

The logo for LINC (Lung International Network for Cancer) is located in the top left corner. It features the letters 'LINC' in a white, sans-serif font. To the right of the text is a stylized graphic consisting of two curved, overlapping shapes in red and orange, resembling a flame or a ribbon, set against a dark blue background with a large, abstract brushstroke.

Exploring DCB in TAO

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Disclosure

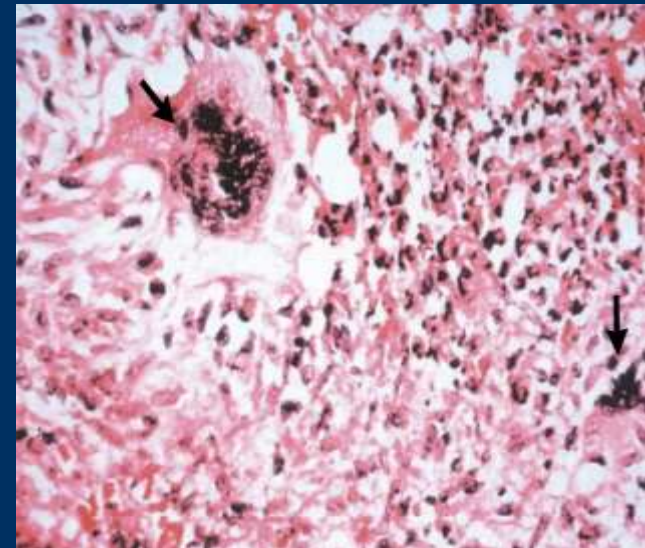
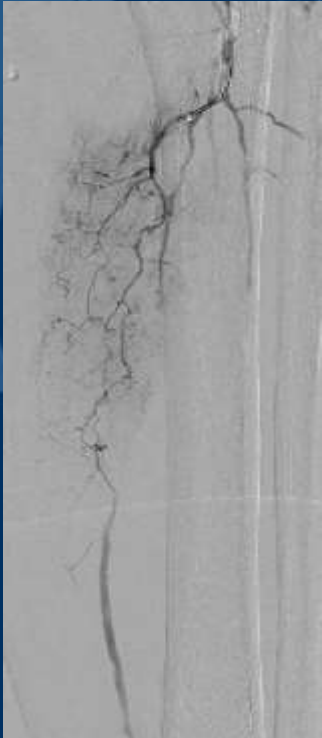
Speaker name:

Mingjin Guo

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)
- I do not have any potential conflict of interest

Thromboangiitis Obliterans (Buerger's disease) is a nonatherosclerotic segmental inflammatory disease that most commonly affects the small and medium-sized arteries, veins, and nerves of the arms and legs.



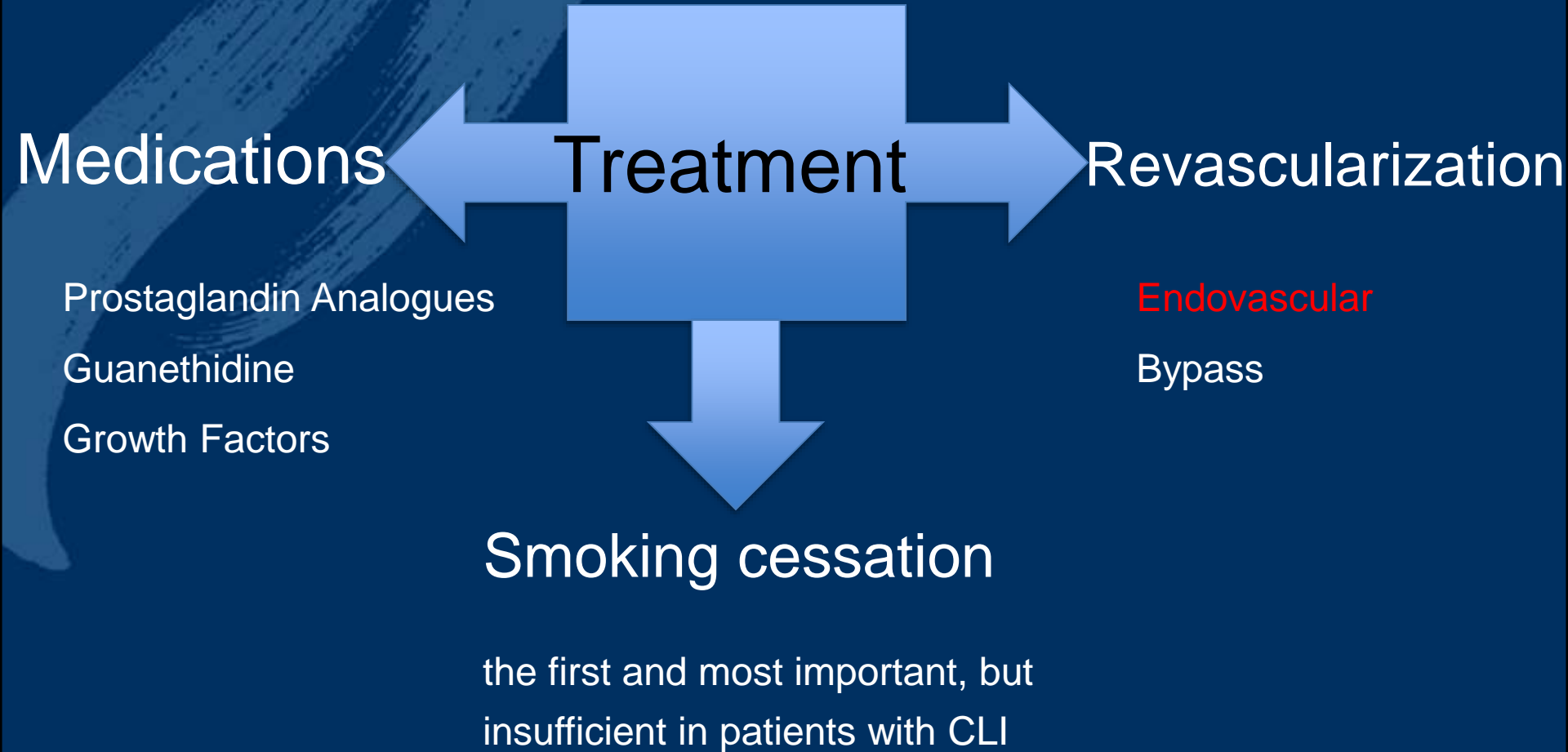
TAO usually is manifested with distal extremity ischemia in a smoker before the age of 45 to 50 years. The median age at diagnosis is 34 years. Characteristically, distal extremity ischemia involves the feet, legs, hands, or arms.

