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Atherectomy with drug-eluting balloon for common femoral artery occlusive disease : 3-year experience

Kerzmann A, MD, Boesmans E, MD, Holemans C, MD,

Szecel D, MD, Praca C, MD, Alexandrescu, MD PhD, Tchana-Sato V, MD PhD

Cardiovascular and Thoracic Surgery Dept, CHU, Liege, Belgium

Disclosures

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Introduction

Despite 17% of local and 15% of systemic complications[1], 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.[2]

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) alone.[4]

Introduction

Atherectomy followed by DCB angioplasty do better than atherectomy followed by plain old balloon angioplasty.[5]

Our aim was to evaluate vessel preparation with rotational atherectomy followed by DCB angioplasty to treat common femoral artery calcified occlusive disease.

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)

procedures	86
men	51
women	20
mean age	73 years old (52-93)
arterial hypertension	84,5 % (60/71)
smoking or stopped < 3 years	56,3 % (40/71)
diabetes (all types)	40,8 % (29/71)
dyslipidemia (all types)	87,3 % (62/71)
chronic kidney disease	40,8 % (29/71 with 3 dialysis)
Rutherford stage 1-2-3	83,7 % (72/86)
Rutherford stage 4-5-6	16,3 % (14/86)
mean ankle-brachial index	0,73 (0,2-1,4)
chronic total occlusion	7 % (6/86)
mean lesion length	4,0 cm (1,5-8)
simultaneous angioplasties	66,3 % (57/86)

Results

Between June 2021 and August 2024, 71 patients including 15 with bilateral lesions were treated

Results

All procedures were performed under local anesthesia, except 2 under general anesthesia

61 (71 %) were anterograde with 54 controlateral femoral and 7 upper limb punctures, and 25 (29 %) were retrograde with ipsilateral superficial femoral puncture

No filter was used

Technical success rate was 100% with 3 deep femoral retrograde punctures

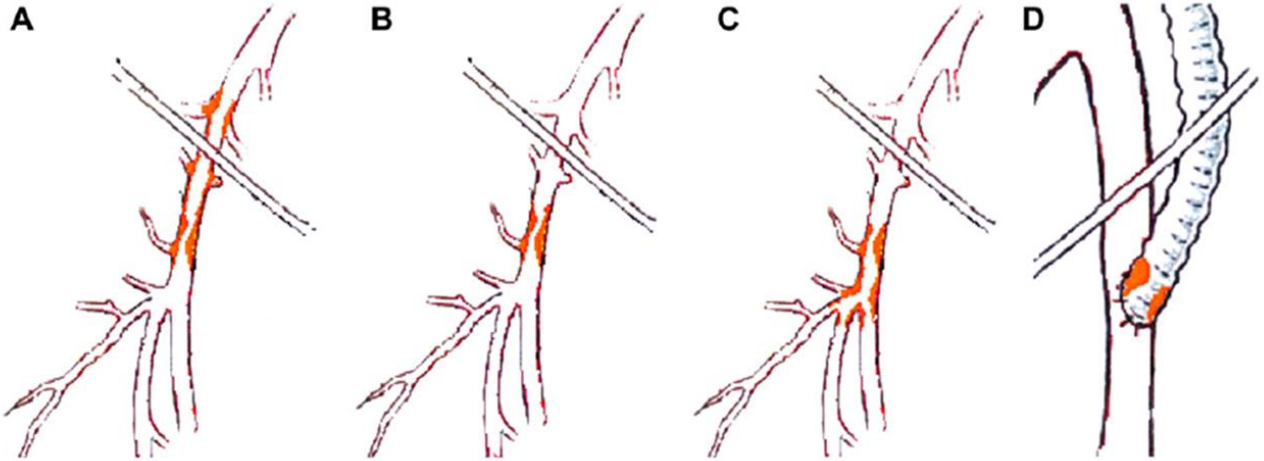
No arterial perforation was observed

No bail-out stent was needed

One asymptomatic embolization in a deep femoral artery side branch

Results

All types of the Azéma classification[6] for common femoral artery occlusive disease could be treated



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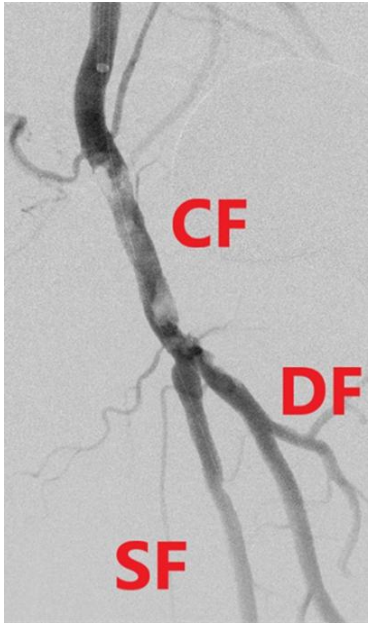

