Rotablation Burr Stall:
What To Do When All Efforts Seem To Fail

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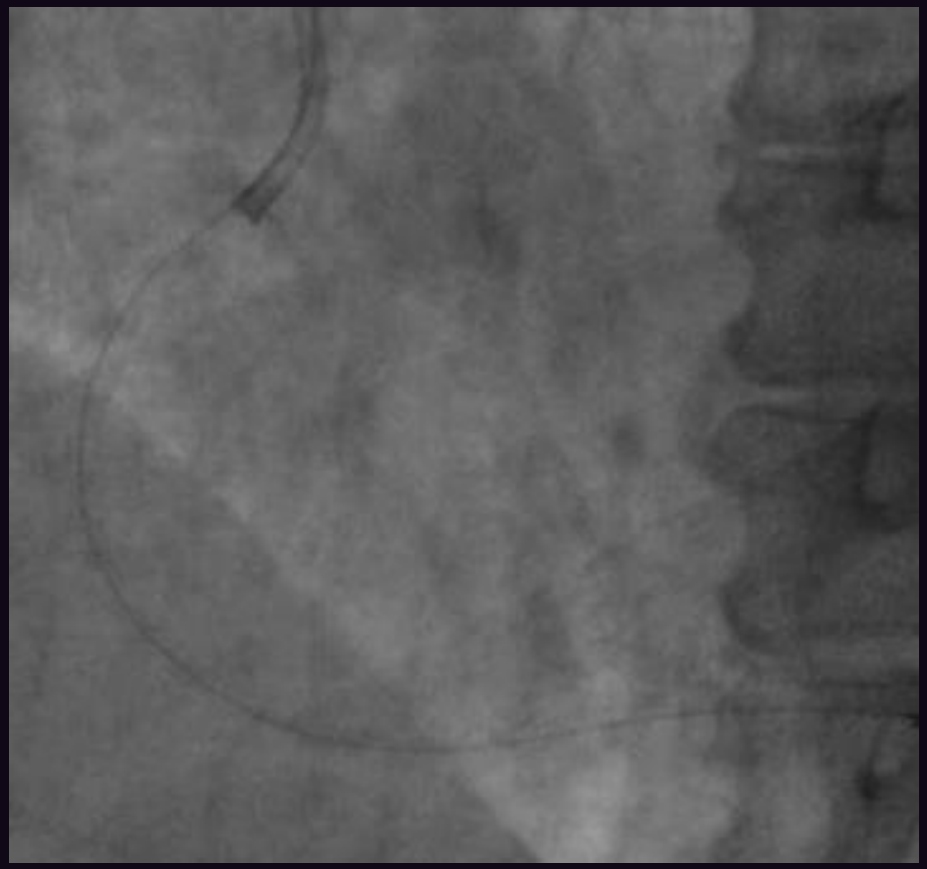
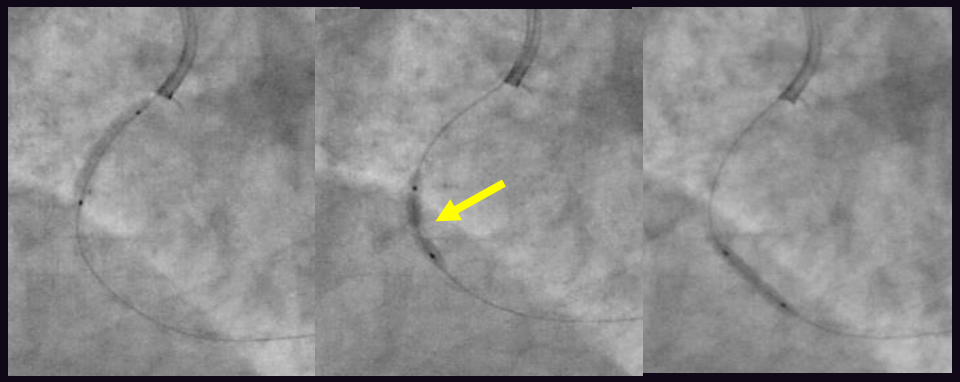
