

# Atherectomy with drug-eluting balloon for common femoral artery occlusive disease: 18 months experience

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# Disclosure

Speaker name: Arnaud Kerzmann

- I have the following potential conflicts of interest to report:
  - Receipt of grants/research support : Medicor™
  - Receipt of honoraria and travel support : Boston Scientific™  
BD™
  - Participation in a company-sponsored speaker bureau : iVascular™

## Aims

- 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 increasing<sup>1</sup>.
- Stenting of the common femoral artery is possible<sup>1,2</sup> but we believe it is better to avoid it. Calcified arterial lesions are not well treated with drug-coated balloons alone<sup>3</sup>.

<sup>1</sup> 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.

<sup>2</sup> Gouëffic Y, Della Schiava N, Thaveau F, Rosset E, Favre JP, Salomon du Mont L, Alsac JM, Hassen-Khodja R, Reix T, Allaure 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.

<sup>3</sup> Fanelli F, Cannavale A, Gazzetti M, Lucatelli P, Widerk A, Cirelli C, d'Adamo A, Salvatori FM. Calcium burden assessment and impact on drug-eluting balloons in peripheral arterial disease. *Cardiovasc Intervent Radiol.* 2014;37:898-907.

## Aims

- Atherectomy followed by drug-coated balloon angioplasty do better than atherectomy followed by plain old balloon angioplasty<sup>4</sup>.
- Our aim was to evaluate vessel preparation with rotational atherectomy followed by drug-coated balloon angioplasty to treat common femoral artery calcified occlusive disease.

<sup>4</sup> Shammas NW, Shammas GA, Jones-Miller S, Shammas WJ, Bou-Dargham B, Shammas 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 Oct;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 drug-coated balloon angioplasty
- Exclusion: embolic occlusive disease, hybrid procedure (endovascular and open surgery), critical acute ischemia
- Primary end point: freedom from TLR

# Results

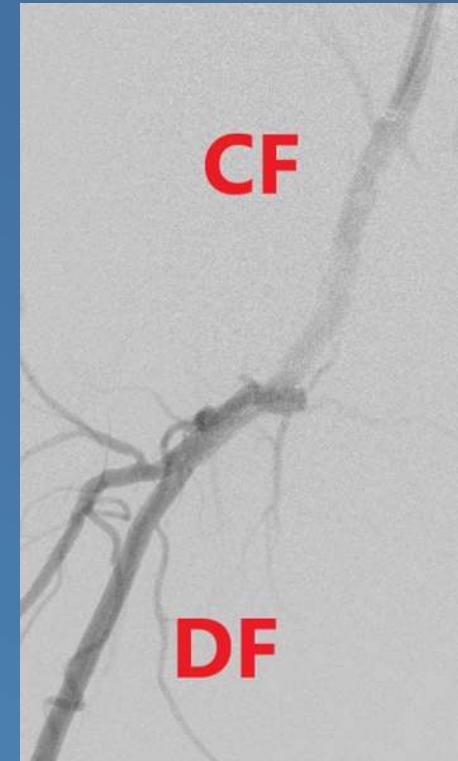
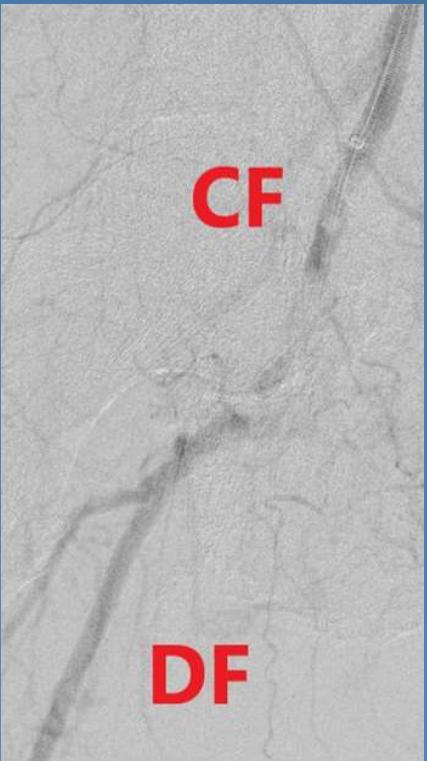
- Between June 2021 and March 2023, 41 patients including 5 with bilateral lesions were treated

procedures	46
men	27
women	14
mean age	75 years old (52-93)
arterial hypertension	80 % (33/41)
smoking or stopped < 3 years	61 % (25/41)
diabetes (all types)	32 % (13/41)
dyslipidemia (all types)	85 % (35/41)
chronic kidney disease	39 % (16/41 with 3 dialysis)
Rutherford stage 2-3	83 % (38/46)
Rutherford stage 4-5-6	17 % (8/46)
mean ankle-brachial index	0,69 (0,2-1,2)
chronic total occlusion	9 % (4/46)
mean lesion length	3,9 cm (2-8)
simultaneous angioplasties	67 % (31/46)