Table 79-1 Pooled Characteristics of Patients with Thromboangiitis Obliterans from Different Regions Globally

Prevalence	Uncommon
Incidence	Declining
Involved arterial size	Small and medium
Age at diagnosis (years)	29-42
Age at hospital admission (years)	42.5 ± 8.4
Male, %	77-98
Female, %	2-23
History of smoking, %	93-94
Intermittent claudication, %	17-62
Rest pain, %	46-89
Ischemic ulcers and gangrene, %	38-85
Upper extremity	2-21
Lower extremity	35-93
Both	16-20
Migratory superficial phlebitis, %	40-62
Deep venous thrombosis	Unusual
Raynaud's phenomenon, %	10-45
Sensory findings, %	69
Abnormal Allen's test result, %	63
Joint manifestations, %	12.5



Thromboangiitis obliterans or Buerger's disease: challenges for the rheumatologist. *Rheumatology (Oxford)* 46:192-199, 2007



Endovascular management of Buerger's disease is feasible, safe, and effective with high rate of limb salvage and clinical improvement.

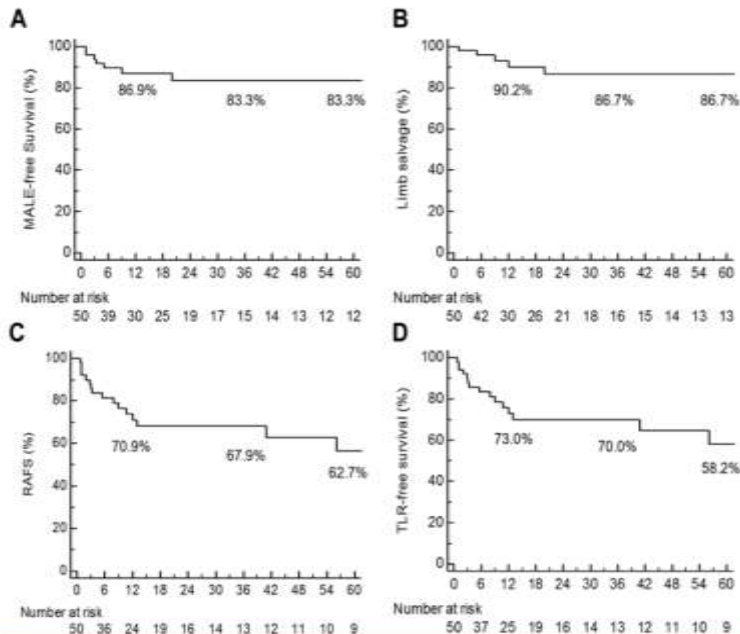


Fig 3. Kaplan-Meier curves for major adverse limb event (MALE)-free survival (**A**), limb salvage (**B**), reintervention- and amputation-free survival (RAFS; **C**), and target lesion revascularization (TLR)-free survival (**D**).

Table 2. Clinical outcomes of patients.

	Pre-intervention	1st month	3rd month	6th month	1 year	p
Rutherford classification	4.81±0.50	3.51±0.73	3.40±0.79	3.36±0.78	3.27±0.76	<0.001
Ankle brachial index	0.40±0.12	0.91±0.23	0.88±0.23	0.85±0.20	0.84±0.19	<0.001
Triphasic blood flow, $n_{\text{observed}}/n_{\text{cases}}$ (%)	0 (0)	20/22 (91)	20/22 (91)	20/22 (91)	20/22 (91)	<0.001
Ulcer, $n_{\text{observed}}/n_{\text{cases}}$ (%)	17/22 (77.3)	15/22 (68.2)	7/22 (31.9)	2/22 (9.1)	2/22 (9.1)	<0.001
Rest pain, $n_{\text{observed}}/n_{\text{cases}}$ (%)	22/22 (100)	2/22 (9)	1/22 (4.5)	1/22 (4.5)	1/22 (4.5)	<0.001
Smoking, $n_{\text{observed}}/n_{\text{cases}}$ (%)	15/16 (93.7)	6/16 (37.5)	6/16 (37.5)	6/16 (37.5)	6/16 (37.5)	<0.001