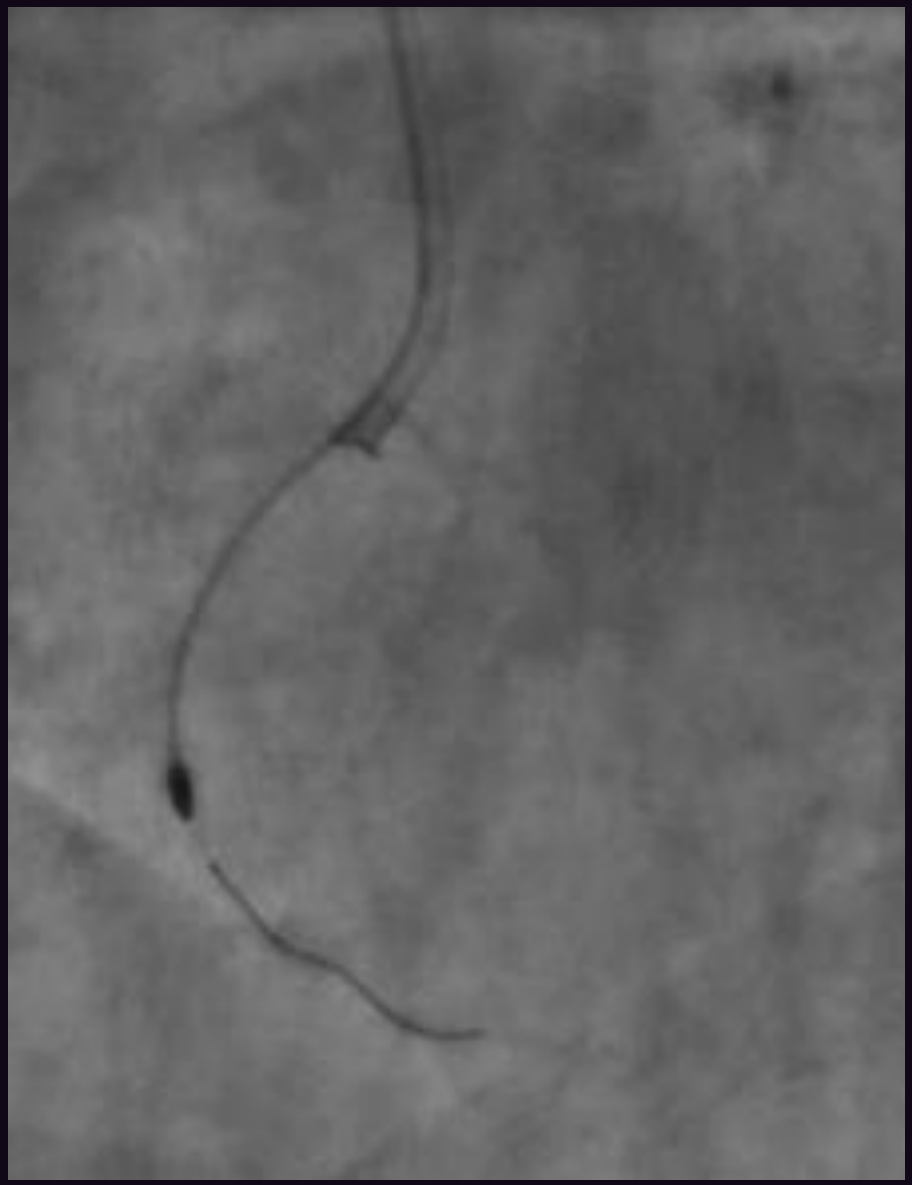
In, female, 62 yr , stable angina. Risk factors: Type II DM, dyslipidemia.
ECG & chest film: normal. Good EF on Echo.
Approach: ***Transradial, GC: JR 7F***





