

CONTEXT FOR CHANGE

Clinical forum in Complex Coronary Intervention

Torino, mercoledì 5 dicembre 2018

Turin Palace Hotel

Sala Macario - Via Sacchi, 8 - Torino



Clinical Case 6 “Breaking” the Rules in STEMI

CHIARA BERNELLI, MD

INTERVENTIONAL CARDIAC UNIT OSPEDALE SANTA CORONA PIETRA LIGURE (SV), ITALY

CLINICAL HISTORY

Male 71 y.o.

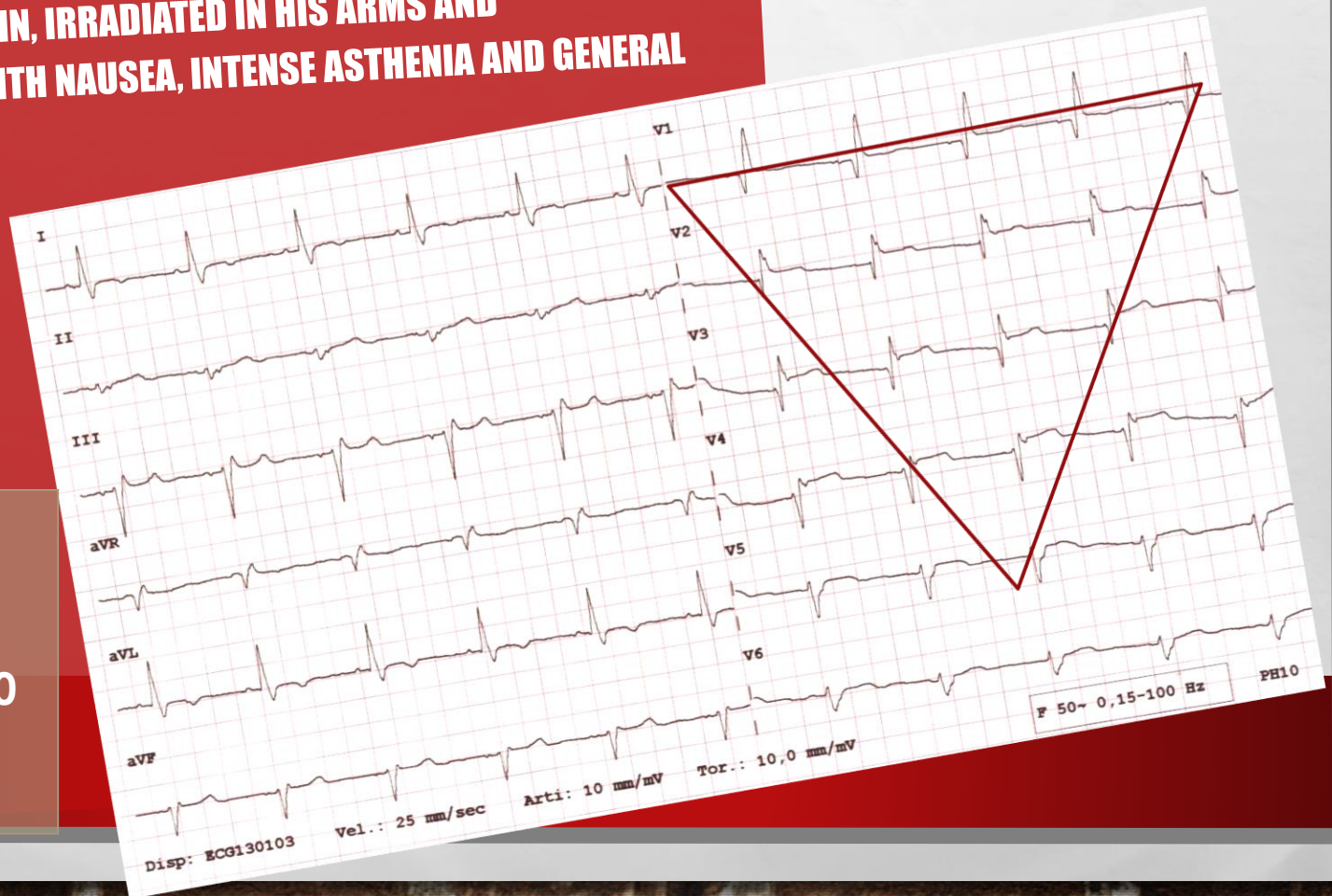
**polydistrict arthrosis;
previous endoscopic
removal of intestinal
polyp, benign prostatic
hypertrophy**