Kim DH, Ko YG, Ahn CM, et al. Immediate and late outcomes of endovascular therapy for lower extremity arteries in Buerger disease. *JvascSurg* 2018;67:1769-1777. DOI:10.1016/j.jvs.2017.09.020

Kacmaz F, Kaya A, Keskin M, et al. Clinical outcomes of extended endovascular recanalization of 16 consecutive Buerger's disease patients. *Vascular* 2019;27:233-241. DOI:10.1177/1708538118805623

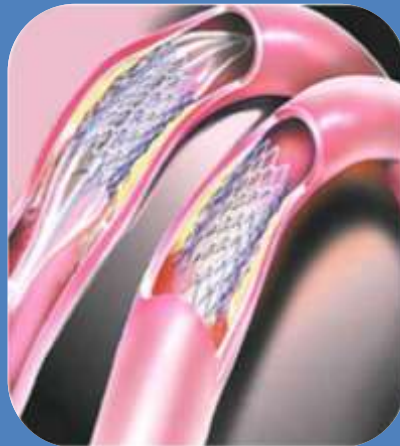
Milestone of endovascular intervention: DCBs significantly improved vascular patency of arteriosclerotic stenosis/occlusion.

1980



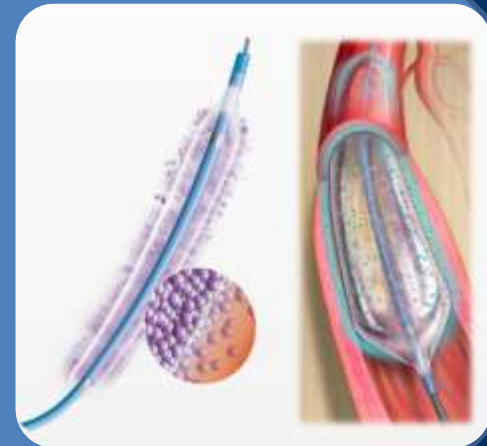
PTA

1990+



BMS

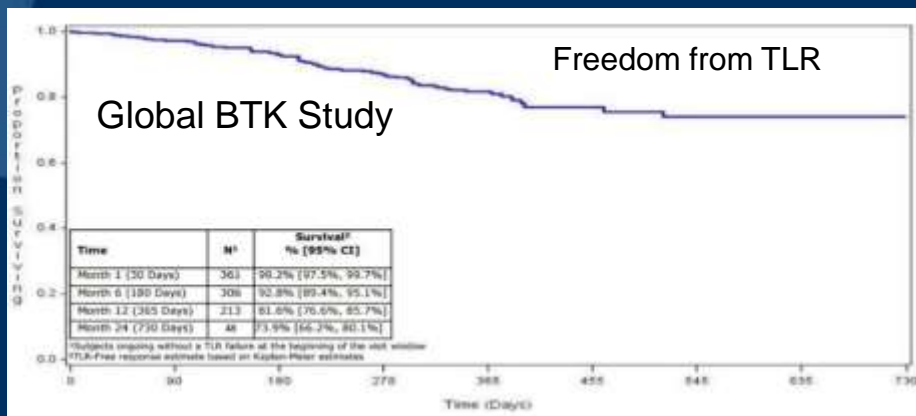
2010+



DCB

In fact, endovascular treatment in case of TAO may be technically challenging because of the prevalent location of below the knee lesions.

The treatment of below the knee lesions with DCB in atherosclerotic disease has made great progress in past several years.



AcoArt II Study	DCB N=48	PTA N=46	P
Primary Patency (6 month)	78.7% (37/48)	28.3% (13/46)	
Occlusion	8	27	<0.001
TLR	3	12	
Amputation	1	1	

DCBs: Paclitaxel-based drug coating:

- block early cell proliferative factors,
- inhibit cytoskeleton formation,
- block mitosis,
- effectively inhibit cell proliferation,
- inhibit smooth muscle cell migration,
- phenotypic changes
- inhibit intimal hyperplasia ⁽¹⁾

Could DCBs improve vascular patency rate of stenosis/occlusion caused by TAO?

Referce:

(1):Scheller B,Speck U,Bohm M,Prevention of restenosis: is angioplasty the answer Heart .2007,93(5)539-541.

There are fewer reports of endovascular treatment of Burger's disease with DCB, and we attempt to explore the safety and efficiency of DCB in Burger's disease.