All narrowing yielded to high pressure balloon dilatation, ***except one focal spot*** in mid-RCA (arrow)

Heavily calcified diffuse 80-90% stenosis
of the ostial-prox-mid RCA



Rotablation (#1.5 mm burr) resulted in ***burr stall !!!.***

The patient declined surgery !!!

What would you do ??

EuroIntervention 2015;11:30-36

European expert consensus on rotational atherectomy

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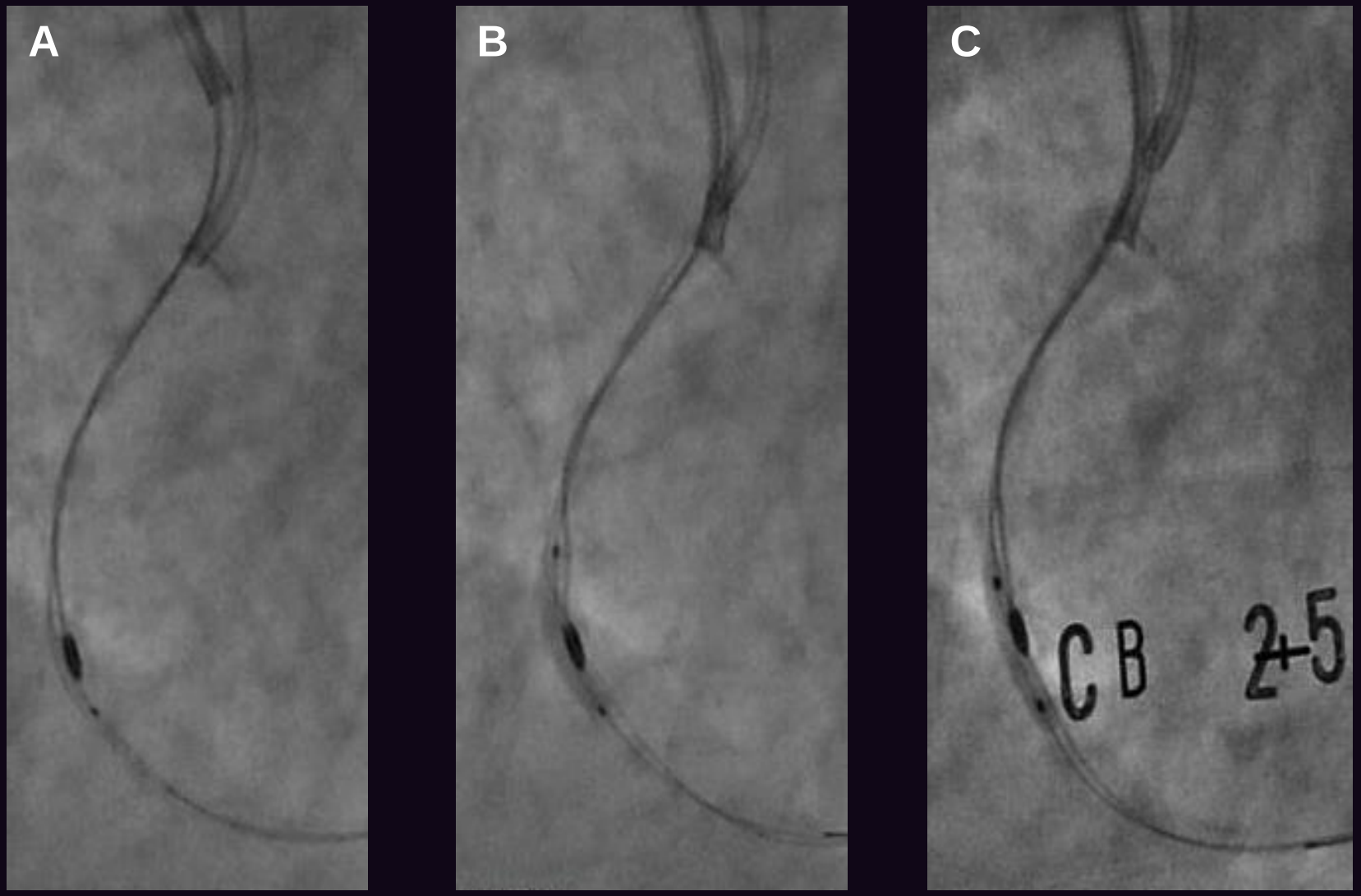
	Technique to avoid	Strategy for resolution
Burr entrapment	Rare complication usually avoided with careful case selection and good technique	Controlled push and pull of rotablation shaft Position 2nd wire to allow balloon placement Cautious deep intubation with mother-in-child catheter for more support Cardiothoracic surgical resolution occasionally required

