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Case Presentation :

- A male patient, 37 years old.
- Obese, hypertensive, dyslipidemia , diabetic and not smoker.
- **C/O:** typical exertional retrosternal chest pain since 1 month, pain relieved with rest and nitroglycerin.
- **Past History:** previous PCI with DES in LAD and BMS in distal RCA 18 months ago.
- **ECG:** ST depression in II, III, and avf.
- **Echo:** SWMA (mid, apical inferior and basal septal) wall hypokinesia.
- **Lab:** Cardiac troponin, and CKMB were positive.

Angiography and PCI technique

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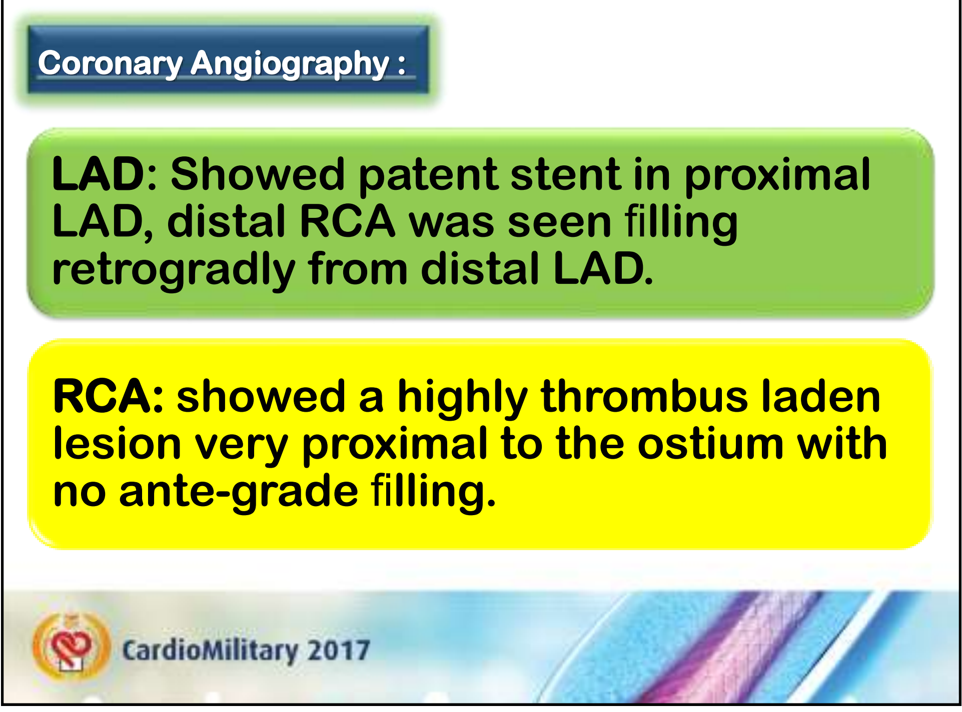