**CV Risk Factors:
Hypertension,
NIDDM ,
dyslipidemia**

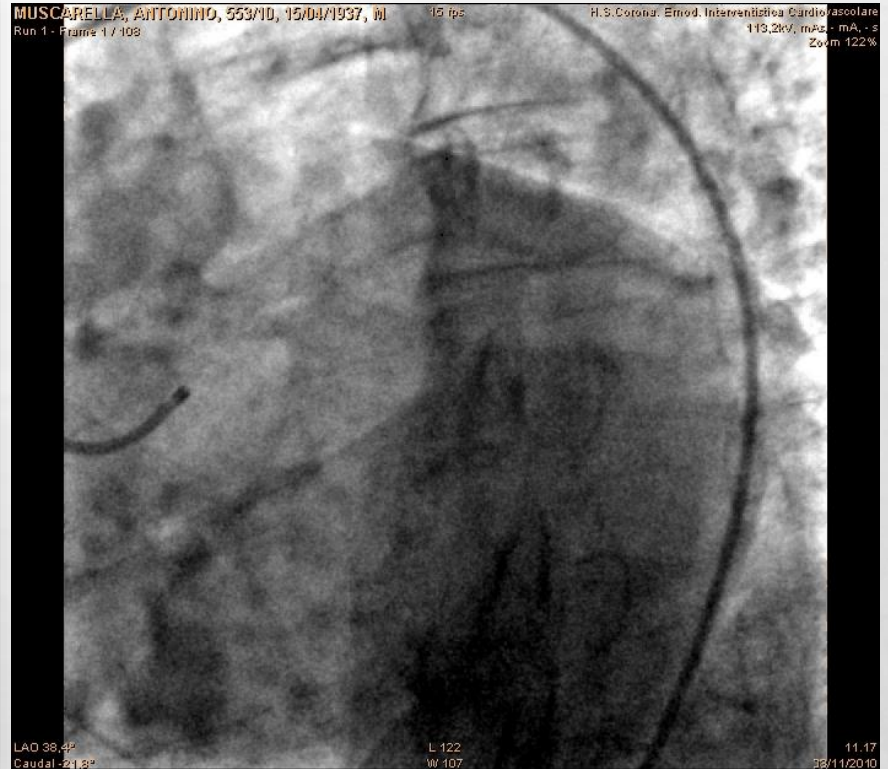
CLINICAL PRESENTATION

- 3 NOV '10 ON UPON AWAKENING HE EXPERIENCED OPPRESSIVE PAIN, IRRADIATED IN HIS ARMS AND ASSOCIATED WITH NAUSEA, INTENSE ASTHENIA AND GENERAL MALAISE.

ED:
- Flectadol
250 mg,
- plavix 600
mg,
- venitrin,



CORONARY ANGIOGRAPHY



CAD 1 VD: Reo-pro 8,8 ml bolo+infusion 17 ml/h, UFH 5000+2500 UI

INTERVENTIONAL APPROACH



✓ **Femoral Access 7 Fr GC XB 3,5, BMW wire**

After wiring TIMI 2, the lesion at the mid-LAD was noted to have severe calcification and superimposed thrombus.

