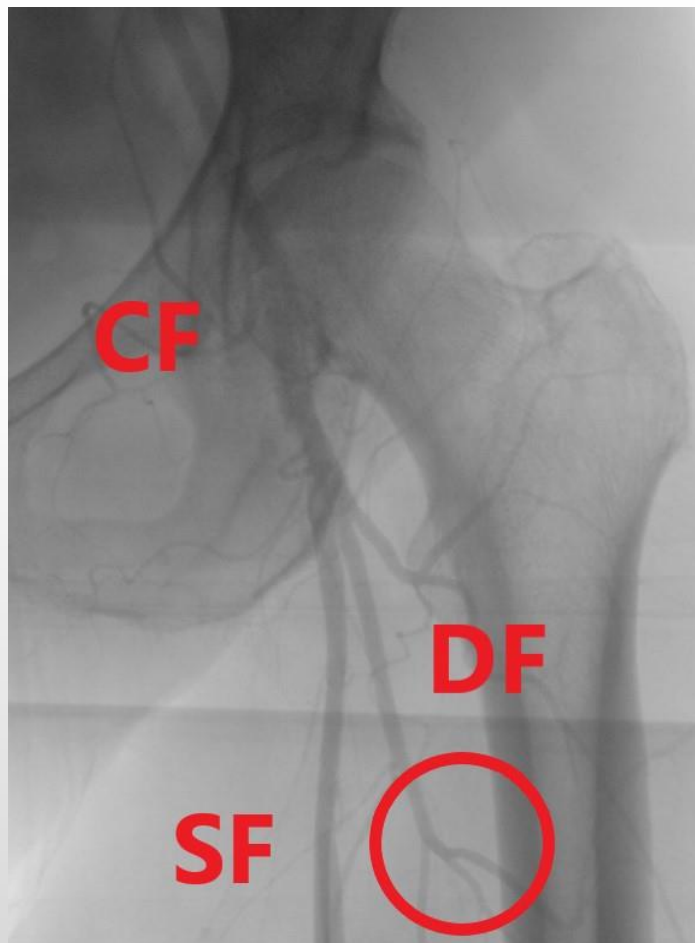
Results

Deep femoral artery retrograde puncture



Results

Deep femoral artery side branch embolization



Results

Mean follow-up was 20,2 months

complications	n
mortality at 30 days	4/89 (2 MI at D1 and D3, AMI D5 and CF D30)
NSTEMI at 30 days	2/109 (at D1 and D30)
acute kidney injury	3/109 (2,7 %)
major amputation	3 (Rutherford stage 6)
minor amputation	3 (Rutherford stage 3, 4 and 5)
false aneurysm at the access site	5/109 (3 thrombin and 2 surgery)
thrombosis at the access site	2/109 (1 endovascular and 1 surgery)
primary patency ($\leq$ 50% residual stenosis at duplex scan)	93,6 % (102/109)
freedom from TLR	90,8 % (99/109)

Results

- All procedures except 10 had improved Rutherford stage
- 7/10 had recurrent lesion (6 restenosis and 1 reocclusion)
- 3/10 without recurrent lesion needed secondary endarterectomy:
 - One for persistent Rutherford stage 3. After the open surgery, the patient had still claudication probably due to underestimated run off vessels disease.
 - One with Rutherford stage 6. The patient had secondary ipsilateral femoro-popliteal venous bypass with common femoral endarterectomy. He had later below the knee amputation.
 - One with Rutherford stage 3. 14 months later, he developed Rutherford stage 5. He had femoro-popliteal venous bypass with common femoral endarterectomy, BTK angioplasty and 3 toes amputation.

Conclusions

- Rotational atherectomy followed by DCB angioplasty for common femoral artery calcified occlusive disease is **feasible** and **safe**.
- The advantages are
 - to treat **all types** of the Azéma classification
 - to **avoid** the potential **complications** of the surgical treatment
 - to **leave nothing** behind (no stent)
- Freedom from TLR at 20 months: **90,8%**.