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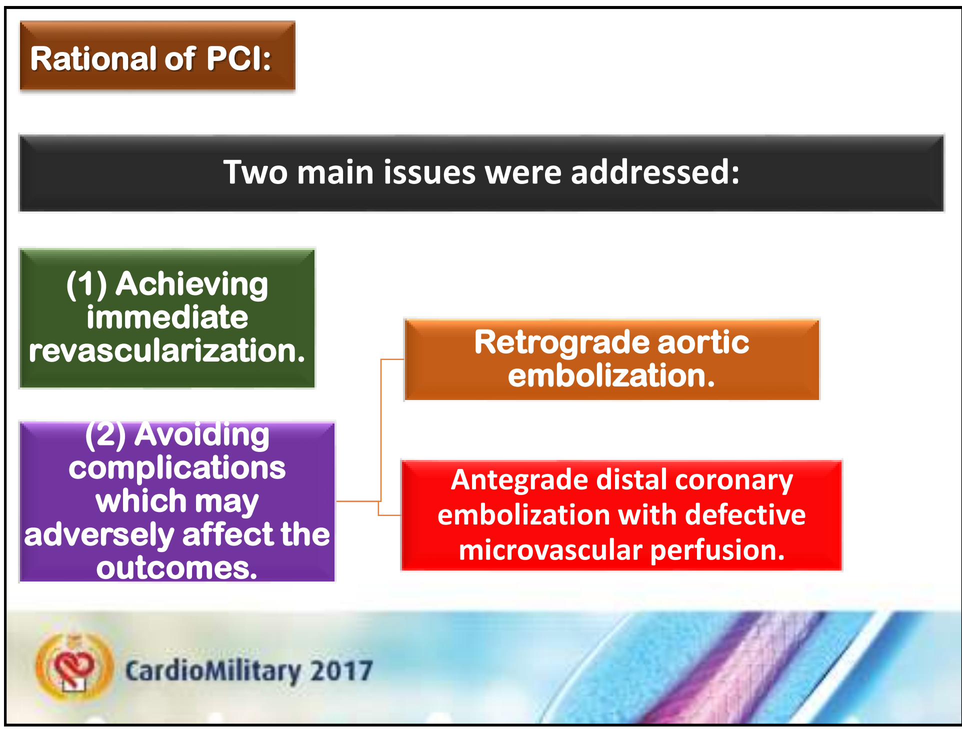
Rational of PCI:
Two main issues were addressed:
(1) Achieving immediate revascularization.
(2) Avoiding complications which may adversely affect the outcomes.
Retrograde aortic embolization.
Antegrade distal coronary embolization with defective microvascular perfusion.
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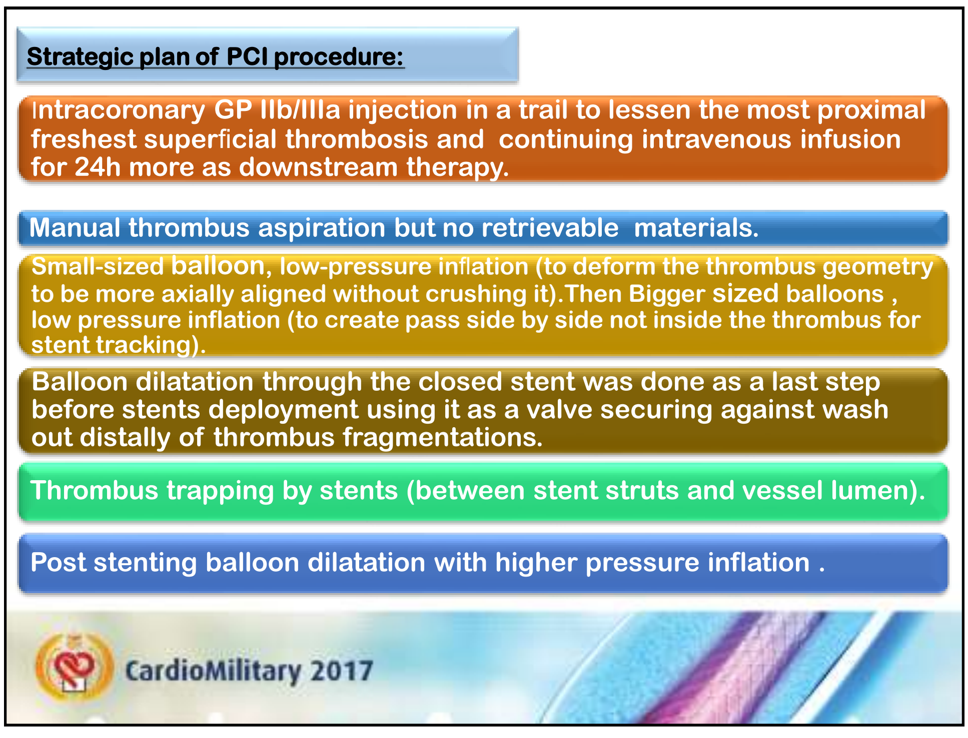
Strategic plan of PCI procedure:
Intracoronary GP IIb/IIIa injection in a trail to lessen the most proximal freshest superficial thrombosis and continuing intravenous infusion for 24h more as downstream therapy.