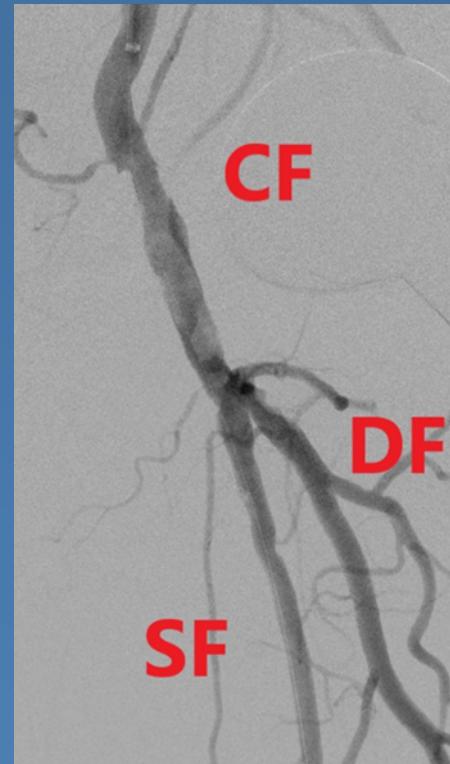
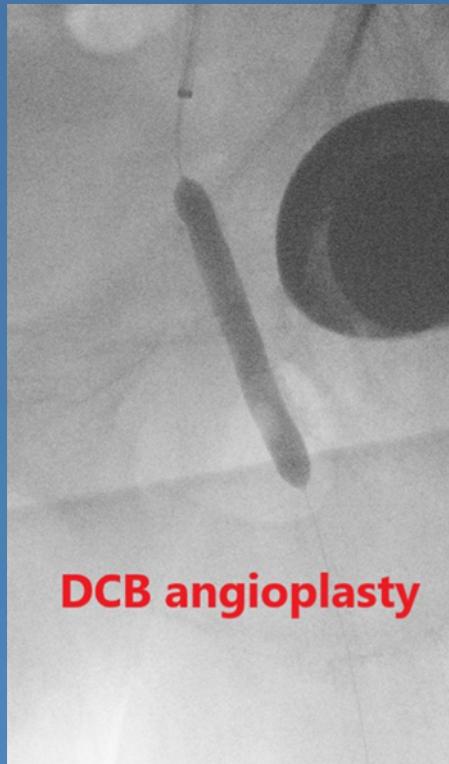
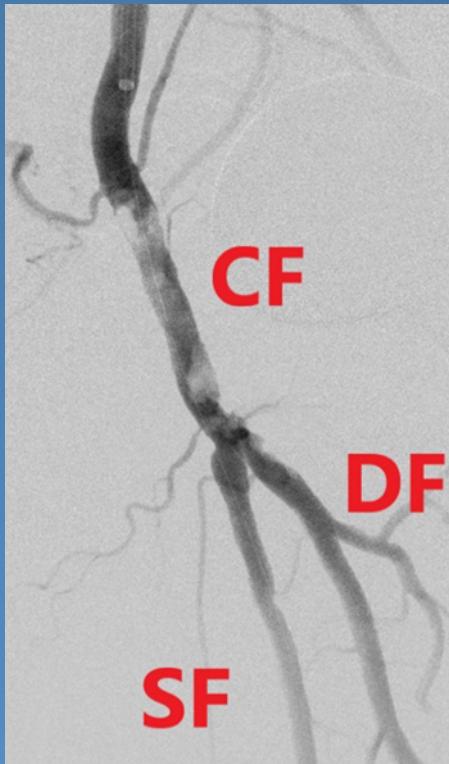
## Results

- All procedures were performed under local anesthesia, except 2 under general anesthesia.
- 36 (78 %) were anterograde with 35 contralateral femoral and 1 humeral puncture, and 10 (22 %) were retrograde with ipsilateral superficial femoral puncture.
- No filter was used.
- Technical success rate was 100% with 2 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.