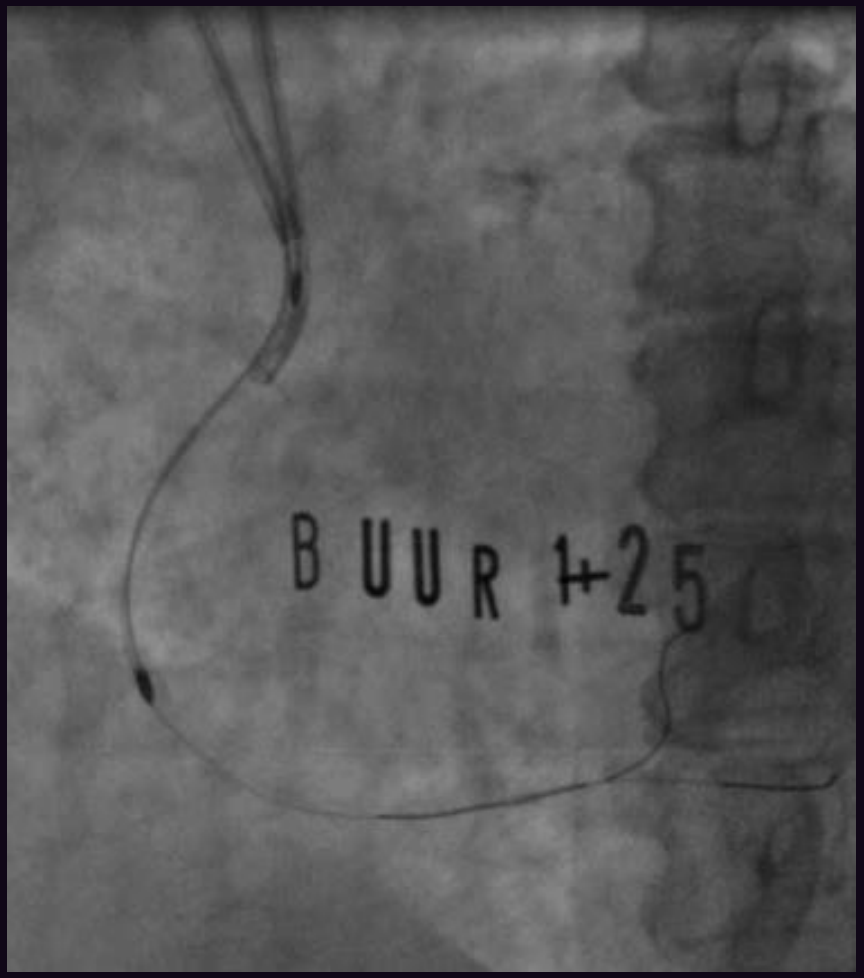
Barbato E, E, et al. Eurointervention 2015;11:30-36

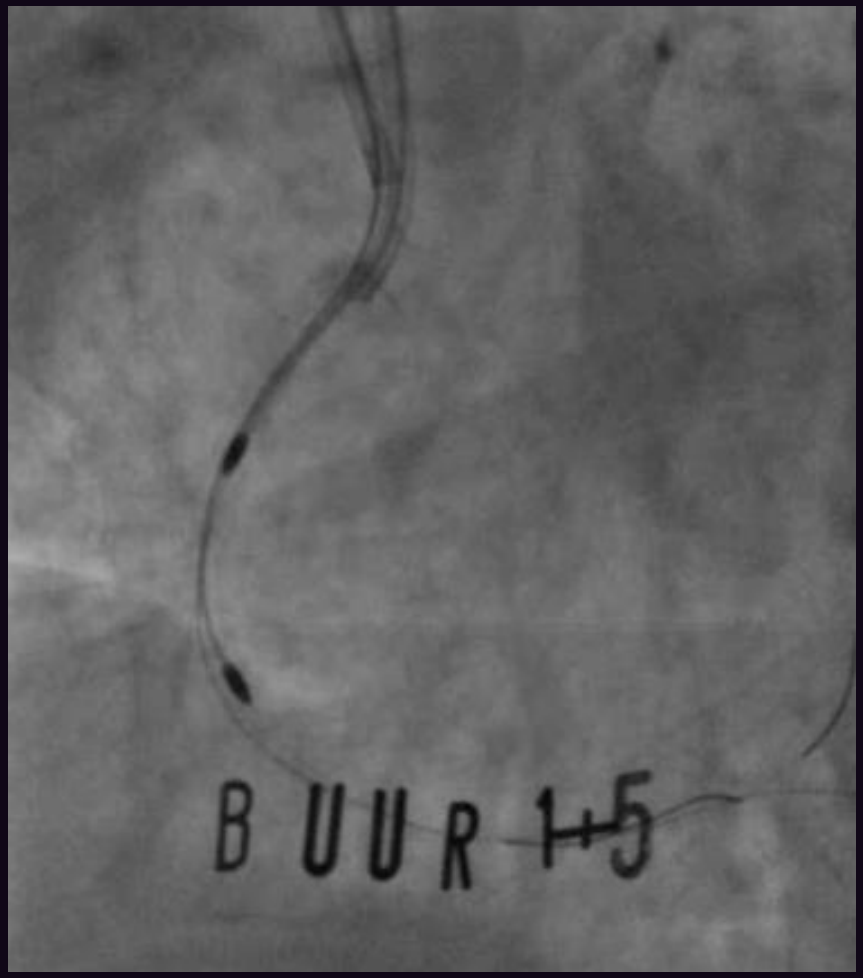


As the GC was 7F, it could not accommodate another balloon. So ***2nd GC*** was introduced & a guide wire (GW) was advanced alongside the stalled burr. Subsequently ***stepwise high pressure & cutting balloon dilatation*** was done in an attempt to release the burr entrapment. But ***these failed ..!!!***

What Would You Do Next?