PCI

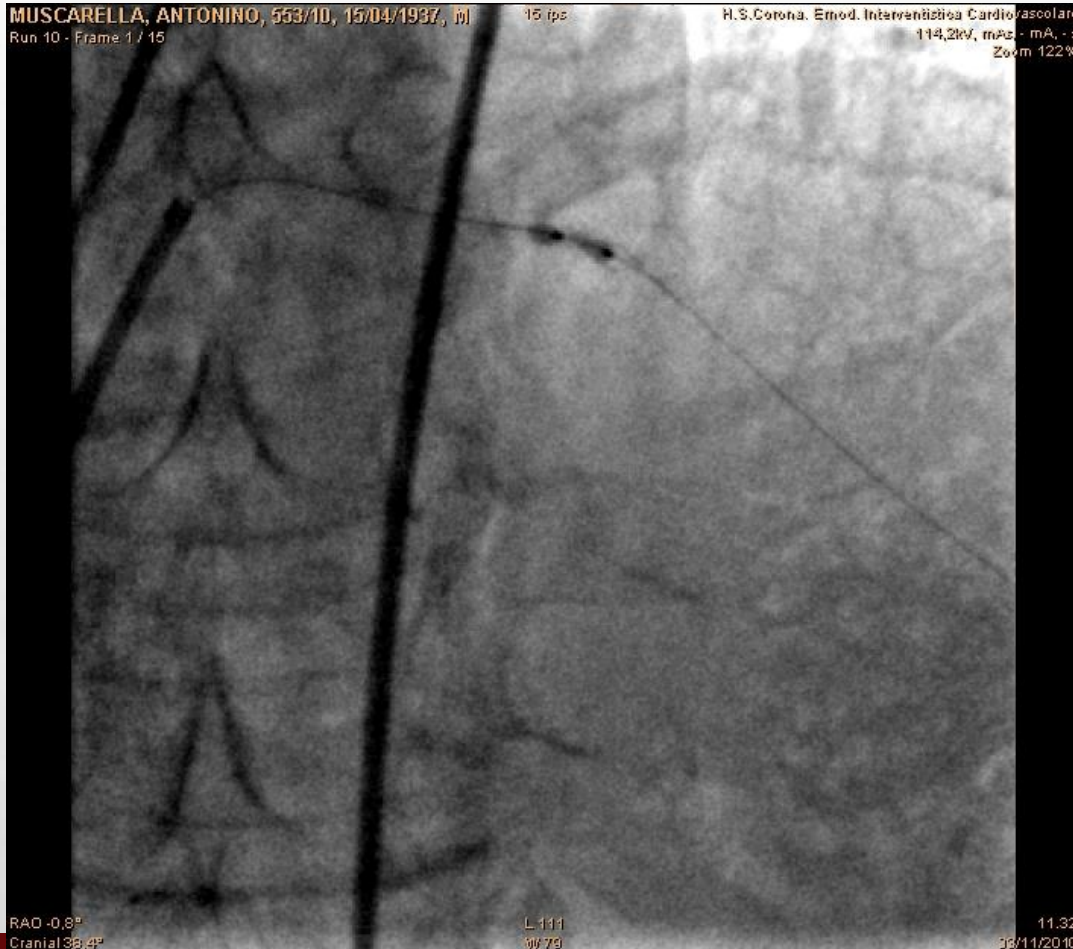
Filtro: Intensifica 8

Filtro: Intensifica 8

Filtro: Intensifica 8

Maverick 2,5x9mm, Quantum 2,5x15 mm 2,5x8mm @ 22 atm

UNDILATABLE LESION



If dog-bone effect of the balloon:

- **Do not oversize balloons**
- **Avoid dissections with balloon inflation**

These demonstrated complete “dogboning” with no plaque fracture

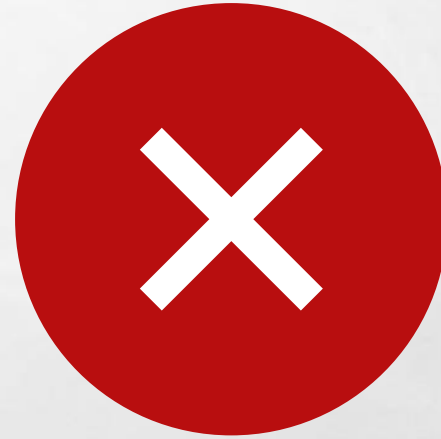
HOW TO TREAT?



