

# Traitement endovasculaire des complications d'abord périphériques

**GRCI** France 2018



Charles **CHRISTOPHE**  
Centre Cardiovasculaire Lorrain - Claude **BERNARD**  
**Metz**

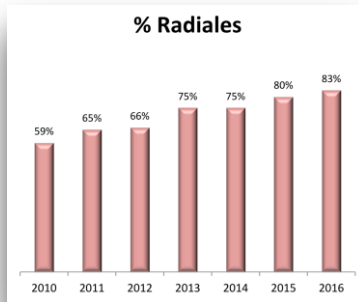
# DÉCLARATION DE LIENS D'INTÉRÊT AVEC LA PRÉSENTATION

**Intervenant : Charles CHRISTOPHE, Metz**

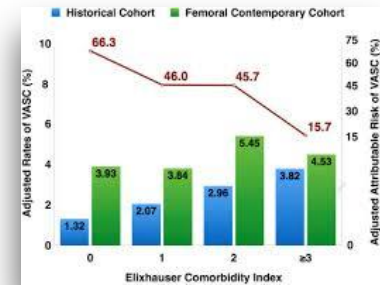
Je n'ai pas de lien d'intérêt à déclarer

# BACKGROUND

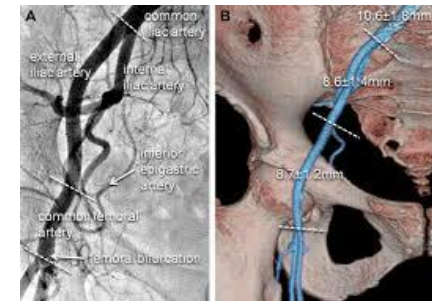
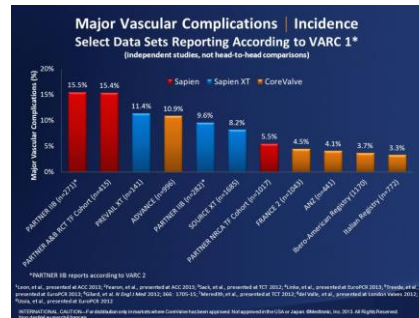
- 1er constat : radial world = sacrifice femoral ?



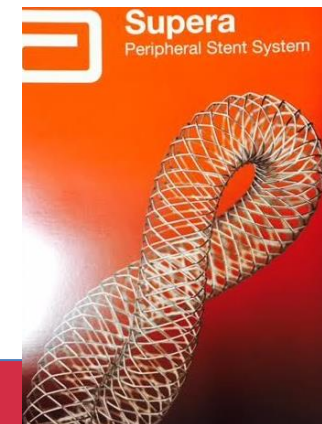
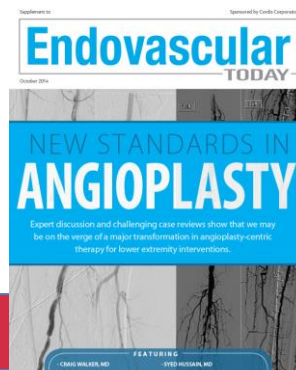
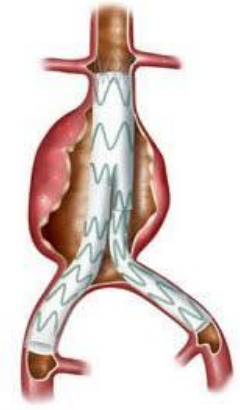
Coronars	Tous 2017	Tous 2016
% Radiales	86%	83%



- 2ème constat : structural world



- 3ème constat : Endovascular world



# Pourquoi fermer soi-même ?

- 1/ AUTONOMIE vis à vis de nos amis chirurgiens = savoir réparer



- 2/ CHIRURGIE DU SCARPA non bénigne

Postoperative complications after common femoral endarterectomy

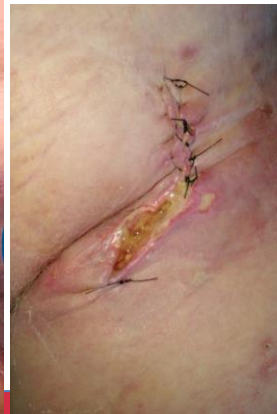
Bao-Ngoc Nguyen, MD, Richard L. Amund, PhD, Mustafa Abugideiri, BS, Rodem Rahbar, MD, Richard F. Neville, MD, and Anton N. Sidawy, MD, MPH, Washington, D.C.

- 1843 CFEs, Diabetes: 33%; CLI: 36%
- CFE between 2005-2010 from the ACS-NSQIP database
- Perioperative morbimortality outcomes before and after hospital discharge
- **Morbi-mortality rates 15%**
- Average length of stay :  $4.6 \pm 7.5$  d

Complication	Rate (%)
Death	0.6%
Return	10.2%
Cardiac	1.3%
Pain	3.8%
Wound	0.8%
Composite	8%

Conclusions: CFE is not as "benign" a procedure as previously believed. The risks of death and wound complications are not insignificant, and a high percentage of these complications occurred after patients were discharged from the hospital. Patients should be carefully selected, especially in the elderly population, and close postoperative follow-up should be considered. (J Vasc Surg 2015;51:1489-94.)

Bao-Ngoc, J Vasc Surg, 2015





# Chirurgie du scarpa

- Complications locales multiples

Lumsden Am Surg 1994

Jusqu'à **20%**

Hémorragie (7,4%)

Neuralgie (5,2%)

DC 2%

- Durée d'hospitalisation ....



## Compression (fellowseal)

- Long, succès relatif, douloureux ...
- Imparfait jusque 25% d'échec
- Risque d'embolisation ++, necroses cutanées etc...

Collet Radiology 1995



## Quelles complications ?

Type of complication	Incidence	Type of treatment
Hematoma or uncontrollable bleeding <sup>a</sup>	<1%	Endovascular Surgery reserved for rare selected cases
Pseudoaneurysm	0.2–0.5% after diagnostic angiography and 2–8% after coronary angioplasty	Percutaneous Surgery reserved for rare selected cases
Arteriovenous fistula	<0.1%	Conservative in asymptomatic patients Endovascular in symptomatic patients
Arterial dissection or thrombosis	<0.5%	Endovascular Surgical treatment reserved for cases of endovascular treatment failure
Distal embolization	<0.5%	Endovascular Surgical treatment reserved for cases of endovascular treatment failure
Nerve damage	Rare	Conservative
Abscess	Rare	Surgical
Lymphocele	Rare	Conservative

# Quelles solutions endovasculaires ?

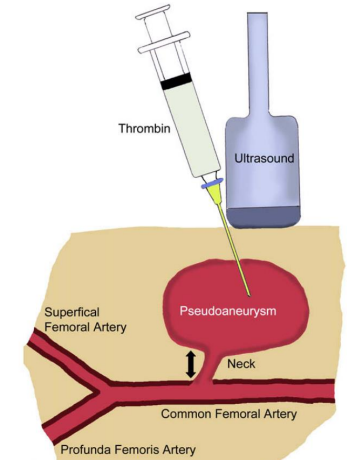
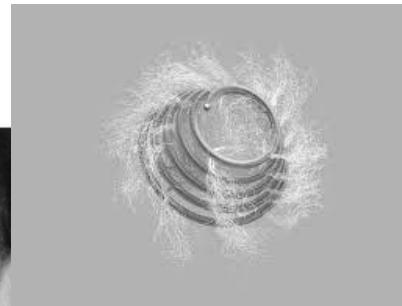
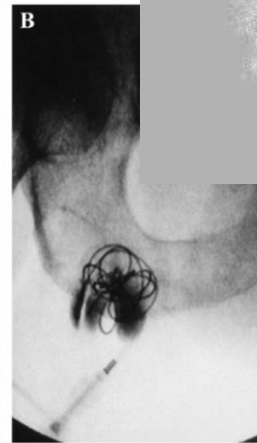
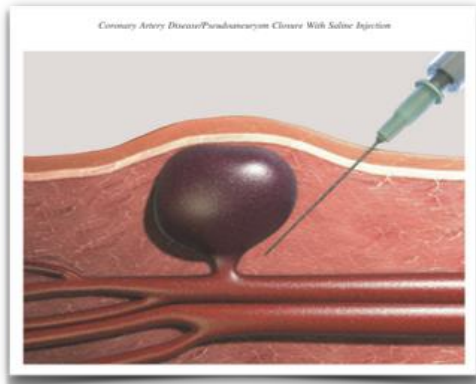


Figure 3 Schematic diagram illustrating the percutaneous treatment of a pseudoaneurysm by injection of thrombin under ultrasound guidance.