Please Advise





Rotablation (#1.25 & then #1.5 mm burr), followed by high pressure balloon dilatation was tried to release the burr stall … but again … ***failed !!!.***

The burr could not be pulled out !!!. Be reminded also that every time we forcefully pulled the burr, we also pulled the RCA

What Would You Do Next?

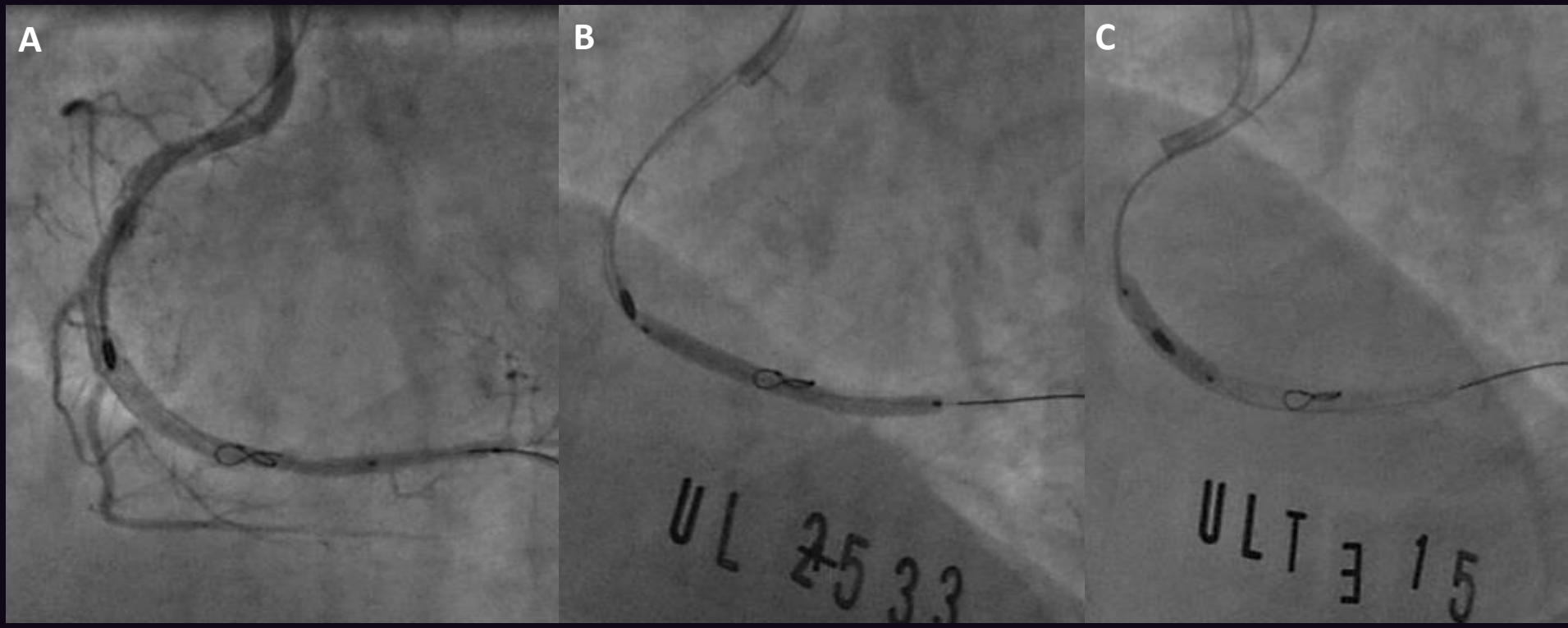
Please Advise

After further aggressive dilatation of the proximal RCA, another attempts to pull the stalled burr were undertaken by ***fixing the rota-wire*** (A), subsequently fixing the ***work horse GW (to prevent the RCA from being pulled out***, B), & lastly by ***deep seating of the GC*** (& then pulling the GC, burr & GW as a system, C). But … again, ***all failed !!!.***

We did not think that mother-&-child technique, guideliner, godzilla will help

What Would You Do Next?