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case 1

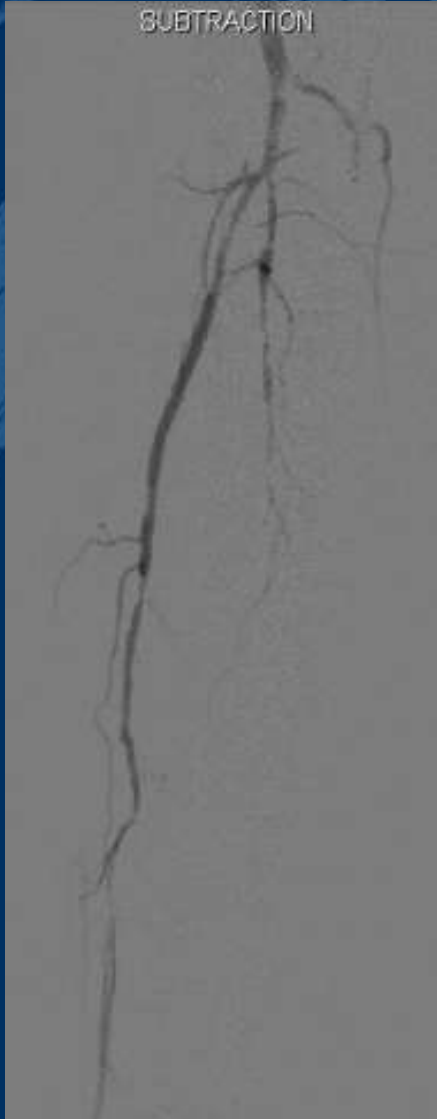
M, 34y.

Chief complaint: gangrene toes of left foot for 2 months.