# Dissection iliaque

ATL primaire femme 84 y o



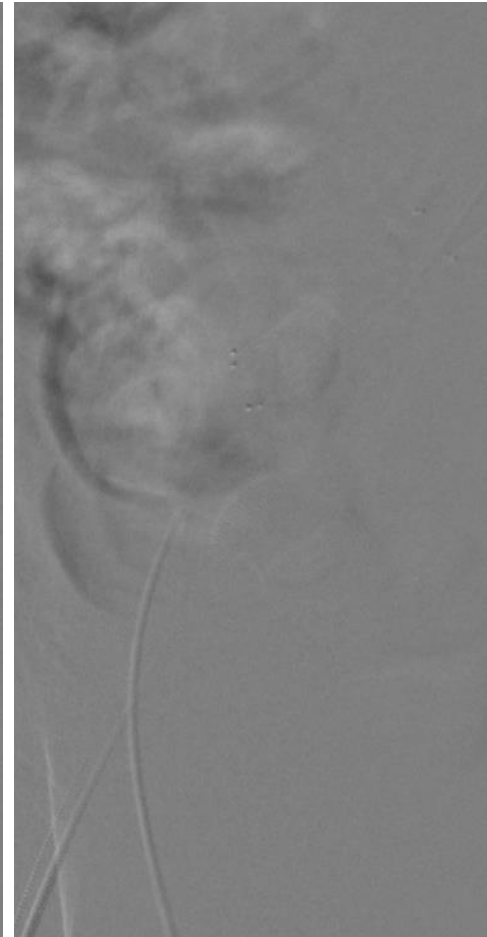
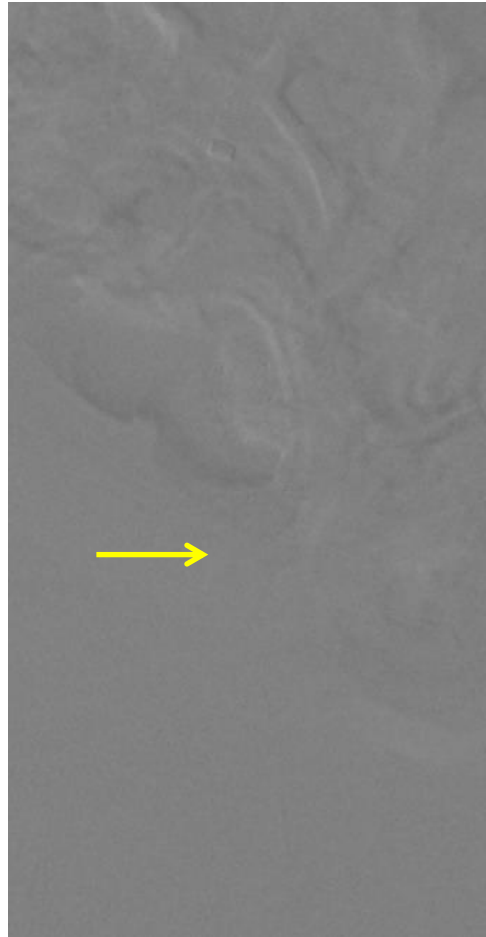
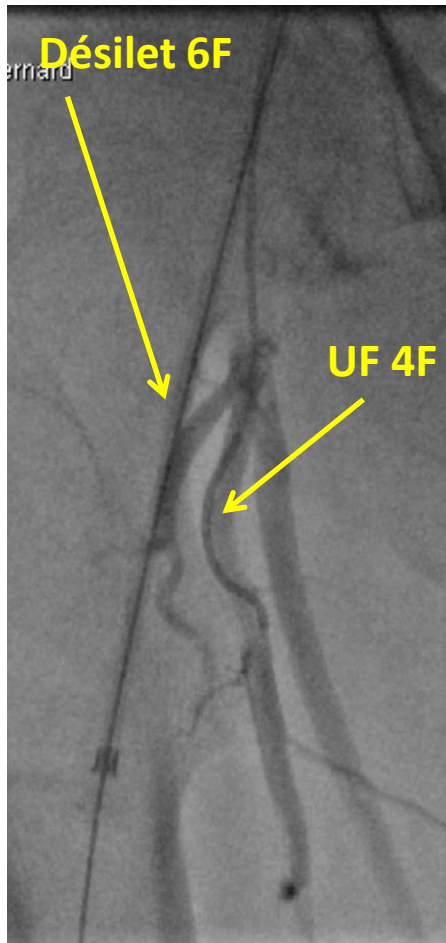
## STRATEGIE ?

- Ponction controlat 6F
- Crossover (UF 4F-Terumo)
- Hémostase au Ballon
- ATL + Stent autoexp