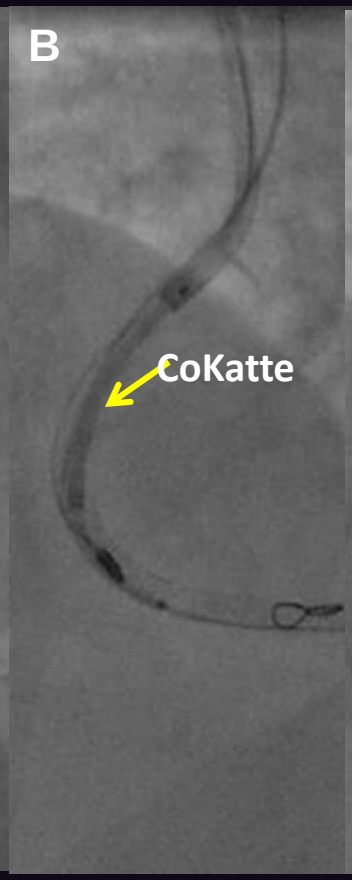
Please Advise



And in fact, ***extensive dissection*** was noted from the proximal extending to the distal RCA

2 overlapping Ultimaster stents (2.5x33 & 3x15 mm) were implanted in the distal-mid RCA (B & C)

What would you do next ??



Attempt to place a long Ultimaster in the os-pRCA was hindered by the site where the burr stalled (A)

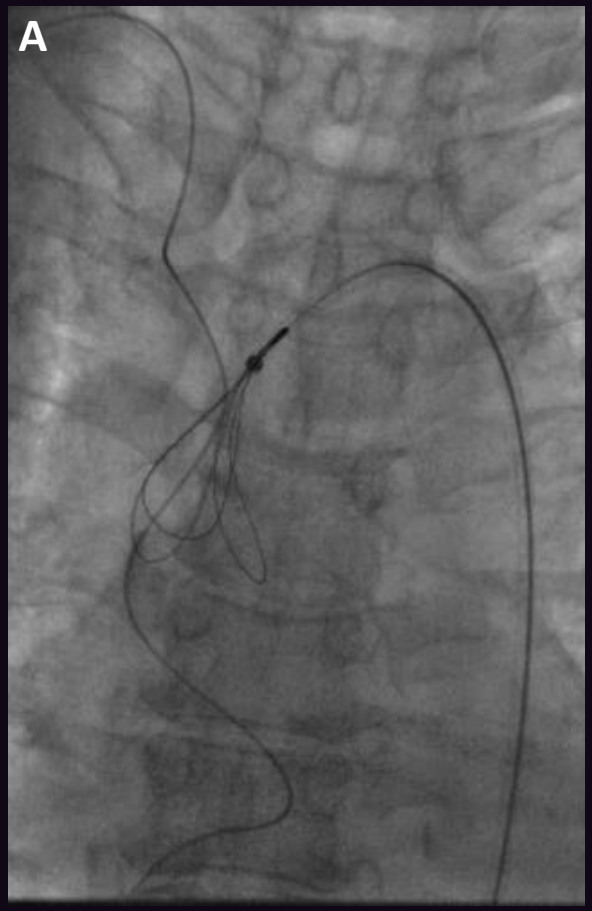
Facilitated by small catheter ***(CoKatte®) (mother-child technique)*** the 3x33 mm ***Ultimaster stent*** could be implanted (B & C)

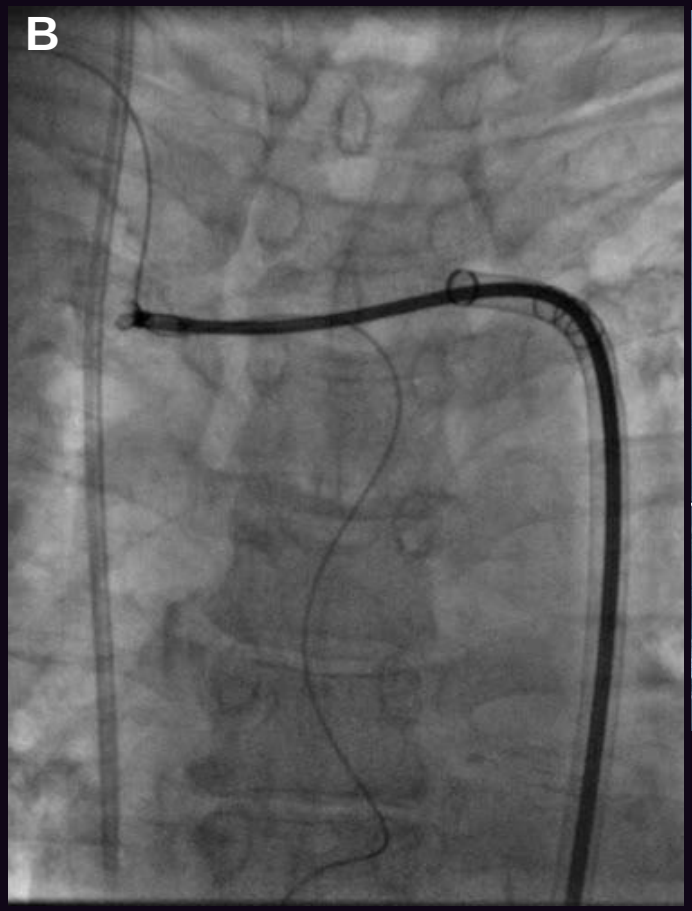
After postdilatation & flaring of the RCA ostium, the result was good (D).