Manual thrombus aspiration but no retrievable materials.
Small-sized balloon, low-pressure inflation (to deform the thrombus geometry to be more axially aligned without crushing it).Then Bigger sized balloons , low pressure inflation (to create pass side by side not inside the thrombus for stent tracking).
Balloon dilatation through the closed stent was done as a last step before stents deployment using it as a valve securing against wash out distally of thrombus fragmentations.
Thrombus trapping by stents (between stent struts and vessel lumen).
Post stenting balloon dilatation with higher pressure inflation .
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PCI procedural steps :

- The patient was loaded with 10,000 IU unfractionated heparin and 600mg of Clopidogrel, Femoral axis.
- RCA was cannulated with JR4 6F GC; PT2 MS GW was used to cross the thrombus and passed distally through the distal stent .
- Aspiration was tried several times but failed to drag any thrombus materials.
- IC tirofiban was given in recommended dose, and pre-dilatation was done using up escalating balloon dilatation with low pressure so as to deform the geometry of the thrombus without crushing it in a special way.
- Trapping of the residual thrombus by 2 DES, Xience V 3.5*38 distally across the previous stent and another Xience V 3.5*33 overlapping the first stent.
- Finally, post-dilatation was carried out with non-compliant balloon, achieving a successful TIMI 3 flow.

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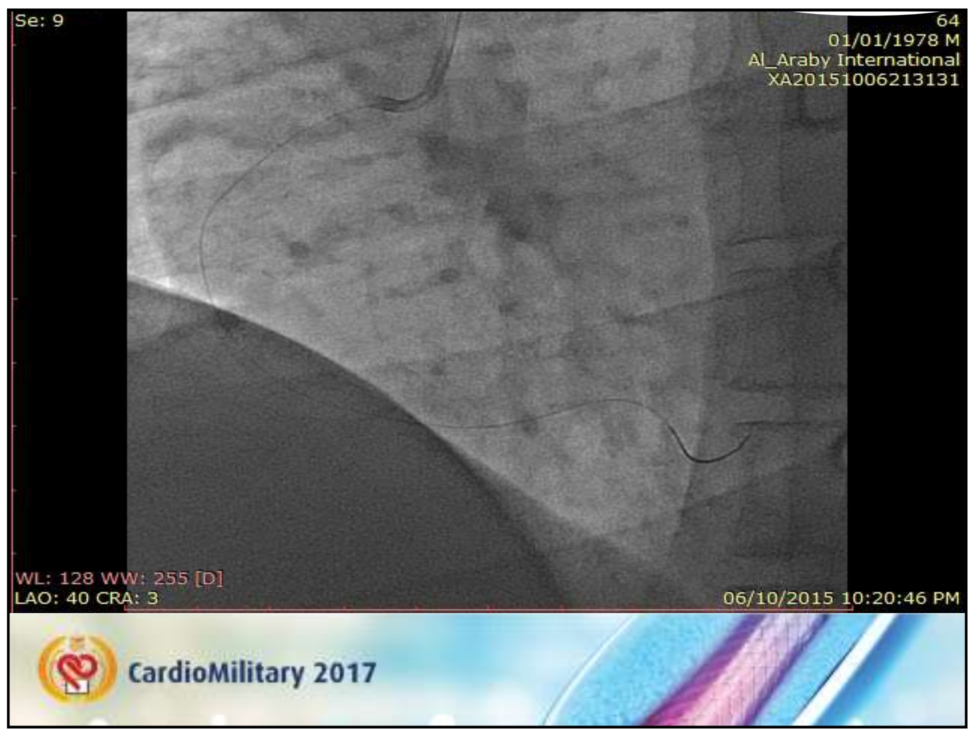

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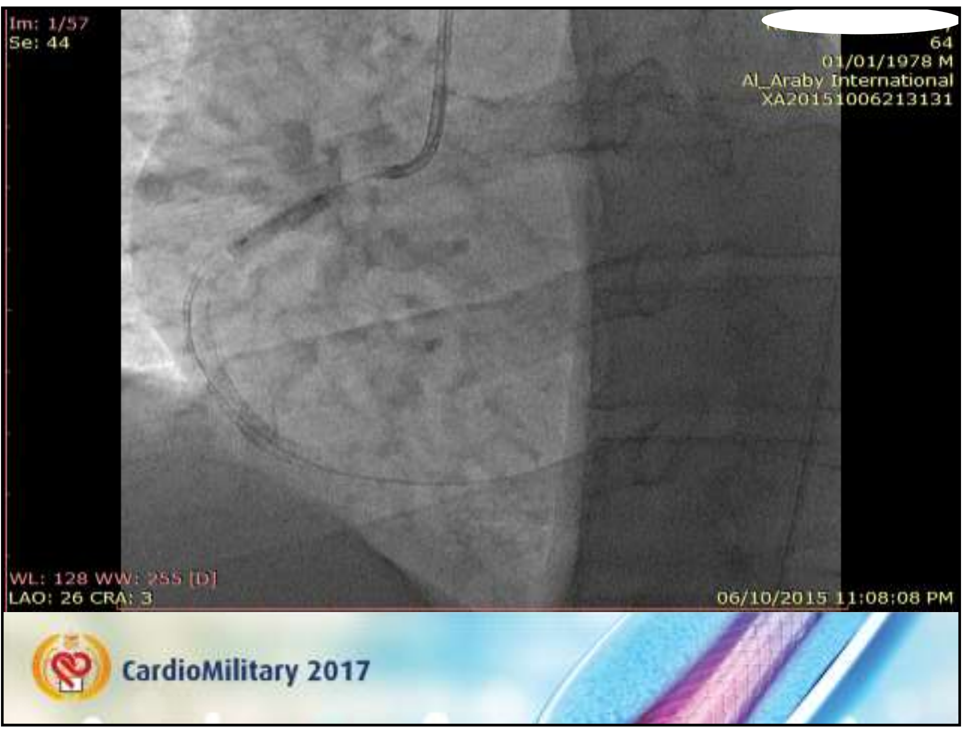
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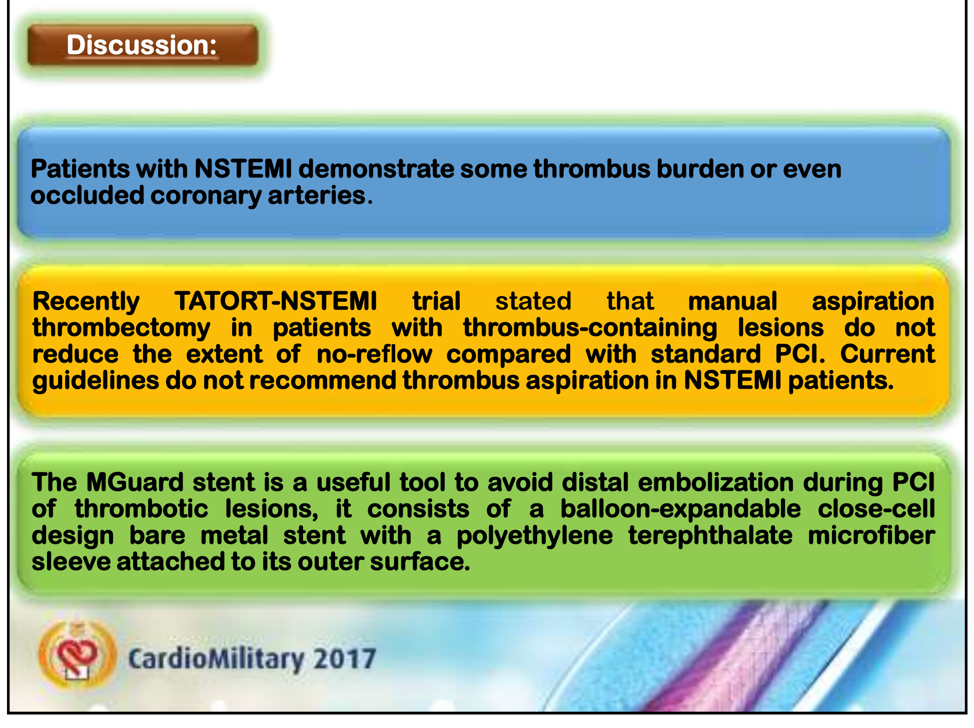
Discussion:
Patients with NSTEMI demonstrate some thrombus burden or even occluded coronary arteries.