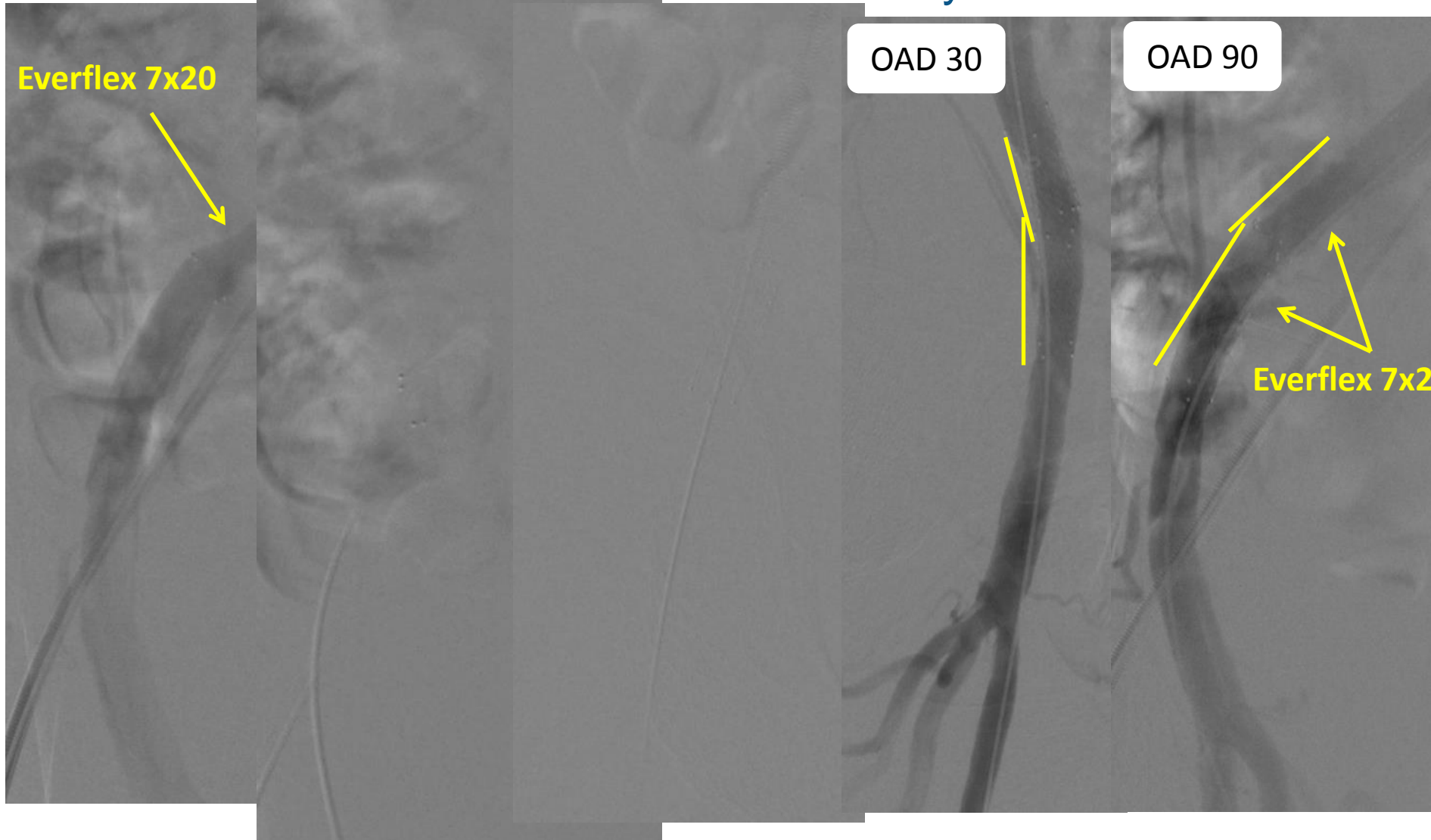
# Dissection iliaque

ATL primaire femme 84 y o

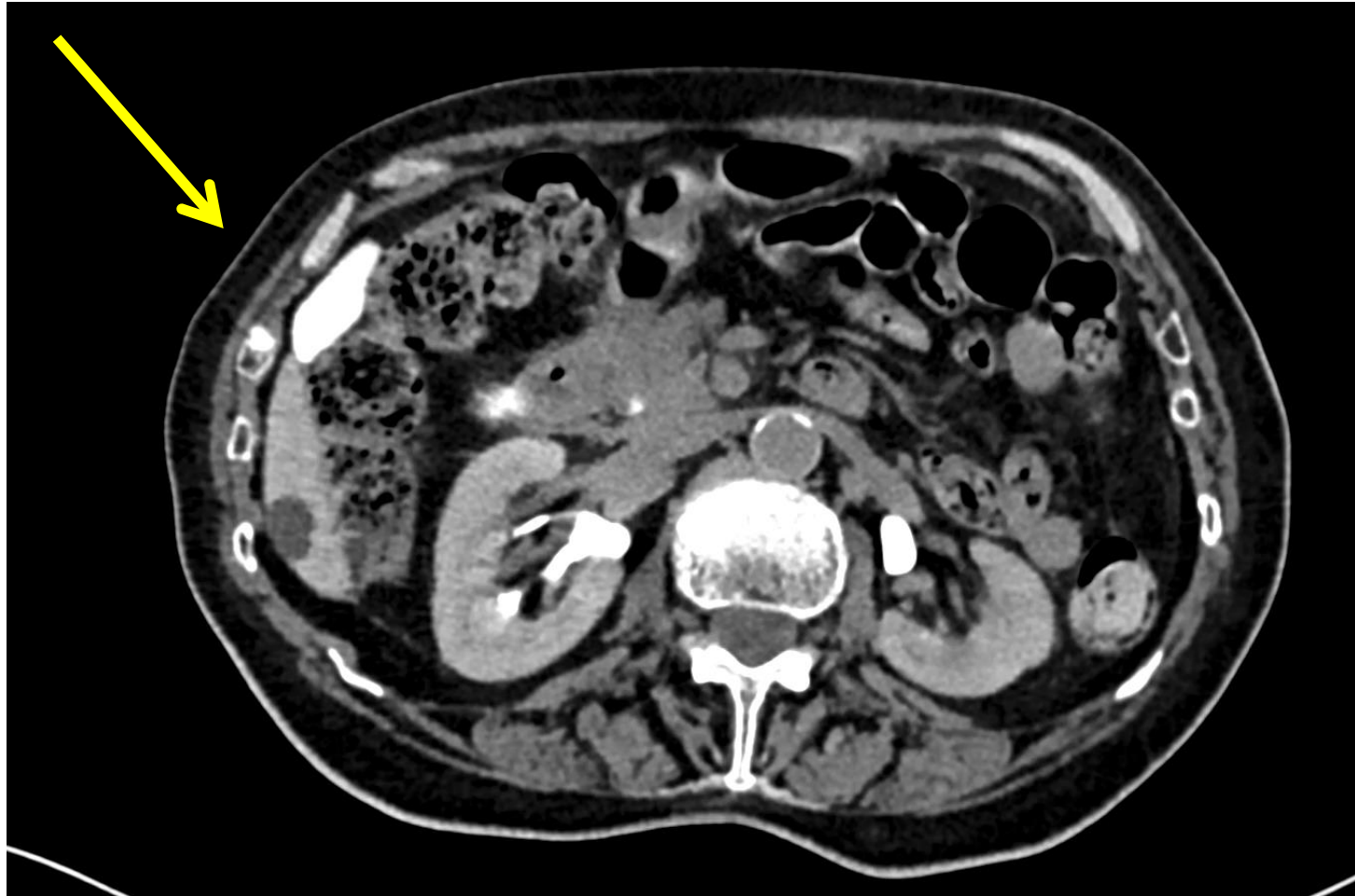