MANAGEMENT



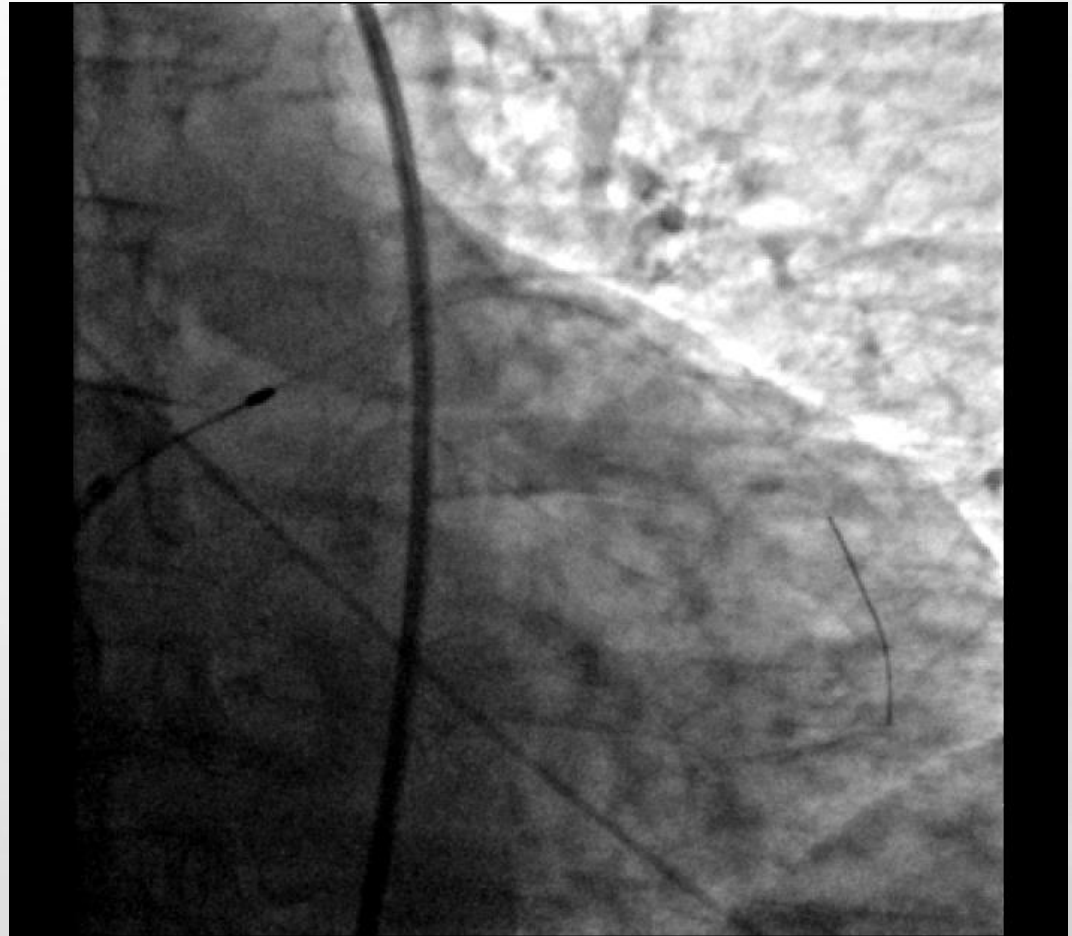
UP FRONT ROTATIONAL ATHERECTOMY (ROTABLATOR, BOSTON SCIENTIFIC CORP., MA) TO DEBULK THE CALCIFIED LESION IN LAD.