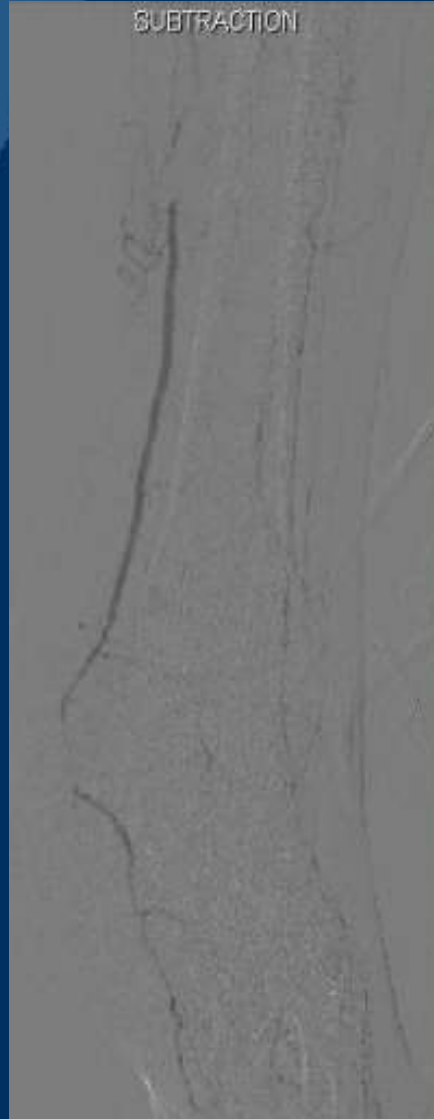
History of smoking for 10 years

Diagnosis: Buerger's disease





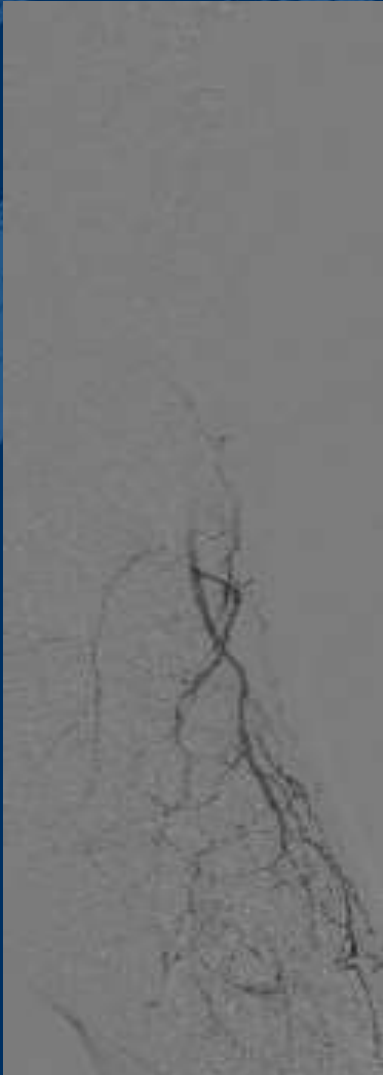
Pre-operation



Pre-operation



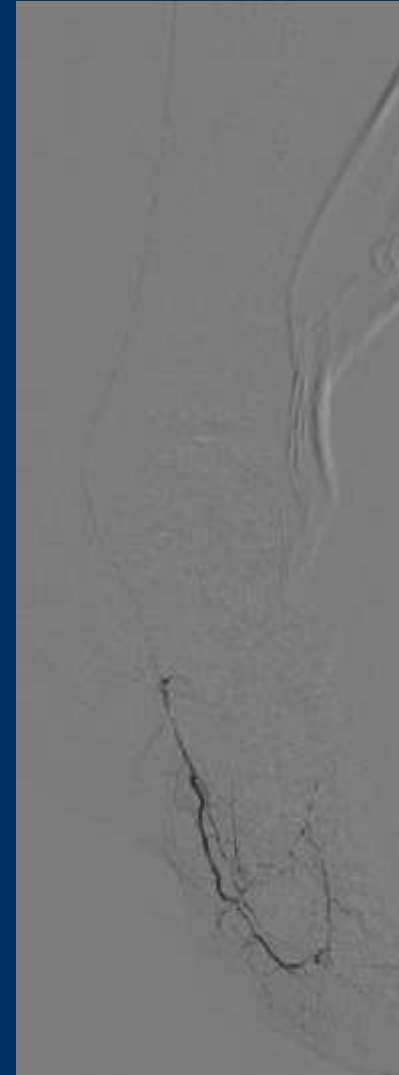
Anterior tibial artery



Dorsalis pedis

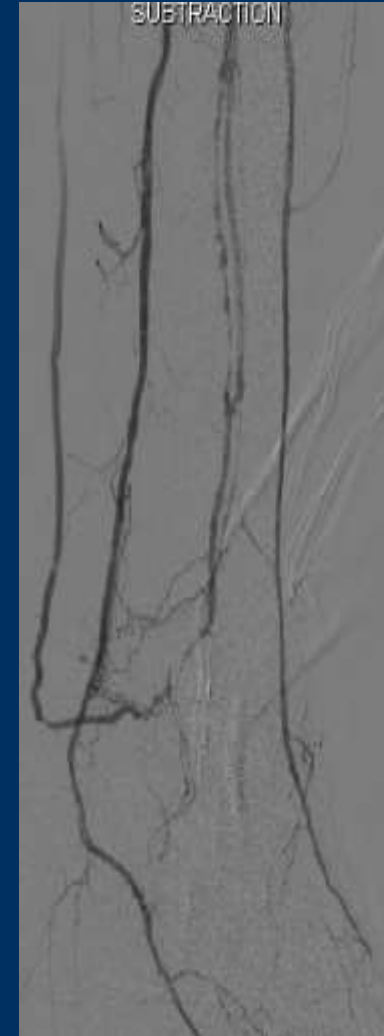
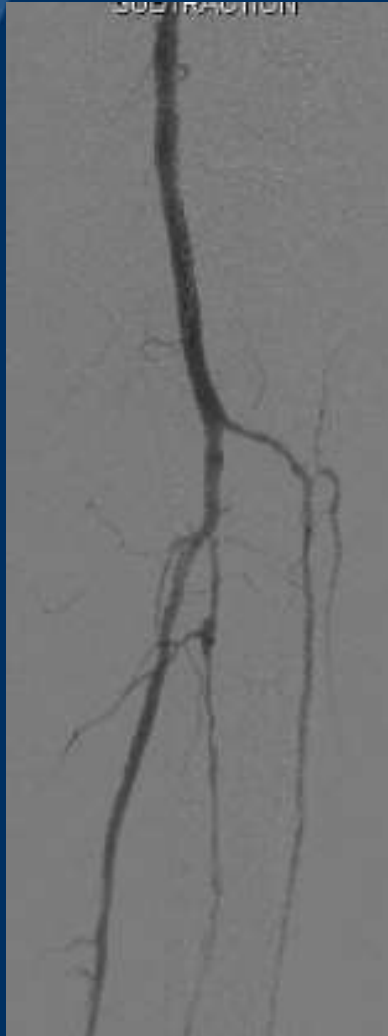
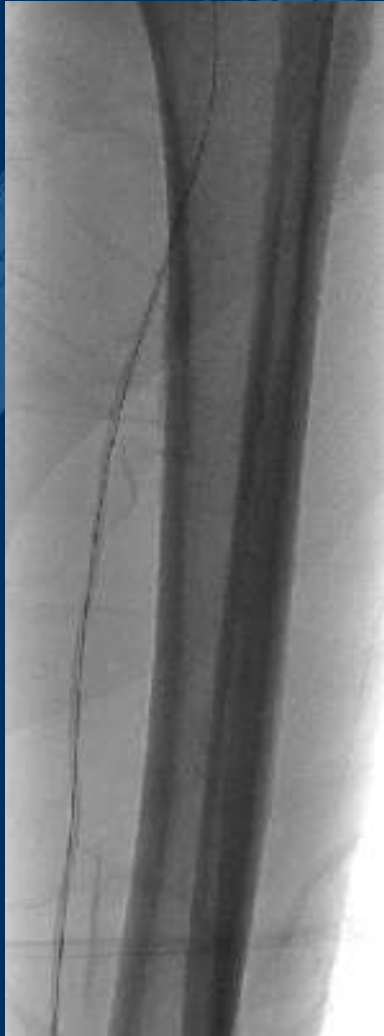