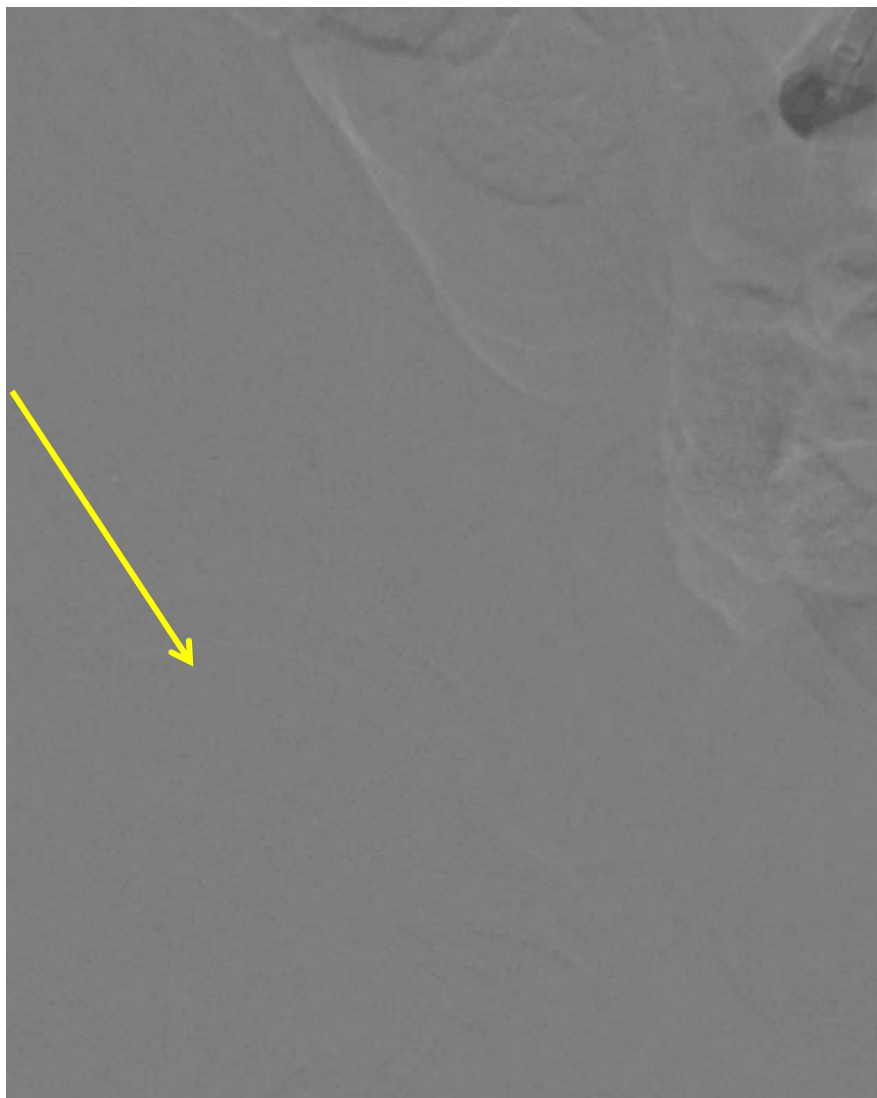
# Dissection iliaque

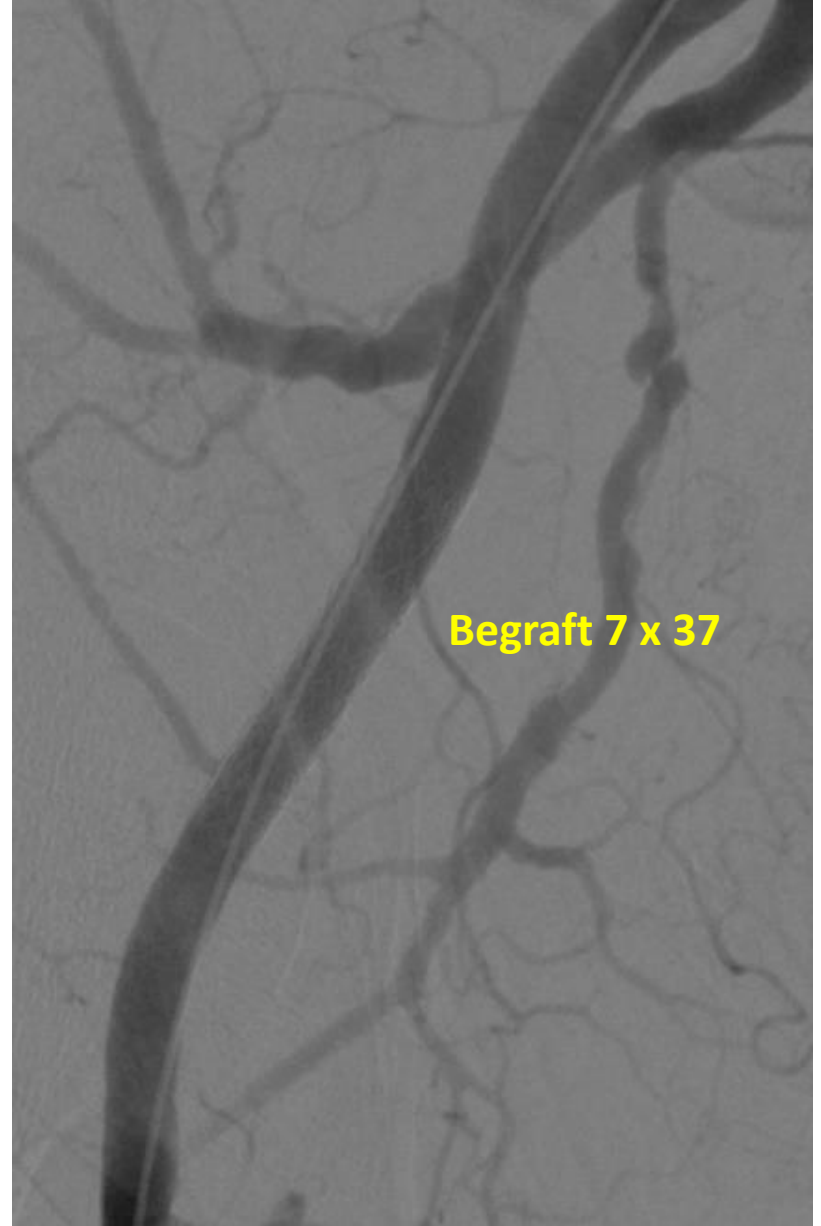
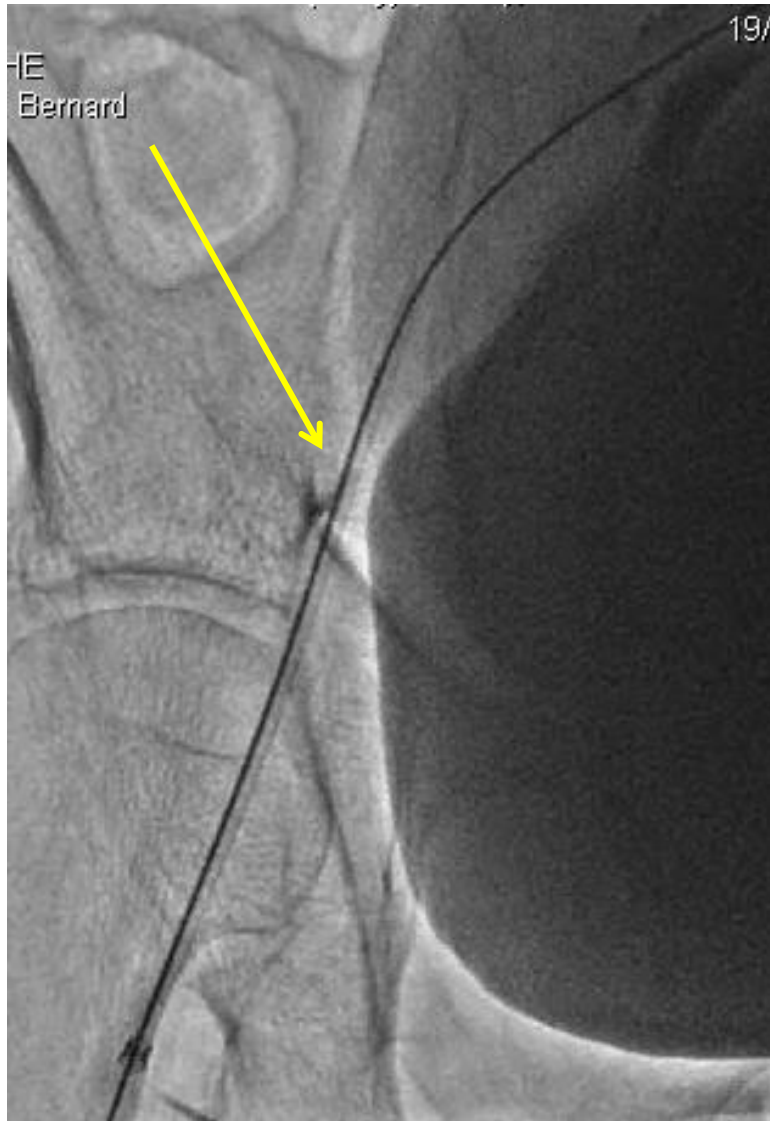
ATI primaire femme 84 y o