Recently TATORT-NSTEMI trial stated that manual aspiration thrombectomy in patients with thrombus-containing lesions do not reduce the extent of no-reflow compared with standard PCI. Current guidelines do not recommend thrombus aspiration in NSTEMI patients.
The MGuard stent is a useful tool to avoid distal embolization during PCI of thrombotic lesions, it consists of a balloon-expandable close-cell design bare metal stent with a polyethylene terephthalate microfiber sleeve attached to its outer surface.
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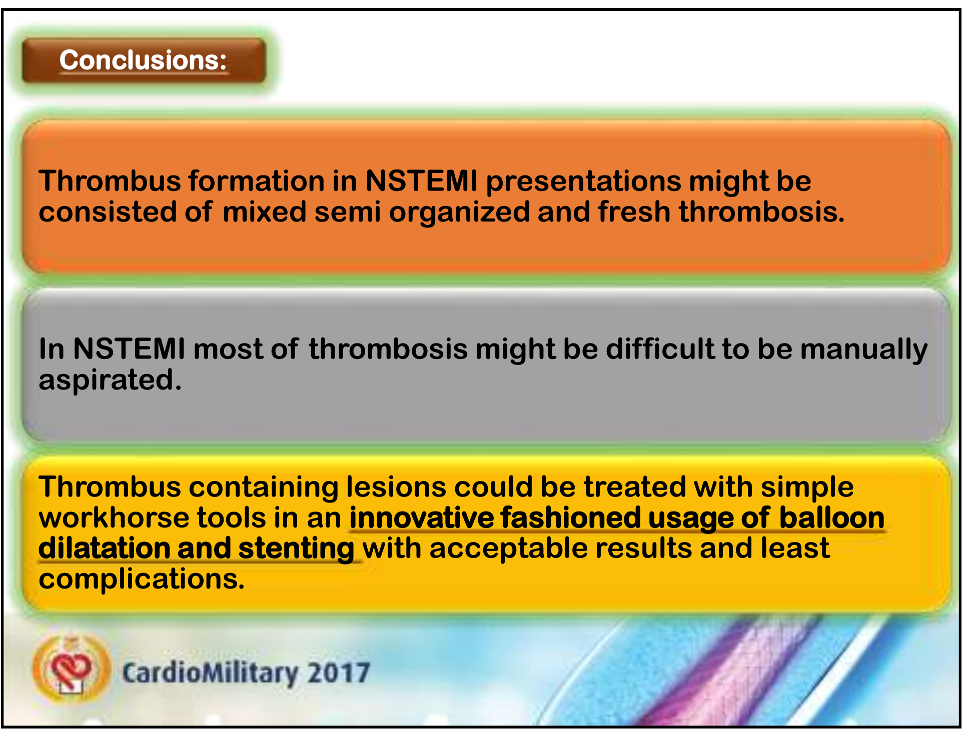
Conclusions:
Thrombus formation in NSTEMI presentations might be consisted of mixed semi organized and fresh thrombosis.
In NSTEMI most of thrombosis might be difficult to be manually aspirated.
Thrombus containing lesions could be treated with simple workhorse tools in an innovative fashioned usage of balloon dilatation and stenting with acceptable results and least complications.
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