Peroneal artery



Posterior tibial artery

3 months follow up, Ulcer healed, No pain



DCB for posterior tibial artery

Post-operation

Post-operation

LINC

case 2

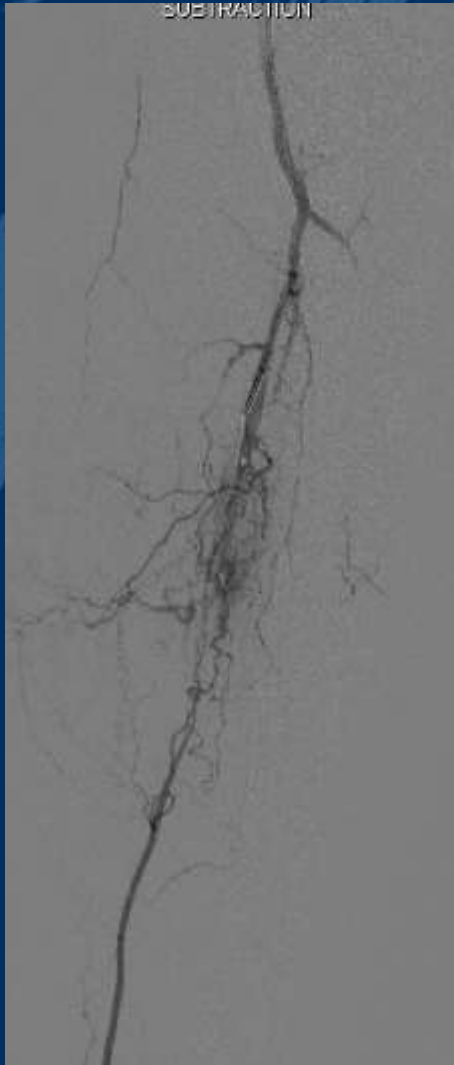
M, 42y.

Chief complaint: intermittent claudication in
left lower extremity for 2 years

History of smoking for 17 years

Diagnosis: Buerger's disease





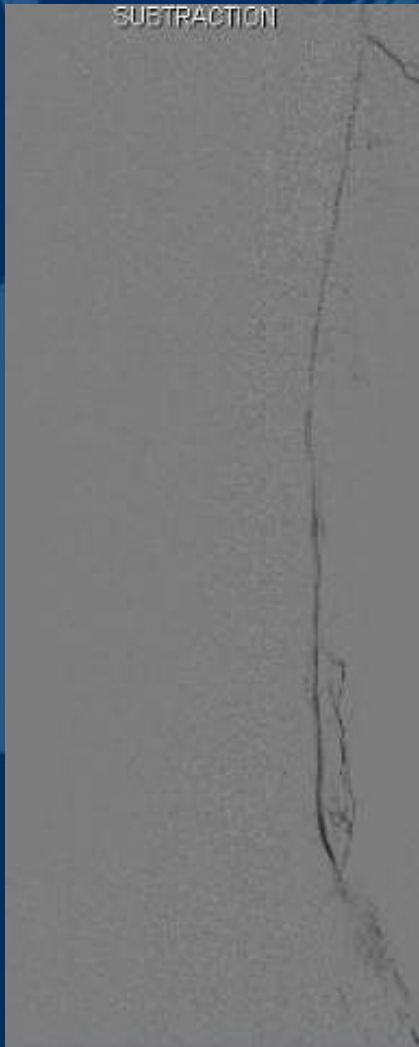
Pre-operation



Pre-operation



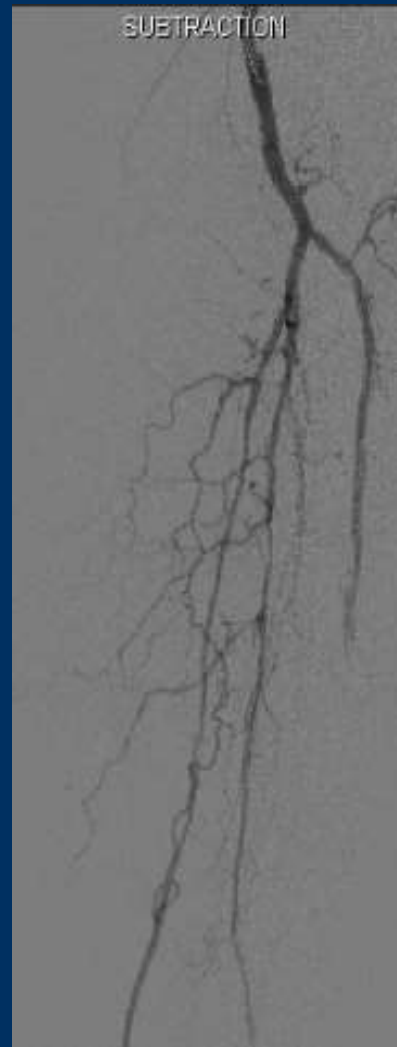
DCB for posterior tibial artery



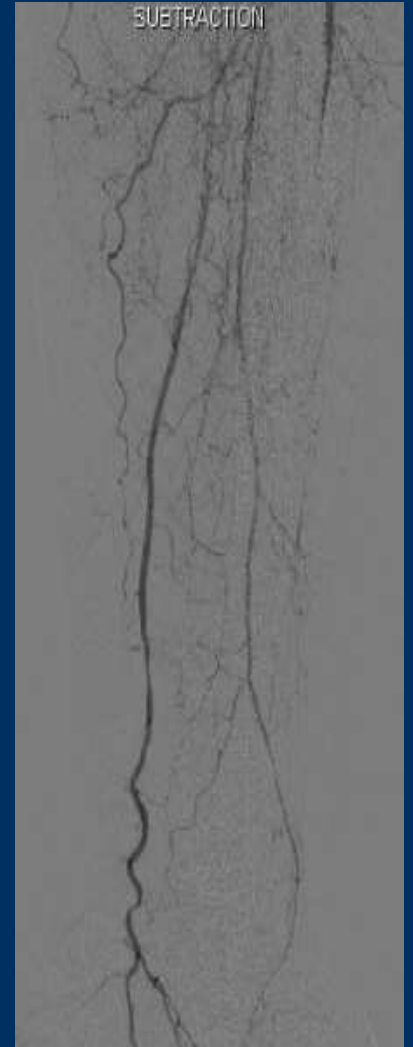
Anterior tibial artery



Dorsal artery



Post-operation



The logo for LINC (Lifestyle, Nutrition, and Incentives) features the letters 'LINC' in a white, sans-serif font. To the left of the text is a stylized graphic consisting of three curved, overlapping lines in shades of red, orange, and yellow, resembling a flame or a ribbon.