ATL IVA femme 86 cy o  
H3, douleur HC Dt hypoTA







# Occlusion post TAVI

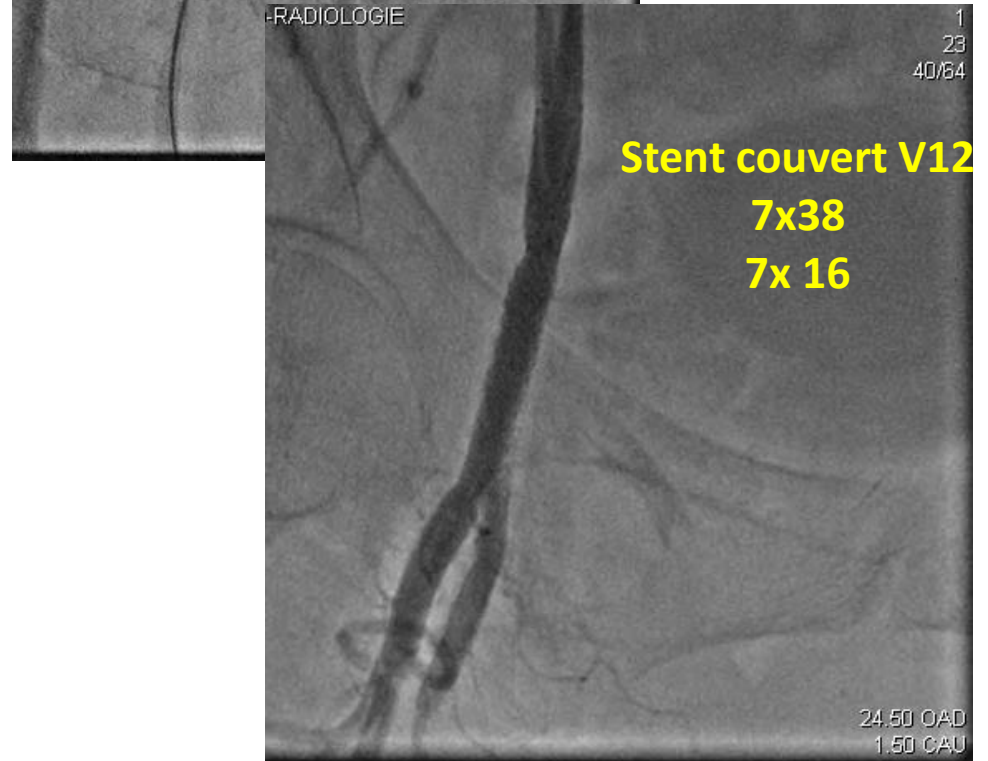


## STRATEGIE ?

- Abord controlat 7F
- Crossover (UF 4F-Terumo)
- Si echec franchissement, ponction rétro
- Stent couvert sur ballon



89119  
CHRISTOPHE  
M CARDIO-RADIOLOGIE





# Faux anévrisme AFC G au doppler

Homme 73 yo, Dialysé, AVK

ATL iliaque interne par crossover sur claudication fessière  
négligée depuis 10ans par chir vasc



## STRATEGIE ?

- Ponction controlat 6F
  - recherche collet = Profil G,  
retrait lent, injection douce
- Embolisation par coil