HOWEVER ROTATIONAL ATHERECTOMY IN ST-ELEVATION MYOCARDIAL INFARCTION (STEMI) IS TRADITIONALLY AVOIDED GIVEN THE CONCERN FOR SLOW OR NO REFLOW AND CONSIDERED AS A CONTRAINDICATION BY ITS MANUFACTURER IN A LESION WITH A VISIBLE THROMBUS.

STEMI ROTABLATOR

**Rotawire extra support,
1.5-mm burr at 160k
rpm.**



ROTA: BURR MOTION AND ROTATION SPEED

- **PECKING MOVEMENT BETTER THAN PUSH-PULL**
- **SHORT DURATION OF INDIVIDUAL RUNS (<30 SEC)**
- **INTERVALS BETWEEN RUNS**
- **AVOID DECELERATION > 5000 RPM**
- **SPEED BETWEEN 135.000-180.000 RPM**

Filtro: Intensifica 6

pre

38.40 LAO
21.80 CAU

03/11/2010 11.11.14

1

42

38/104

H.S. Corona. Emod. Intervent...

**AFTER
ROTABLATOR**

A 2.5-MM BALLOON WAS USED TO PREDILATE AND 2 TAXUS ELEMENT 3,0X20 MM+3,0X28 MM DES WERE DEPLOYED AT MID-LAD.

A 3.5-MM NONCOMPLIANT BALLOON WAS USED TO POSTDILATE THE STENTS, ESTABLISHING TIMI 3 FLOW AND EXCELLENT ANGIOGRAPHIC RESULT.

CLINICAL COURSE



1
There was no peri- or postprocedural complication. The ST-segments resolved.

2
Echocardiogram showed a non-dilated or hypertrophic left ventricle with apex, 2/3 of the anterior wall and 2/3 of the interventricular septum akinesia. LVEF 40-45%.

3
Troponin T peak: 4.53 ng / ml in the first day (peak CK 971 U / l, CK MB 62.57). total cholesterol 141, LDL 74, HDL 28, Triglycerides 196 mg / dl. 10% glycated HB.

4
Patient was discharged after 4 days on METFORMINA 850MGx3, SELOKEN 100 MG, PEPTAZOL 40 MG, DAPAROX 20 MG AVODART 0.5 MG SOLOSA 2 MG COVERSYL 10MG CARDIOASPIRIN 100MG PLAVIX 75MG TORVAST 80MG PRADIF 0.4 MG

