2019 euro PCR

Echo-Doppler evaluation of radial artery permeability following coronary angiography

Dr Rougé Alain

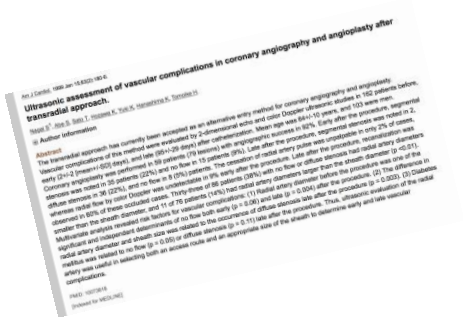
GHM de Grenoble

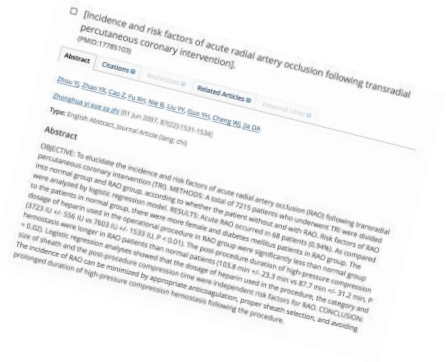
Speaker's name : Alain Rougé

☑ I do not have any potential conflict of interest to declare

Introduction

- Radial access has reduced the incidence of vascular complications and is now the first line of access in interventional cardiology.
- Nevertheless, this technique exposes to a 1 to 10% risk of radial artery occlusion based on series

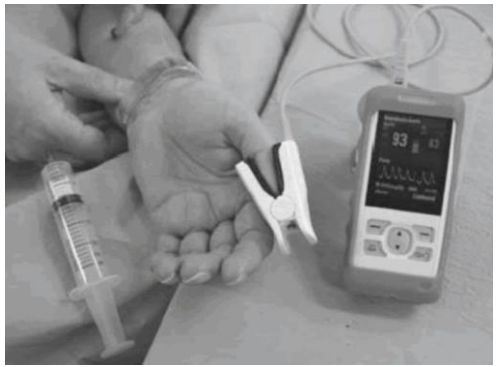

Ultrasonic assessment of vascular complications in coronary angiography and angioplasty after transradial approach.


[Incidence and risk factors of acute radial artery occlusion following transradial percutaneous coronary intervention].

* Zhou Y Incidence and risk factors of acute radial artery occlusion following transradial percutaneous coronary intervention 2007
Nagai S Ultrasonic assessment of vascular complications in coronary angiography and angioplasty after transradial approach. *Am J Cardiol* 1999

Methods

- We conducted a prospective, single-center and observational study
- During the all year 2018
- Including 1106 patients
- Compression by TR band ® system (Terumo®)
- Patent flow Haemostasis perfomed in the monitoring room
- Analysis echo Doppler the day of discharge
- Each RAO was checked at 3 months



Characteristics and Clinical Presentation

Characteristics	**n=1106**
Female gender	271 (24.5%)
Male gender	835 (75.5%)
Age (years)	70 +/-12
BMI	28,09 +/-13,58
Previous PCI	276 (24.9%)
Previous CABG	13 (1.2%)
Hypertension	616 (55.7%)
Diabetes	313 (28.3%)
Smoking history	553 (50.0%)
Dyslipidemia	547 (49.5%)
Creatinine clearance (ml/min)	78,34 +/- 34,4
Aspirin	971 (87.8%)
P2Y12 inhibitors	752 (67.9%)
VKA	62 (5.6%)
DOA	51 (4.6%)

Procedural characteristics

Characteristics	n=1106
Duration of the procedure (min)	35 +/- 25
Heparin dose (UI/Kg)	69,73 +/- 23,02
Transradial introducer sheath size (French Fr):	
5 Fr	527
Glidesheath Slender® 5 Fr	52
6 Fr	565
Glidesheath Slender® 6Fr	256
7 Fr	13
4 Fr	1

Results: Univariate predictors of RAO

11 RAO (0.99%)

Patent haemostasis: 99%

Characteristics	Patients without RAO n=1095	Patients with RAO n=11	p value
Female gender	265 (24.2%)	6 (54.5%)	0.006
Mean creatinine clearance (ml/min)	78.5 +/- 34.4	59.3 +/- 28.1	0.08
Hypertension	610 (55.7%)	6 (54.5%)	0.13
Dyslipidemia	542 (49.5%)	5 (45.5%)	0.09
Diabetes	308 (28.1%)	5 (45.5%)	0.73
Smoking	549 (50.1%)	4 (36.4%)	NS
Mean duration of the procedure (min)	52.1 +/- 25.4	47.6 +/-16	0.8
5Fr	521 (47.6%)	6 (54.5%)	NS
Glidesheath Slender® 5 Fr	52 (4.7%)	0	NS
6Fr	560 (51.1%)	5 (45.5%)	NS
Glidesheath Slender® 6Fr	255 (23.3%)	1 (9.1%)	NS
7Fr	13 (1.2%)	0	NS
Mean heparin dose (UI/kg)	69.9 +/- 22.9	51 +/-1 24.5	0.013
VKA	61 (5.6%)	1 (9.1%)	0.02
DOA	51 (4.7%)	0 (0%)	NS

Results: Multivariate predictors of RAO

Characteristics	Estimate	Std. Error	t value	p value
Female gender	0.02074	0.007156	2.898	0.0038
VKA	0.03691	0.01362	2.709	0.00685
Mean heparin dose (UI/kg)	-0.0002739	0.0001355	-2.021	0.0435

Follow-up

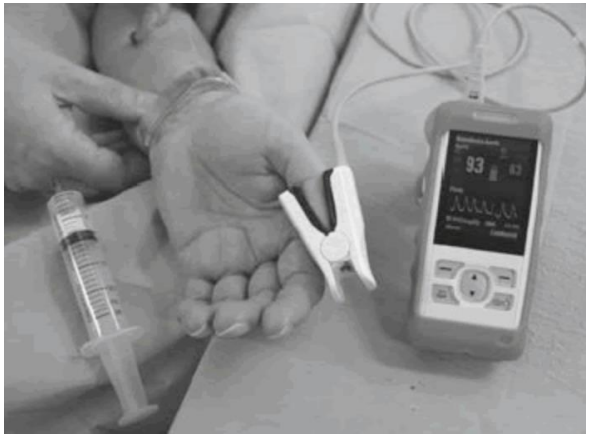
During patient follow-up:
-6 occlusions were confirmed at 3 months
-2 occlusions progressed favourably and spontaneously
-2 patients were lost to follow up
-One patient died prior to follow-up

No clinical symptoms.

Discussion

This very low rate can be exlained by several factors:

- Proper sheath size selection
- Anticoagulation
- Avoiding high pressure compression
- Patent flow Haemostasis



Conclusions

Our study focused on a large population comprising 1106 patients confirms that :

- Daily high attention to patent haemostasis

- close collaboration between each of the medical and paramedical professionals

=> can result in a low rate of RAO (0.99%)

Institut Cardio-Vasculaire
GROUPE HOSPITALIER MUTUALISTE DE GRENOBLE

2019 | euro PCR