# Faux anévrisme AFC G

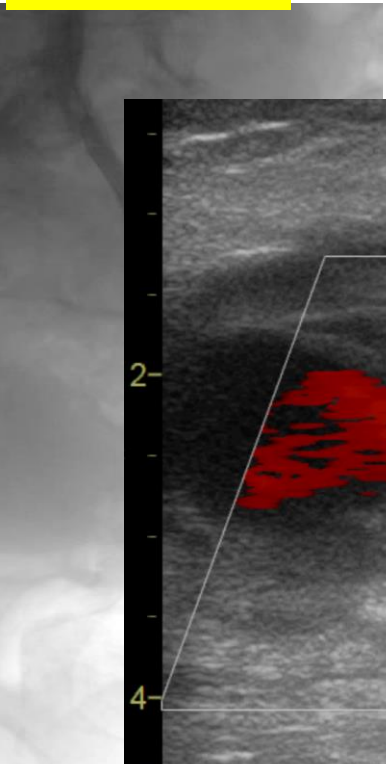


# Faux anévrisme Humérale G doppler après ATL complexe

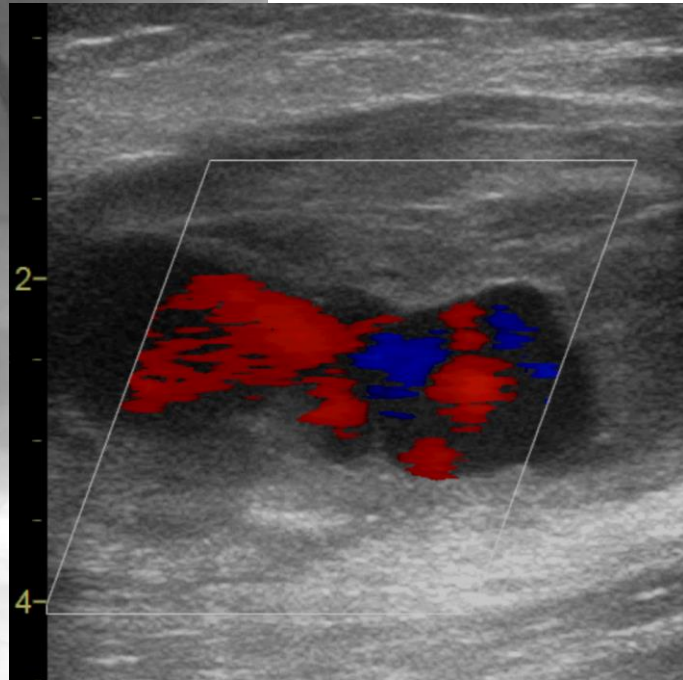
Désilet Terumo 6F  
huméral G 90 cm



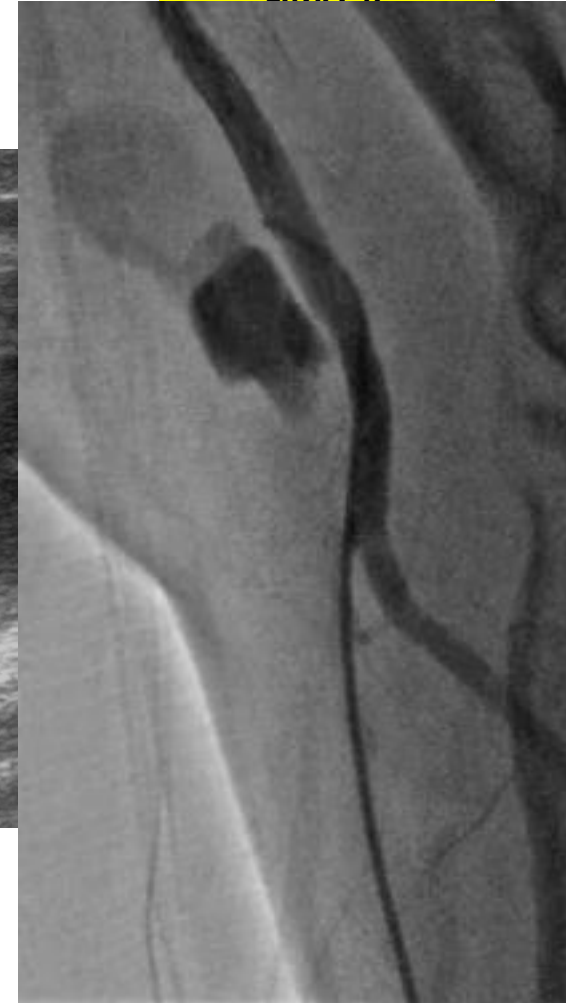
Supera 5 x 80  
AFC-AFP G



Guide en boucle  
« Bolia »AFP G



Désilet radial 4F  
LIMA 4F



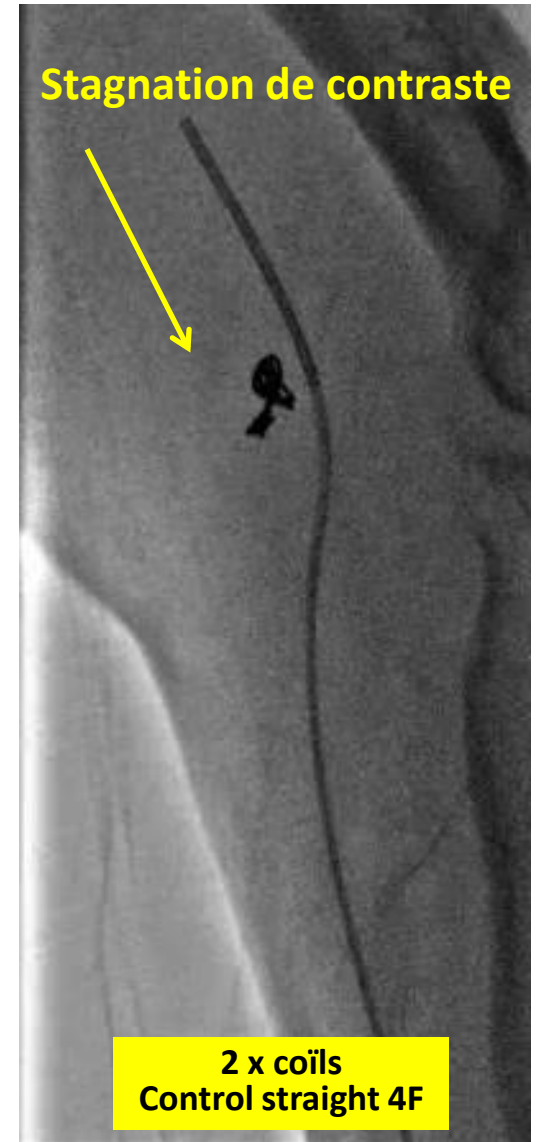
# Faux anévrisme Humérale G



LIMA 4F + Coïl

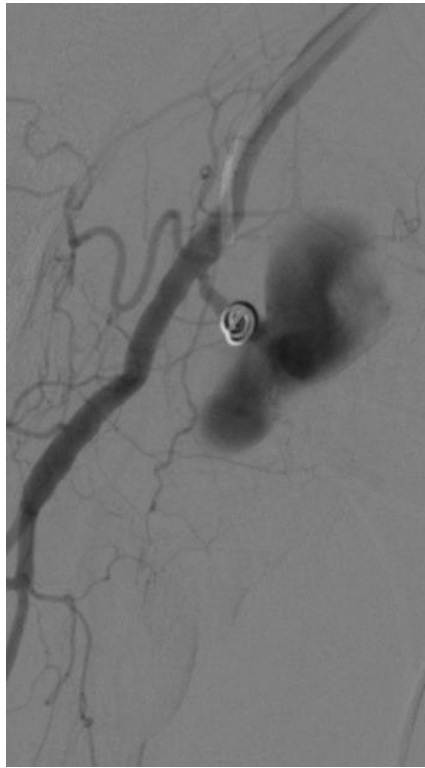
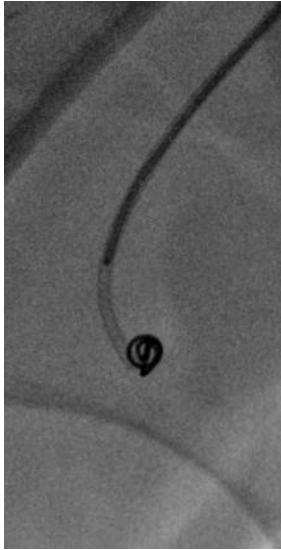
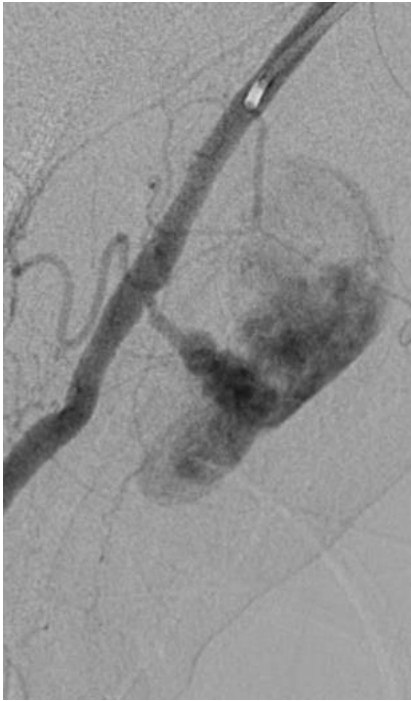


Coil mobile



Stagnation de contraste

2 x coïls  
Control straight 4F



**Tornado® Embolization Coil**

REF MWCE-35-10/5-TORNADO

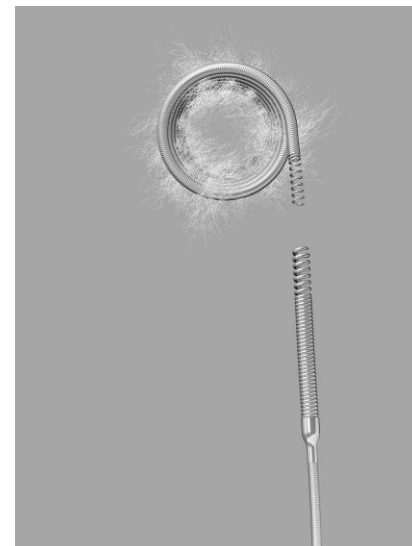
REF G10413

10mm 5mm .035" 12.8cm

Rx only

STERILE EO	2020-11-10	⊗	⚠	📖
LOT 6272154	2015-11-10	☀	☂	

COOK® REF MWCE-35-10/5-TORNADO



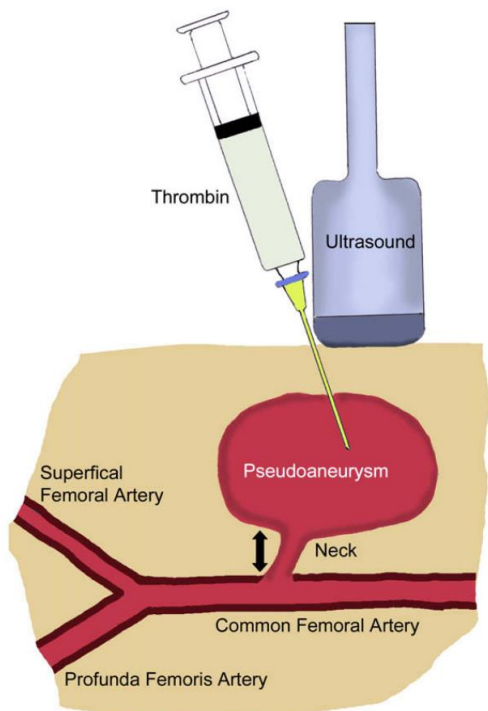
# Messages Coils

- Passer du temps à trouver l'origine (pas simple)
- Injection selective avec sonde adaptée (axe collet & support ++)
- Injection douce
- Plutôt coils de petite taille
- Si support limite ou petit collet ou petit FA :
  - Penser aux microcoils (avec microcath de largage)
- 1 seul coil dedans = mieux qu'un 2eme en dehors
- Si coil dépasse : stent au contact (couvert ou pas)
- Image de stagnation iode = suffisant (compression legere + poche glace)



