

# Rotathon-series of successful rota cases last 2 months: An audit

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## Background

Physical removal of plaque and reduction in plaque rigidity facilitating dilation.

1. Rotablader ablates plaque using a;

- Diamond encrusted elliptical burr
- Rotated at high speed (140,000 to 180,000 rpm)
- By a helical driveshaft
- That advances gradually across a lesion over a guidewire.

2. Burr preferentially ablates

- Hard, inelastic material, such as calcified plaque,
- That is less able to stretch away from the advancing burr than healthy arterial wall
- This is referred to as "differential cutting".

## Principals

- RA particulate must traverse coronary microvasculature before clearance by the RES
- Microvascular obstruction can cause reduced contractility in myocardium slow flow/no reflow, and MI
- Most particles are small enough to readily pass; 98% are <10  $\mu$ m, with a mean diameter to 5  $\mu$ m (smaller than normal mature erythrocytes)
- Thermal injury may contribute to increased risk of periprocrdural myocardial infraction (MI) and restonsis associated with excessive deceleration
- Modern technique, favoring gradual, intermittent ablation with a pecking motion, and slower RPMs (140,000 – 150,000) aims to minimize deceleration and thermal injury.

## Indications

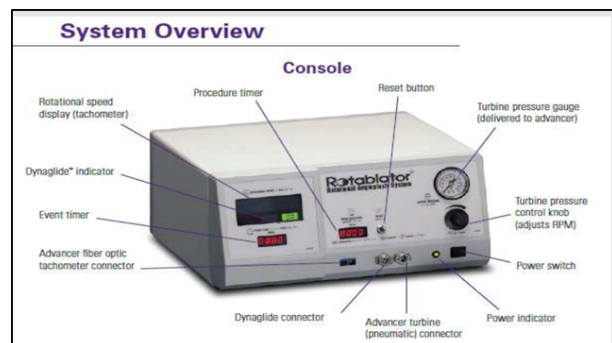
- Heavily calcified lesions (HCCL) – localized or extended
- Presence of circumfrential calcium ring where the lesions undilatable with balloon angioplasty
- Ostial lesions with severe fibrosis with or without calcification

- Balloon inaccessible lesion, provided that the rotawire can cross the lesion
- Failed PCI is either due to inability to cross the lesion or dilate
- Bifurcation lesions
- CTO inability to cross with a ballon catheter.

## Contraindications

- Occlusion through which guidewire will not pass
- Last remaining vessel with compromised LV function
- Coronary dissections
- Evidence of thrombus
- Severe tortuosity
- Relatively contraindicated in vein grafts (increased risk of dissection and distal embolization).