But how to remove the jailed burr (& its shaft) ??

How To Remove The Jailed Burr?

Please Advise

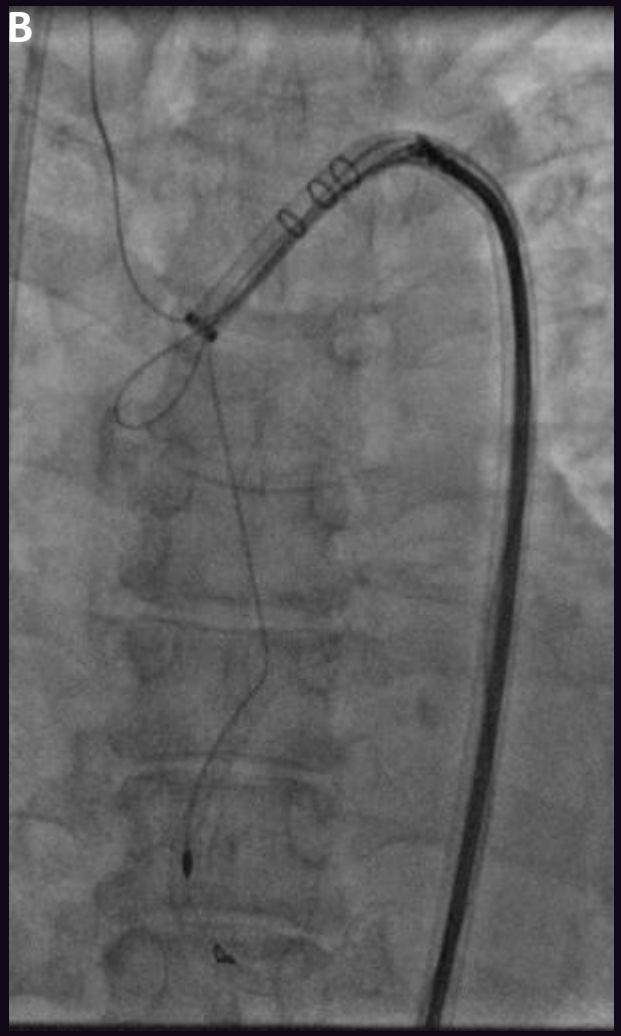




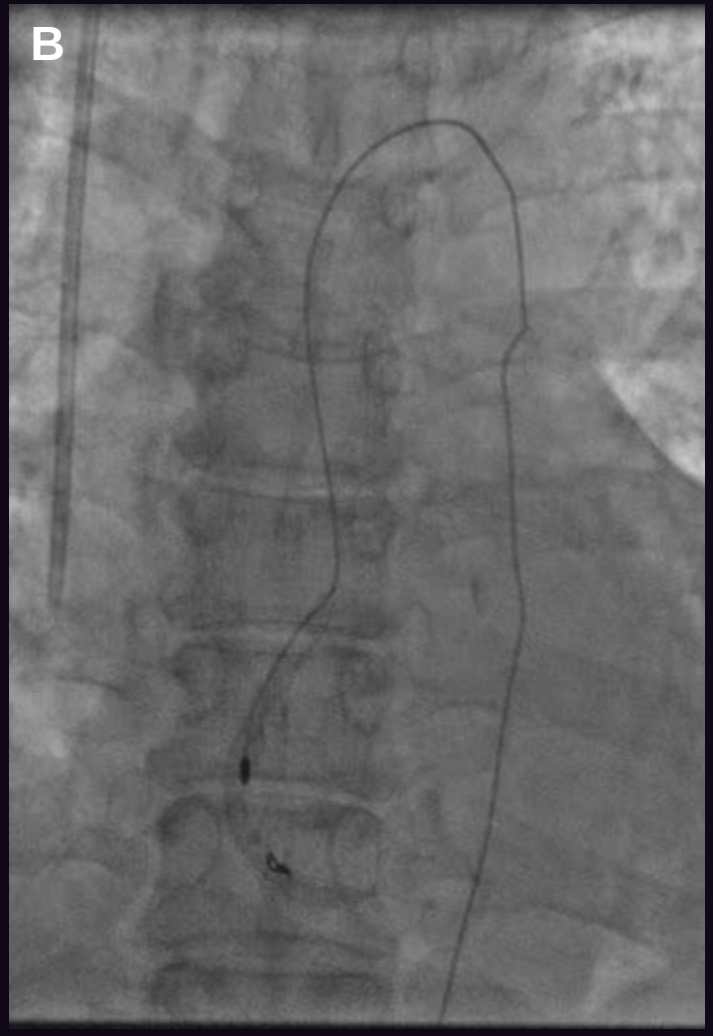
EnSnare could not grab the burr shaft (A)