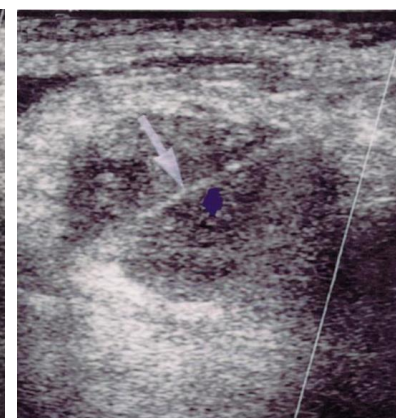
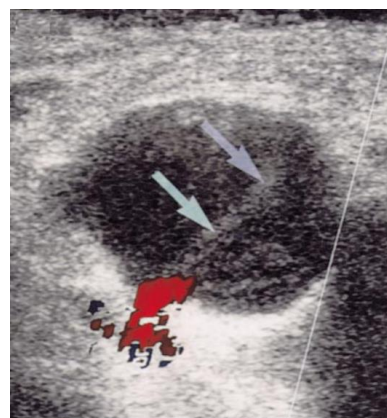
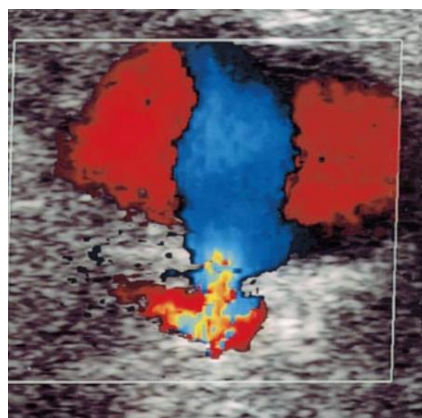
## Injection Thrombine Echoguidée

Hughes, Clin. Rad. 2000



**Figure 3** Schematic diagram illustrating the percutaneous treatment of a pseudoaneurysm by injection of thrombin under ultrasound guidance.

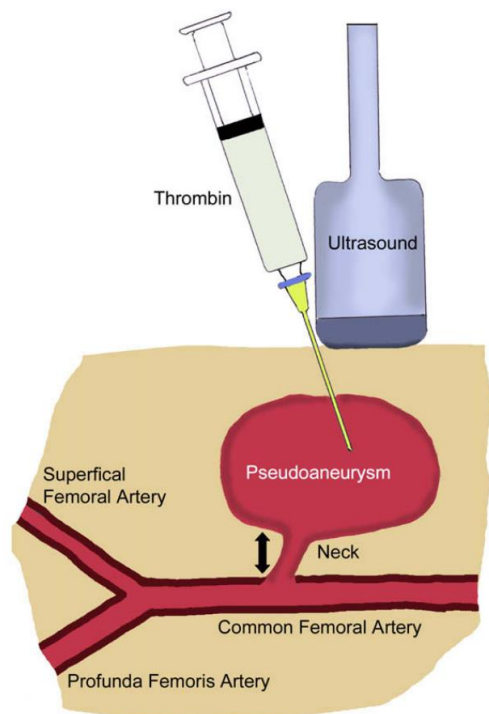
- Thrombine Bovine activée  
2000UI/mL
- 0,5-1,5 mL (3-4000UI)
- Occlusion en < 120s







## Injection Thrombine Echoguidée



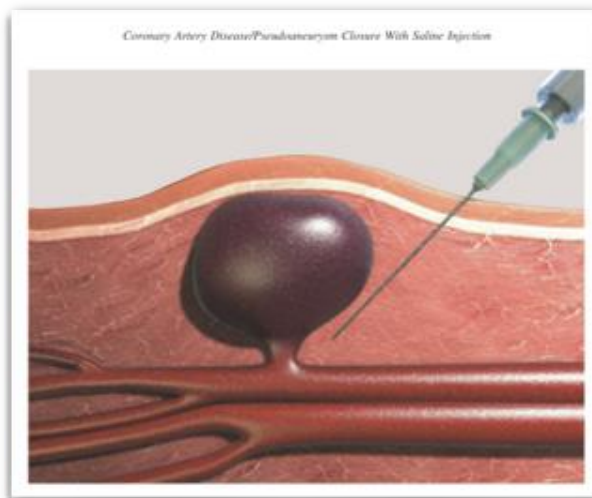
**Figure 3** Schematic diagram illustrating the percutaneous treatment of a pseudoaneurysm by injection of thrombin under ultrasound guidance.

- Succès 95%, récurrence 6%
- Risque thrombotique (A ou V)
- Thrombose incomplète (collet ++)
- Allergie ?
- Repos 24h au lit minimum
- COUT ++ Tisseel (hccb) = 600€
- (coil cook tornado : 90€)

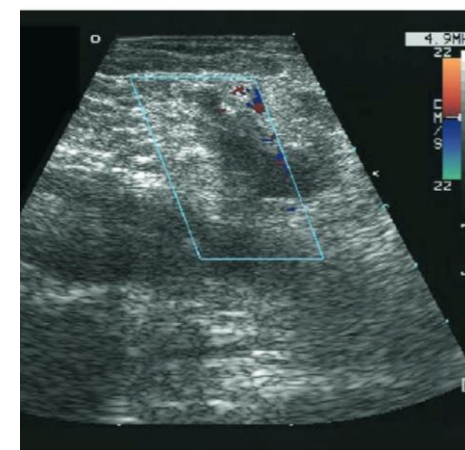
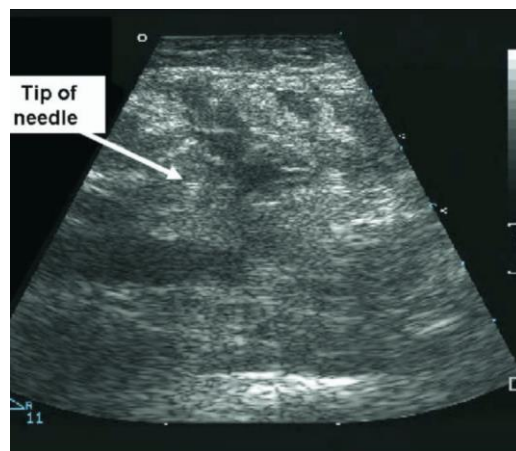


## Injection saline

Finkelstein Am J Card 2008



- Echoguidée, aiguille 018
- NaCl 0,9% (52mL) > occlusion du collet
- Compression 5min
- tps moyen 35min



- n=64 ; 5 échecs (1 tardif ; tous sous DAPT)



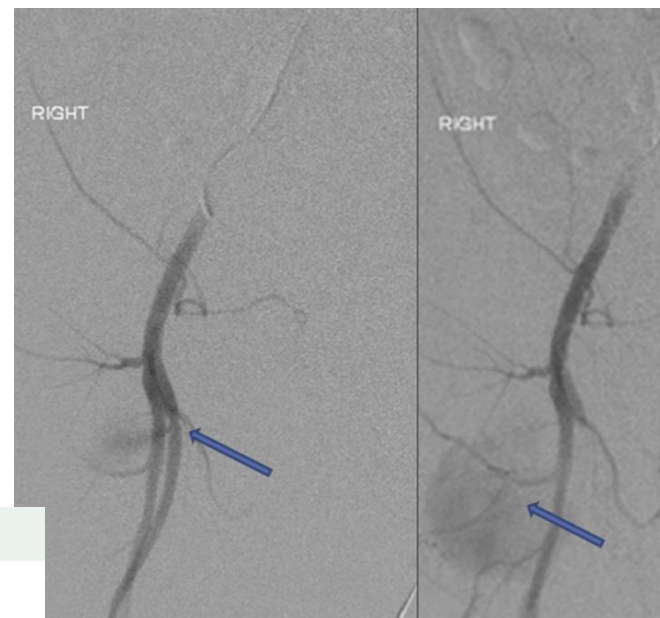
## Angioseal-Assisted Closure of Iatrogenic Refractory Femoral Arterial Pseudoaneurysm