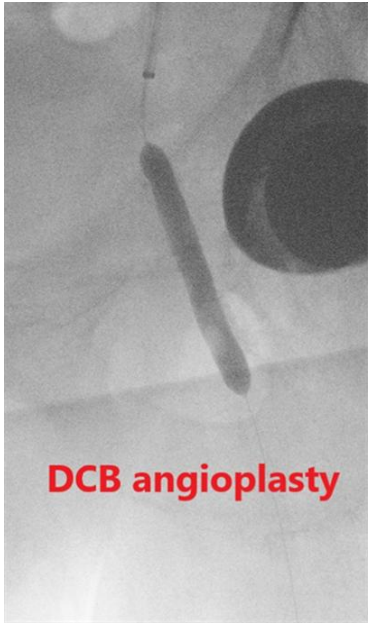

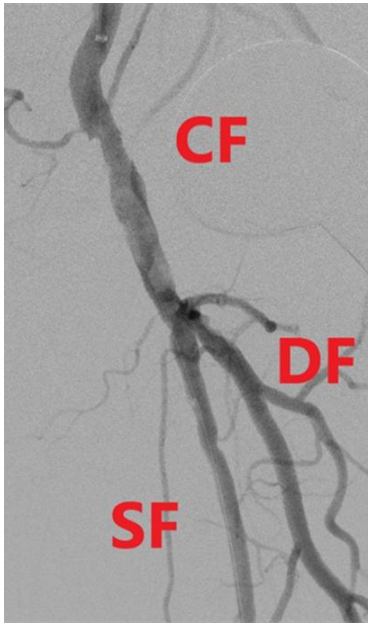

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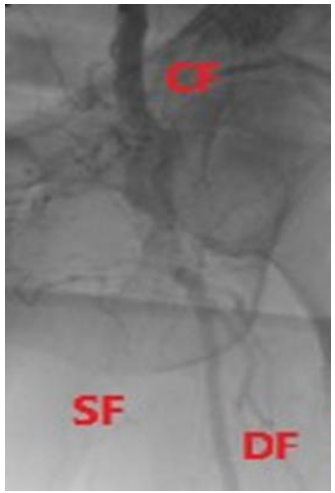
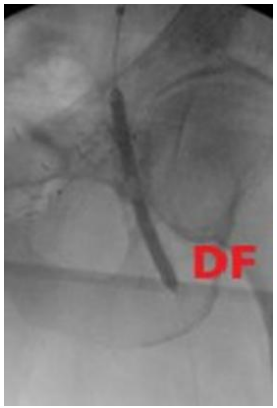
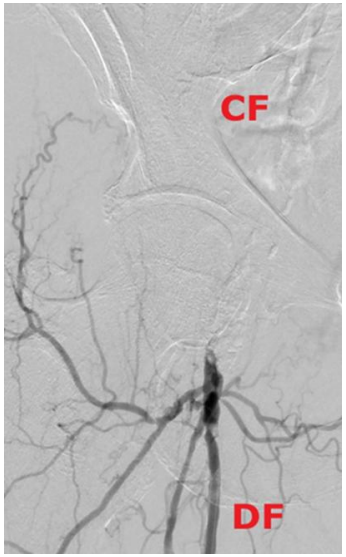


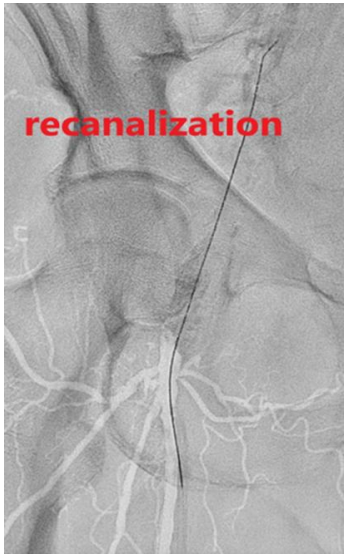


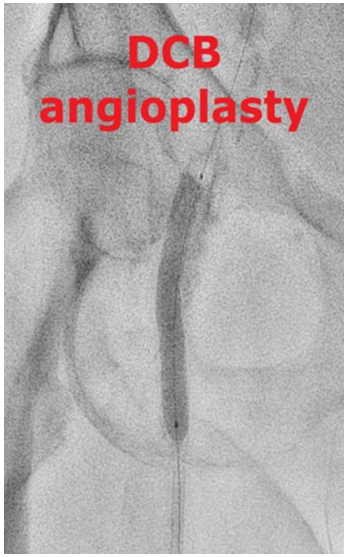
Superficial and deep femoral arteries rotational atherectomy