FOLLOW-UP



**15-02-2011 ... VISIT OF
CONTROL: ASYMPTOMATIC**

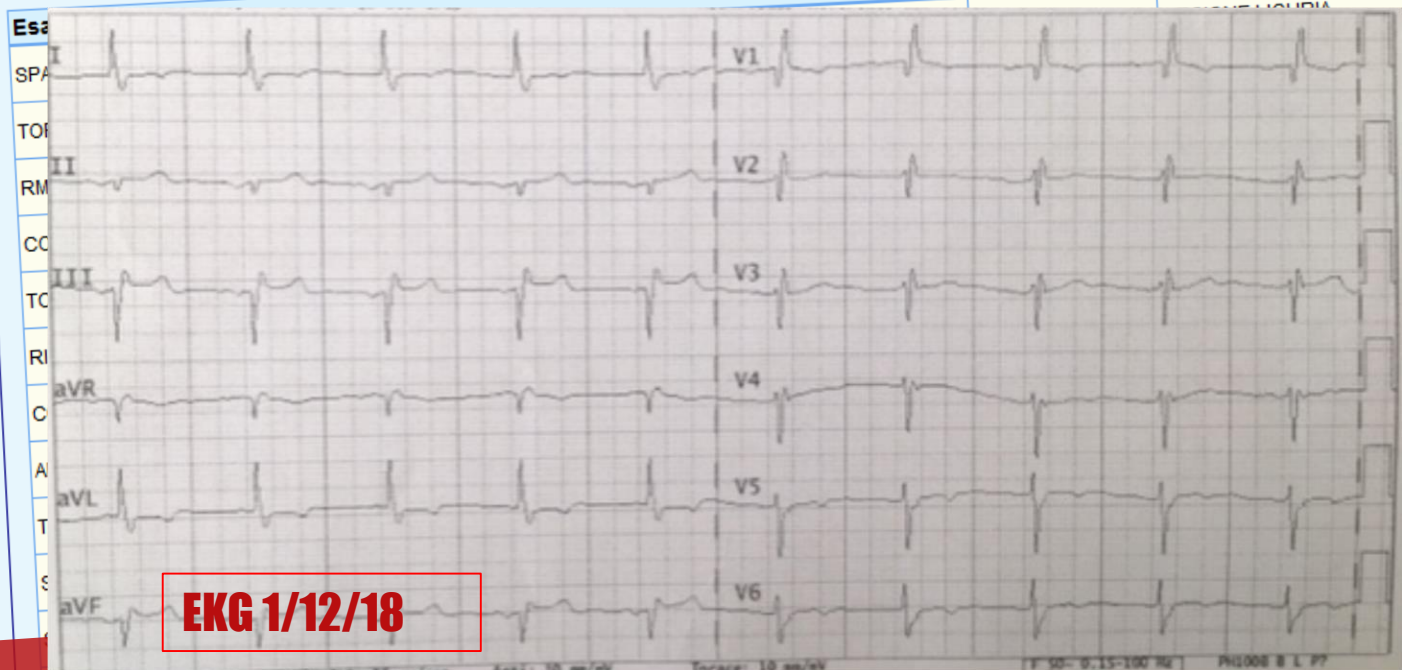


**ECHO CONCENTRIC SYMMETRIC
HYPERTROPHY PARIETAL
THICKNESS; HYPOKINESIA OF THE
APEX AND OF THE DISTAL SEGMENT
OF THE ANTERIOR WALL; GLOBAL
SYSTOLIC FUNCTION PRESERVED
(EF 50%).**



**1-12-2018 ASYMPTOMATIC
FOR ANGINA
ED ACCESS FOR ACUTE
CHOLECYSTITIS**

- DH
- PS
- Dati Labo
- Cartelle Ambulatorio
- Visite Ambulatorio
- Patient Summary
- PT
- Documenti Paziente
- Prestazioni Strumentali