A Novel Technique

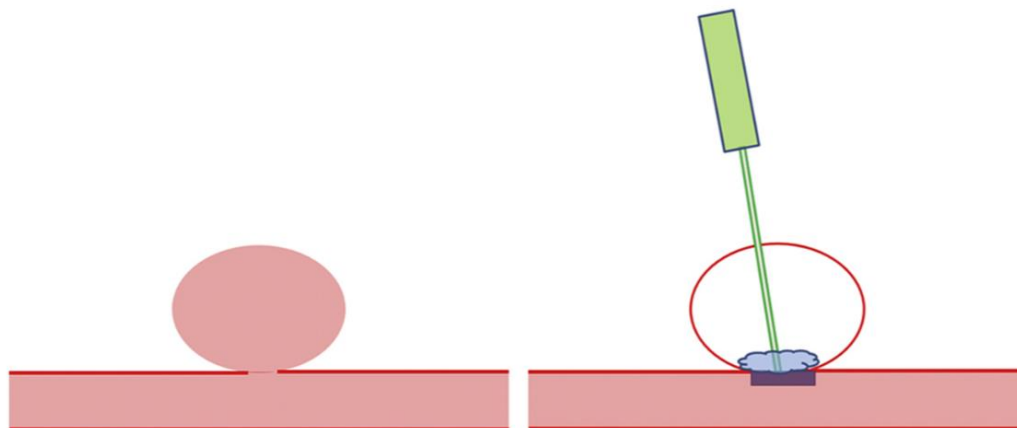
Adnan Hadziomerovic, MD,<sup>a</sup> Prasad Jetty, MD,<sup>b</sup> Ashish Gupta, MBBS, MD<sup>a</sup>

JACC: CARDIOVASCULAR INTERVENTIONS VOL. 9, NO. 6, 2016

MARCH 28, 2016:e55-7



**FIGURE 4** Diagram of the Angioseal Deployment

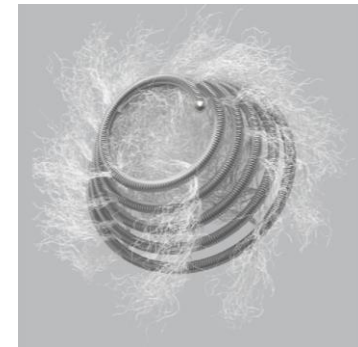
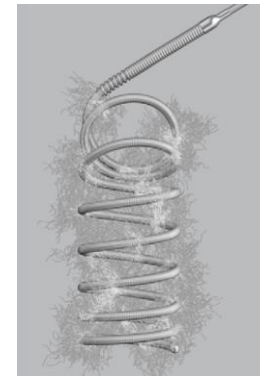
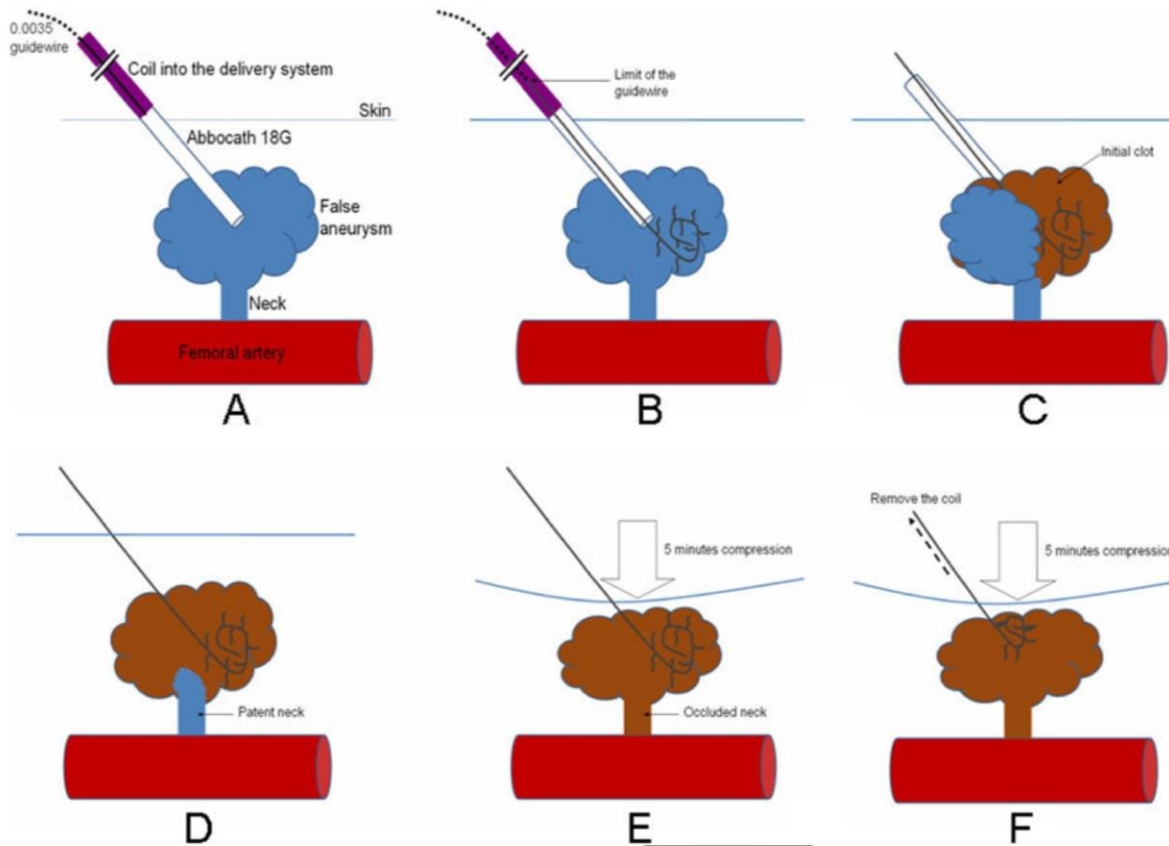


Demonstrates the concept of deployment of the Angioseal across the neck of the pseudoaneurysm.

# Compression assisted by removable coils as a new treatment for iatrogenic femoral pseudoaneurysms

Sergi Bellmunt, MD, Jaume Dilmé, MD, Antonio Barros, MD, and José Román Escudero, MD, *Barcelona, Spain*

J Vasc Surg 2011



**Coils cook® Retracta / Tornado**

# Tool box de base

<b>DESILET « crossover » 45cm</b>	<b>Fortress (biotronik) 6F / Destination (terumo) 6-7F 45cm</b>
<b>Sondes 4F</b>	JR4 - LIMA – MP / JR4 125cm
Coils	Tornado 035 4/3 (2,6cm) ou 6/3 (5,8)
Stents couverts Ballons	Begraft (Bentley) 6F / V12 (Maquet) 7F
Stents couverts autoexp.	Covera (bard) 8F / Viabahn (gore) 8F
Système de fermeture	Angioseal - Femoseal ?
Snare ?	

# conclusions

- On peut tout réparer : Il est important de rester **autonome**
- % **croissant** (radiale, structurel, periph)
- **Supériorité Endo** vs chir :
  - Rapide & efficace
  - Moins de complications ++
  - RAD rapide
- Techniques simples avec **peu de matériel**