LINC

case 3

M, 42y.

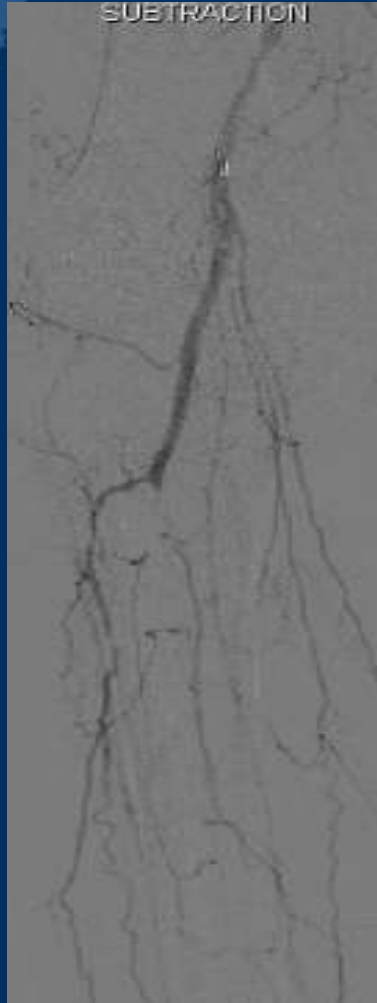
Chief complaint: gangrene toes of right foot for
6 months

History of smoking for 6 years

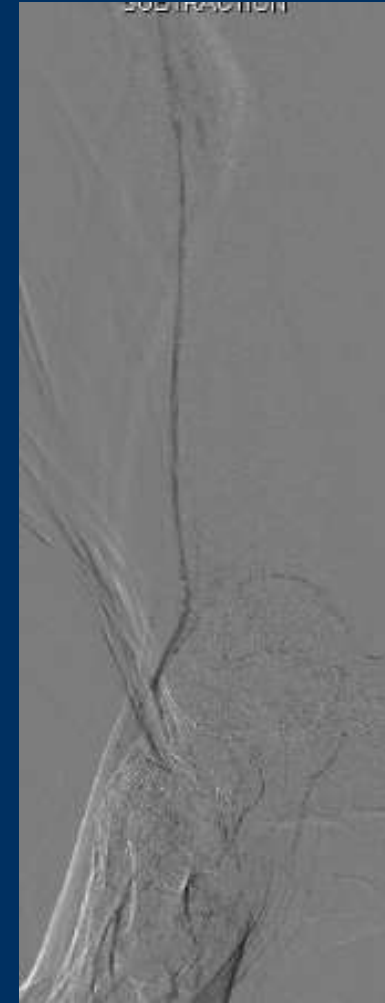
Diagnosis: Buerger's disease



Pre-operation



Pre-operation

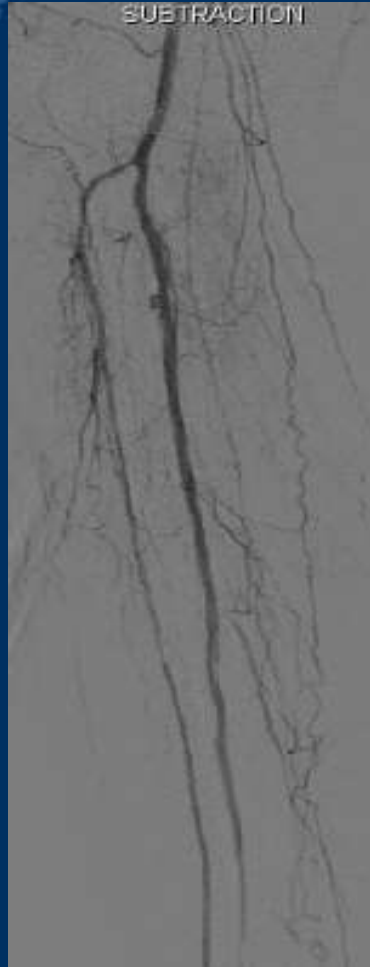


Anterior tibial artery

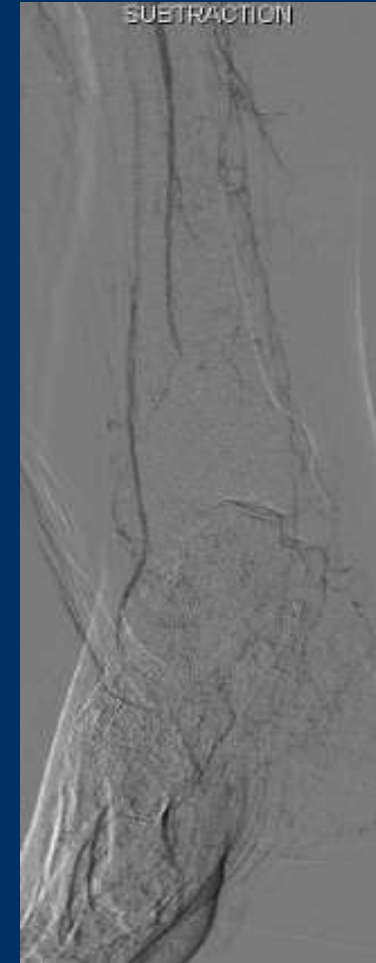
8 months follow up, Ulcer not healed, rest pain relieved