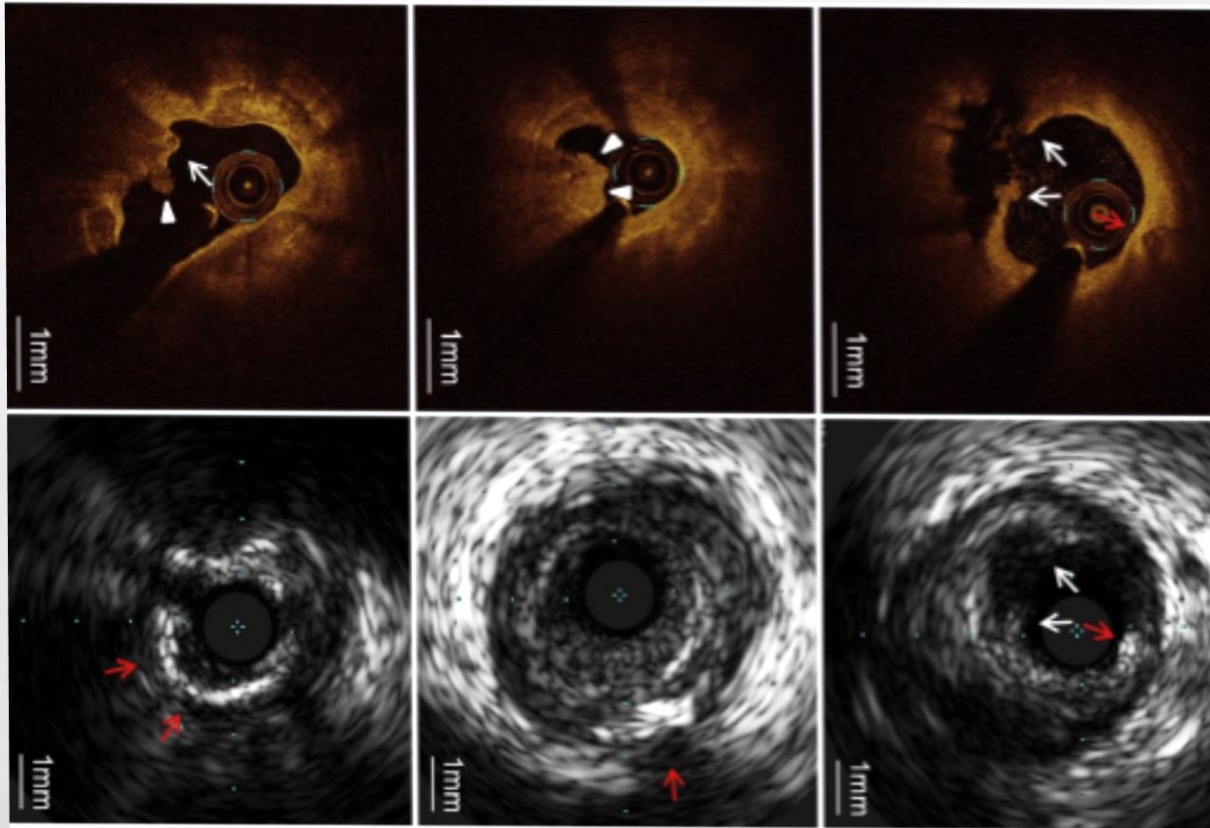
BACINO 1 PROIEZIONE	23/04/2012	ORTOPEDIA GSL (ALBENGA)
ANCA SN		ORTOPEDIA GSL (ALBENGA)
		ORTOPEDIA GSL (ALBENGA)
	09/02/2011	PS PIASTRA (PL)
	24/08/2009	REGIONE LIGURIA
	24/08/2009	REGIONE LIGURIA
	05/05/2009	REGIONE LIGURIA
		REGIONE LIGURIA

LONG TERM FOLLOW-UP



UNDERLYING PLAQUE MORPHOLOGIES IN STEMI

Calcified Nodules 8% Plaque Erosion 27% Plaque Rupture 64%



Higuma et al. JACC Interv, 9, 2015

Feasibility and clinical outcome of rotational atherectomy in patients presenting with an acute coronary syndrome.

Allali A¹, Abdelghani M¹, Mankarious N¹, Abdel-Wahab M², Richardt G¹, Toelg R¹.

⊕ Author information

Abstract

OBJECTIVES: We aimed to investigate the feasibility, safety, and outcome of rotational atherectomy (RA) in the setting of acute coronary syndrome (ACS).

BACKGROUND: Limited data are available on the use of RA in patients presenting with ACS.

METHODS: This analysis is from an observational registry, which enrolled all consecutive patients undergoing RA in a tertiary center. Between 2002 and 2015, 433 patients with stable coronary artery disease (SCAD) were treated with RA. Within the same period, 108 patients with ACS (8 STEMI and 100 NSTEMI-ACS) were treated with RA. Procedural success was similar between the ACS and the SCAD groups (96.6% vs. 96.4%, $P = 0.90$), and no significant difference was observed in procedural complications (slow-flow: 0.8% vs. 2.8%, $P = 0.32$; coronary dissection: 6.8% vs. 7.2%, $P = 1.00$; coronary perforation: 0.8% vs. 1.7%, $P = 0.69$). In-hospital MACE rates were comparable (3.7% vs. 3.2%, $P = 0.77$). The risk of MACE within 24 months was higher in ACS patients (39.9% vs. 22.4%, log-rank $P = 0.002$; HR: 1.39; 95% CI: 1.12-1.73; $P = 0.003$). Multivariable Cox regression analysis identified left ventricular ejection fraction (HR 0.97; 95% CI: 0.85-0.99; $P = 0.001$), treatment with a BMS (HR 2.22, 95% CI: 1.15-4.25, $P = 0.02$) or early generation drug eluting stent (HR 1.99; 95% CI 1.09-3.64; $P = 0.03$), as well as ACS presentation (HR 1.53; 95% CI: 1.02-2.29; $P = 0.04$) as predictors of MACE at two years.