A ***gastric biopsy forceps*** introduced through a long **14F Watchman access sheath** (normally used for LAA occluder implantation, inner diameter 12 F) was used to bite the burr shaft (B & C)

What would you do next ??



While retracting the burr shaft, great care was taken ***not to put too much tension during pulling, lest the RCA or the stent would be drawn up***.
From time to time, after releasing the grab, the forceps was re-advanced to bite the more proximal part of the burr shaft (A,B, C)



The burr shaft was pulled until it was entirely in the aorta (& part was in the iliac artery)(A, B).
Anticoagulation therapy was commenced, in ***combination with DAPT***..
Patient was doing fine until 12 months, with negative ischemic stress test,
but declined angiographic follow up.

Causes Of Burr Stall (Entrapment)

- *Poor* patient selection & *poor* technique
- Burr is *too big*
- *Dottering*
- *Pushing*
- *Stopping* the burr in the lesion
- *Tortuosity* increases risk
- **Learning from this case:** Be gentle & very slow in advancing the burr at high rotational speed across a *very short & tight highly calcified napkin ring stenosis*

Rotablation Burr Stall:

What To Do When All Efforts Seem To Fail

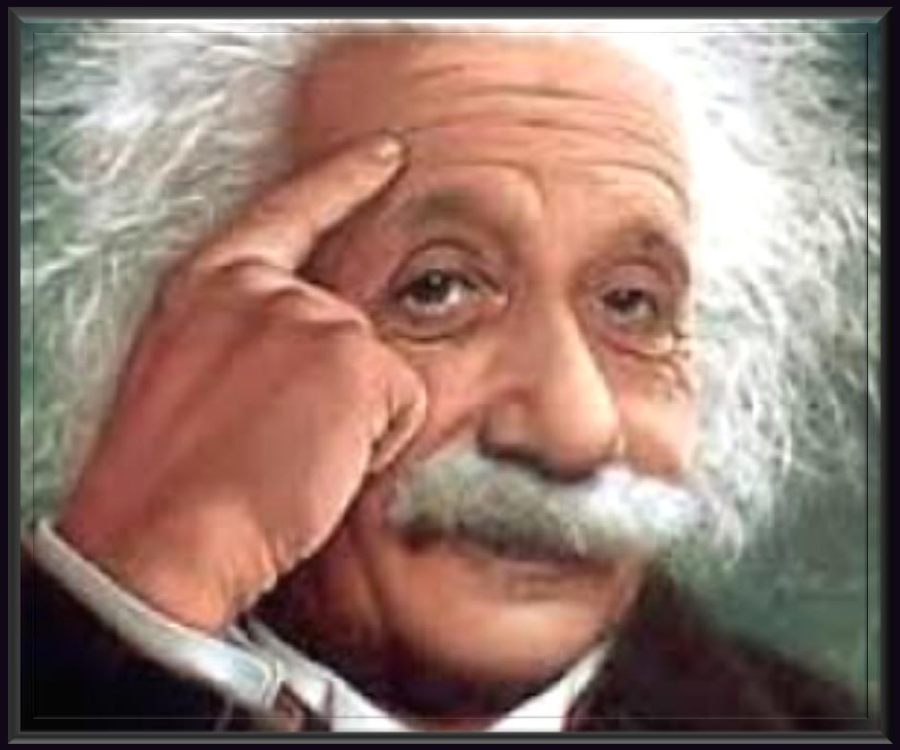
Summary

- This case described *various PCI techniques* to solve the problem of burr stall. Each of these techniques may help, but in this case, success was achieved after desperately trying all of them.

- Be gentle and *very slow in advancing the burr at high rotational speed across a very short and tight highly calcified napkin ring stenosis*

Take Home Message

Recipe On How To Sole A Difficult Problem ……



It is not that I am smart.
It is just because I stay with the problem longer ……

Albert Einstein