Results

Deep femoral artery retrograde puncture

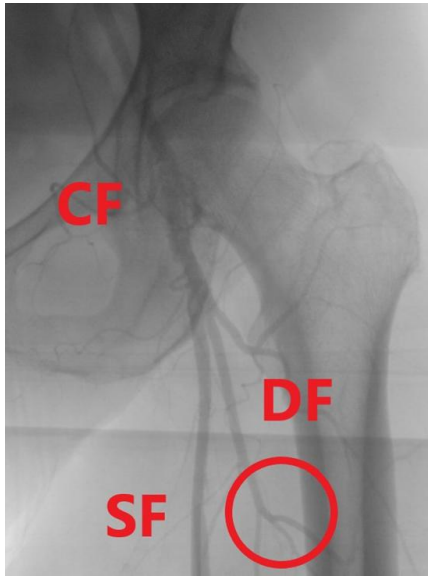


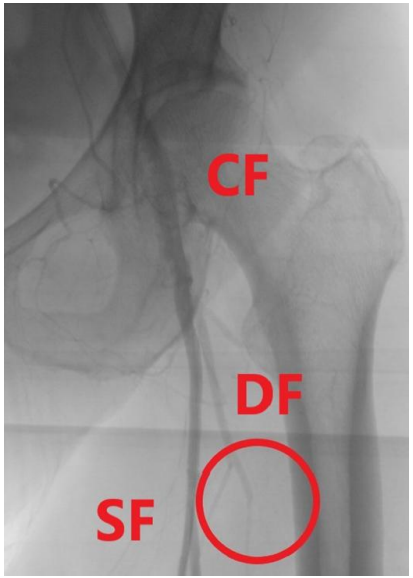




Results

Deep femoral artery side branch embolization





Results

Mean follow-up was 16,6 months

complications	n
mortality at 30 days	4/71 (2 MI at D1 and D3, AMI D5 and CF D30)
NSTEMI at 30 days	2/86 (at D1 and D30)
acute kidney injury	3/86 (5 %)
major amputation	2 (Rutherford stage 6)
minor amputation	2 (Rutherford stage 3 and 4)
false aneurysm at the access site	5/86 (3 thrombin and 2 surgery)
thrombosis at the access site	2/86 (1 endovascular and 1 surgery)
primary patency (≤ 50% residual stenosis at duplex scan)	94% (81/86)
freedom from TLR	90,7 % (78/86)

Results

All procedures except 8 had improved Rutherford stage
5/8 had recurrent lesion (4 restenosis and 1 reocclusion)
3/8 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 16 months: **90,7%**.

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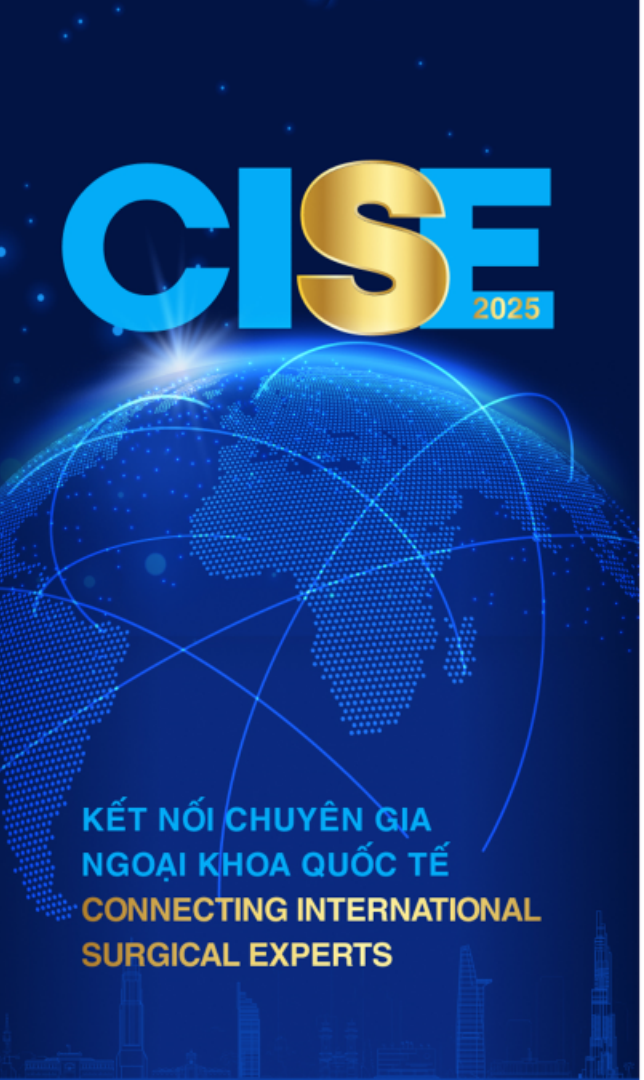
[6] Azéma L, Davaine JM, Guyomarch B, et al. Endovascular repair of common femoral artery and concomitant arterial lesions. Eur J Vasc Endovasc Surg 2011;41(6):787-93.



Thanks you!

Contact information

akerzmann@chuliege.be

+3243233586