CONCLUSIONS: RA is technically feasible and safe in high risk patients presenting with ACS. However, successful application of RA did not mitigate the higher rate of long term cardiovascular events.

ROTational ATherectomy in acute coronary syndrome: early and midterm outcomes from a multicentre registry.

Iannaccone M¹, Piazza F, Boccuzzi GG, D'Ascenzo F, Latib A, Pennacchi M, Rossi ML, Ugo F, Meliga E, Kawamoto H, Moretti C, Ielasi A, Garbo R, Franqieh AH, Hildick-Smith D, Templin C, Colombo A, Sardella G.

⊕ Author information

Abstract

AIMS: The safety and efficacy of rotational atherectomy (RA) in patients presenting with non-ST-elevation myocardial infarction (NSTEMI-ACS) remain to be defined. The aim of our study was to assess the safety and efficacy of RA in NSTEMI-ACS patients with reference to both short- and long-term follow-up.

METHODS AND RESULTS: This was an observational retrospective registry which enrolled all consecutive patients undergoing RA, comparing patients with stable angina (SA) and NSTEMI-ACS. In addition, ACS patients were matched with those not undergoing RA. The primary endpoint was angiographic success. Procedural complications and in-hospital MACE were secondary endpoints along with MACE during follow-up. One thousand three hundred and eight patients were included: 37% (484) with an NSTEMI-ACS diagnosis and 63% (824) in the SA group. Angiographic success did not differ between the groups (98.8% vs. 99.2%, $p=0.57$). By univariate analysis procedural complications were more frequent in the NSTEMI-ACS group (11.3% vs. 8.0%, $p=0.04$). In-hospital MACE rates were comparable (5.7% vs. 5.8%, $p=0.93$); by multivariate analysis NSTEMI-ACS patients showed a non-significant trend towards a higher risk of adverse events (HR 2.39, CI: 0.96-5.96, $p=0.061$). MACE after a median of 27.9 months was significantly higher in the NSTEMI-ACS group compared with the SA group (32.4% vs. 24.2%, log-rank $p<0.001$), results confirmed by multivariate analysis. After propensity score matching, NSTEMI-ACS patients undergoing RA had similar outcomes to ACS patients who did not undergo RA (16% vs. 13%, log-rank $p=0.14$).

CONCLUSIONS: Rotational atherectomy has similar safety and angiographic outcome in patients with NSTEMI-ACS or SA. The higher rate of adverse cardiac events at follow-up in NSTEMI-ACS patients undergoing RA is comparable with a matched population of NSTEMI-ACS patients not undergoing RA.

CLOSING REMARKS

Often in a STEMI, the interventionalist is faced with challenging circumstances that require uncustomary solutions.

The concomitant existence of an acute ST elevation myocardial infarction (STEMI) and a truly undilatable lesion is not a common occurrence, although STEMI lesions can be calcified and sometimes difficult to fracture.

Rotational atherectomy is relatively contraindicated in the setting of acute coronary thrombosis such as STEMI because of the risk of potential platelet activation by the rotablator

This case demonstrates the successful use of rotational atherectomy to facilitate dilation and revascularization of the culprit lesion in a patient with acute anterior STEMI with ongoing chest pain and heavily calcified culprit lesion.

**HAVE ALL
THE TOOLS
THAT CAN
SERVE YOU
READY ...**





Thanks for the attention !!!!!!!!!!!!!