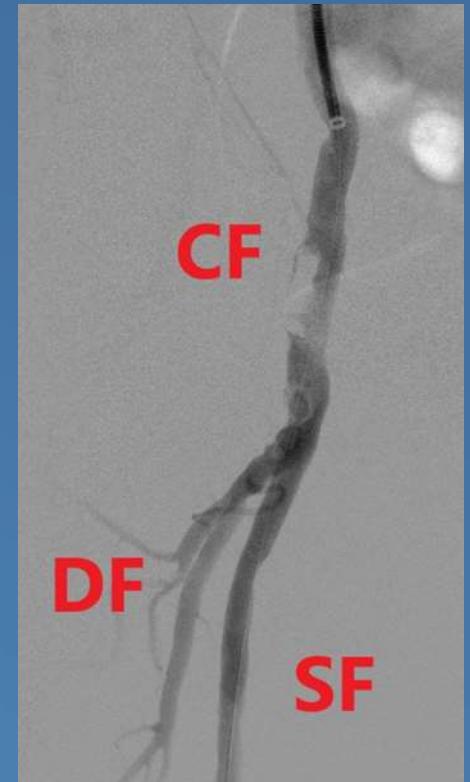
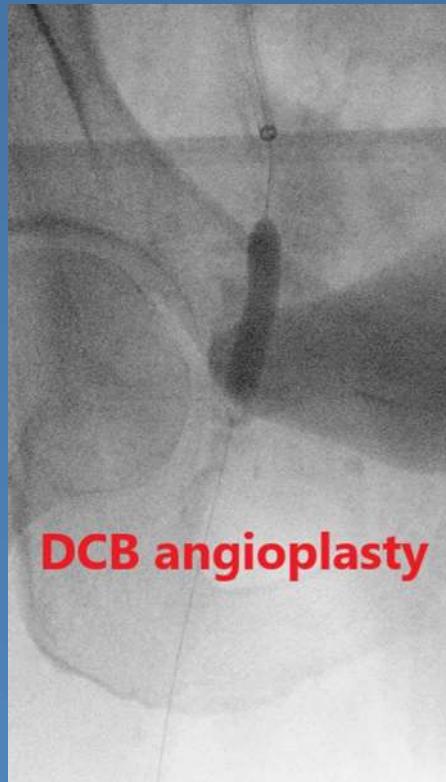
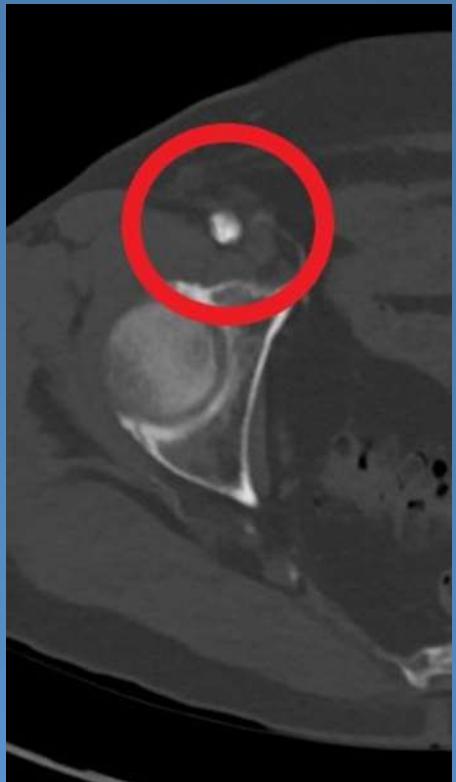
## Results



## Results

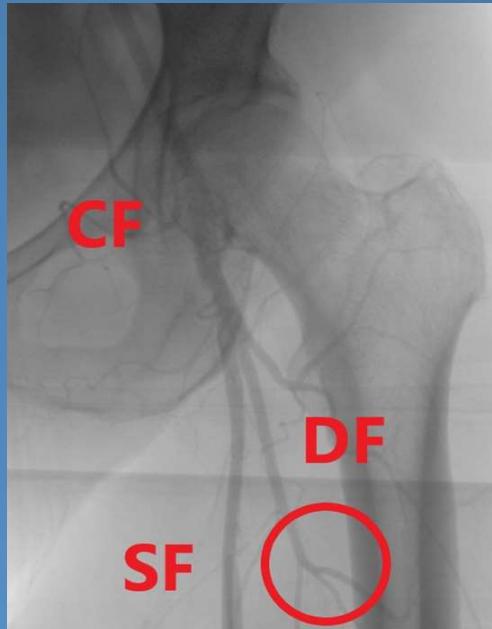


## Results



# Results

Deep femoral artery side branch embolization



# Results

- Mean follow up was 13 months

complications	n
mortality at 30 days	3/41 (MI at D1, AMI D5 and CF D30)
NSTEMI at 30 days	2/46 (at D1 and D30)
acute kidney injury	1/46
major amputation	1 (Rutherford stage 6)
minor amputation	2 (Rutherford stage 3 and 4)
false aneurysm at the access site	2/46 (1 thrombin and 1 surgery)
thrombosis at the access site	2/46 (1 endovascular and 1 surgery)
freedom from target lesion revascularization	93 % (43/46)

## Results

- All treated common femoral artery were patent.
- All procedures except 3 improved Rutherford stage.
- 3 procedures needed secondary endarterectomy:
  - one for persistent Rutherford stage 3 disease. 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 drug-coated balloon angioplasty for common femoral artery calcified occlusive disease is **feasible** and **safe**.
- The advantages are
  - to **avoid** the potential **complications** of the surgical treatment
  - to **leave nothing** behind
- Patients selection is essential. The best indication seems to be **old patient** with intermittent **claudication**, and the worst CLTI with multi-level extended occlusive disease.