DCB for peroneal artery



Post-operation



Post-operation

LINC

case 4

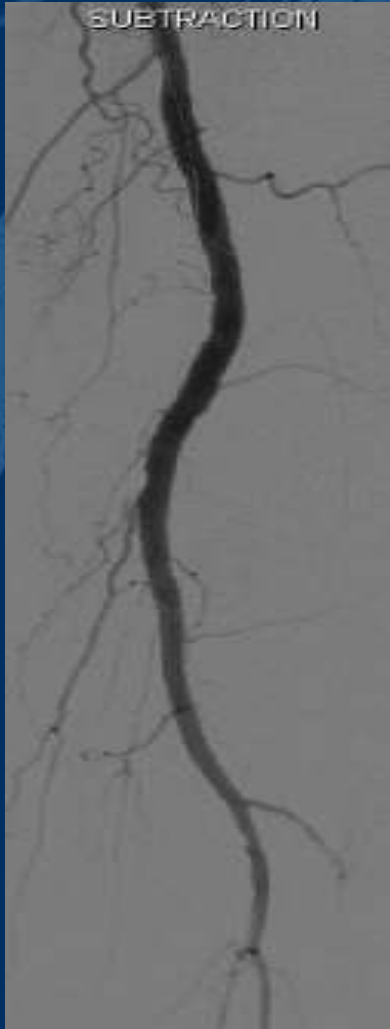
M, 39y.

Chief complaint: rest pain in left foot for 2 weeks

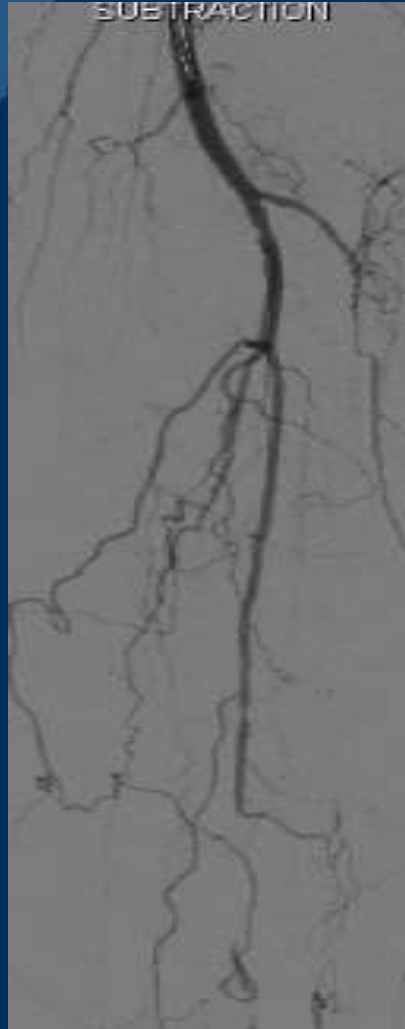
History of smoking for 11 years

Diagnosis: Buerger's disease





Pre-operation



Pre-operation



Peroneal artery

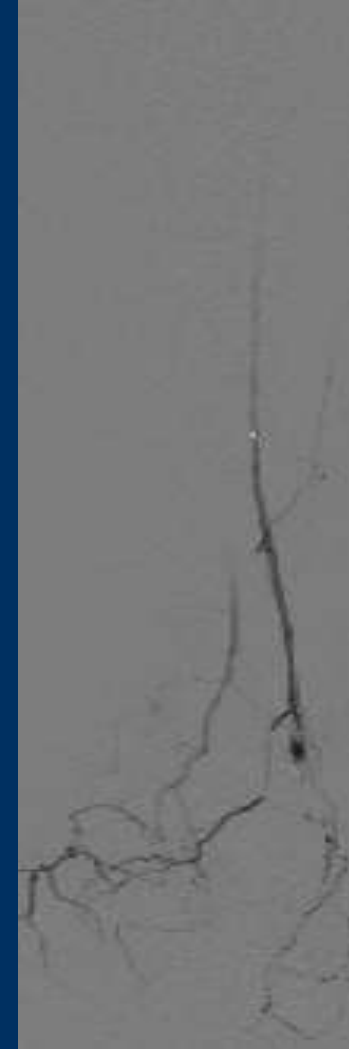
7 months follow up, No rest pain, IC improved



DCB for anterior tibial artery



Post-operation



Post-operation

SUMMARY

1. DCB in TAO is safe and effective, while the long-term outcome needs more evidences
2. DCB in TAO might be more effective because of its ability of inhibiting intimal hyperplasia compared with POBA
3. Vascular preparation and outflow are the key points

THANKS!!