## Rotablator



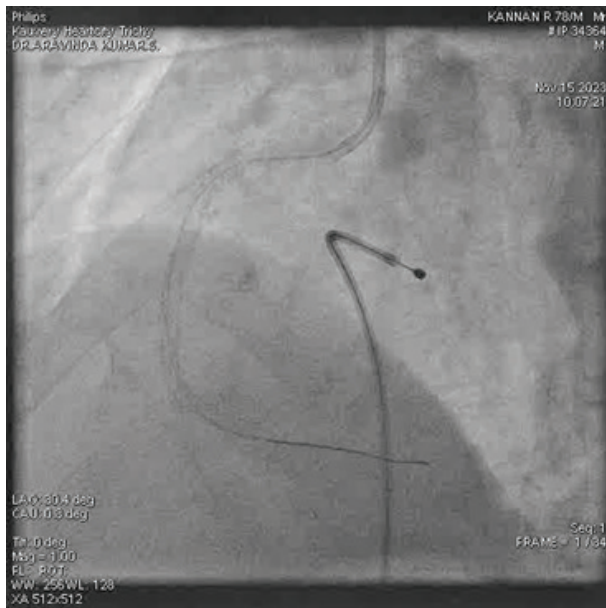
## Case Presentation

### Case 1

Kannan admitted with a chief complaints of,

- Unstable Angina, DM+
- HN
- Plan Fix Lad First/Rca-Rota

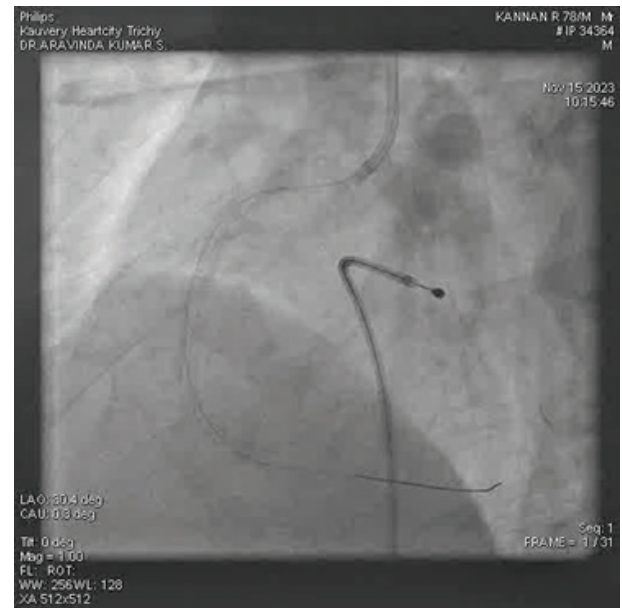
## Angiographic Results



## Optimal MSA confirmation through IVUS



## Final Result

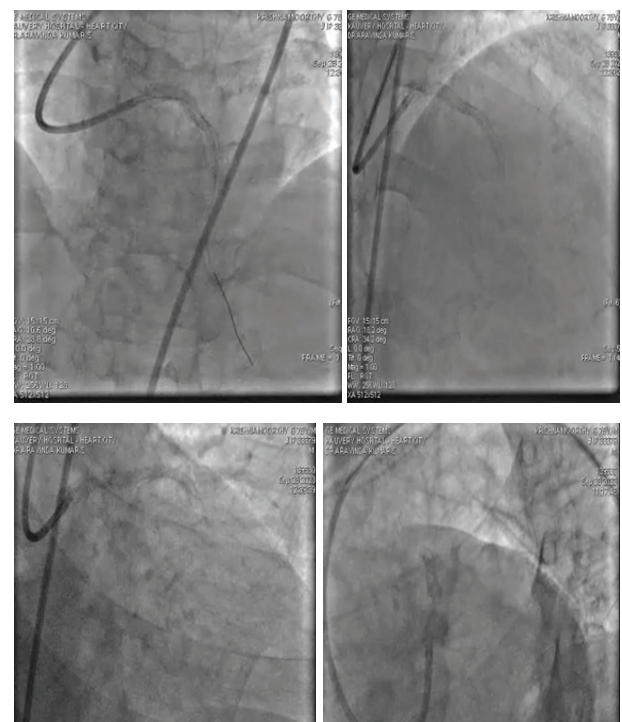


### Case 2

A 70 year old male patient Krishnamoorthy with a chief complaint of

- DM+, HT
- Lesion LM to MID LAD

## Final Result



Excellent Angiographic Results

## Discussion

Total cases - 8

- Male - 8
- Female - 0
- Youngest - 60
- Oldest - 78
- Average age – 71

Procedures

- Lmca - 2
- Lad - 5
- Rca - 1
- Multivessel pci - 2
- Only rota - 0

LV dysfunction

- Severe - 3
- Moderate - 2
- Mild - 1
- Normal - 2
- Mortality - 0

Route of procedure

- Femoral

Additional support

- IVL - 1
- Cutting balloon - 4

Imaging guidance

- Average length of rotablation 38mm (22–60)
- Inotropic support - 2

Hospital stay

- ICU stay 1 day - 8
- Ward stay 1 day - 6
- Ward stay 2 days - 2

Conclusion

- Rotablation is a complex high risk procedure
- Infrequently performed

- More common in males
- Long standing cad with multiple risk factors
- Common in lad
- Good preparation and good teamwork results in good outcome
- No variation in hospital stay
- Higher cost
- Imaging guidance for better outcomes