SUCCESSFUL USE OF A NEWLY DEVELOPED CHILD SUPPORT CATHETER FOR DISTAL STENT DELIVERY: EARLY CLINICAL EXPERIENCE.

PSIFOS V., GRAIDIS C., DIMITRIADIS D., KARASAVVIDIS V.
Euromedica-Kyanous Stavros Hospital, THESSALONIKI, GREECE

Aims

Here we describe a newly developed "child" support catheter (GuideLiner, Vascular Solutions, Inc., Minneapolis, Minnesota), report its successful use in a series of 21 difficult cases in native coronary vessels and discuss practical tips to optimize its performance.

Methods

We retrospectively identified 21 cases performed over a 22-month period (from 12/2009 until 8/2011) in which a GuideLiner catheter was used to facilitate stent delivery following failure of conventional techniques.

Results

Baseline characteristics n=21	
Mean Age (years)	70,8±7,1 (range 49 to 81)
Men	20 (95,2%)
Target Vessel	
RCA	14 (66,6%)
LAD	3 (14,3%)
Cx	4 (19,1%)
Reasons for the difficult stent delivery	
severe calcification	8 (38,1%)
intense tortuosity	2 (9,5%)
both of them	10 (47,7%)
poor backup support	1 (4,7%)

PCI Data	
Adopted techniques that were not effective for stent delivery	
Deep engagement method	15 (71,4%)
Buddy wire technique	13 (61,9%)
Anchoring	3 (14,3%)
Rotational atherectomy	1 (4,7%)
Average stent diameter	2,78±0,4 mm
Average stent length	23,19±7,25 mm (range 12 to 38mm)

- In six cases, catheter advancement was aided by anchoring the balloon distally, by inflating it in the target lesion and both pushing gently on the catheter and pulling gently on the balloon.
- Deep intubation depths ranged from 30-71mm (mean 51mm).
- For all lesions, the stent was successfully delivered without any dislodgement.
- No cases of air embolism were recorded, and importantly, there were no procedural complications related to the use of the catheter such as coronary dissection, coronary perforation or evidence of distal embolisation.

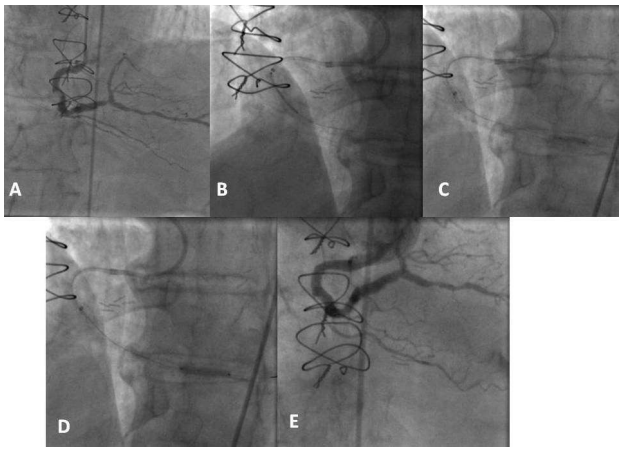

Fig 1: **A:** RCA heavily calcified with critical stenosis of the mid vessel and distal vessel at the crux **B:** Guideliner catheter (white arrow) used to bypass proximal point of obstruction enabling delivery of Promus Element stent (black arrow). The guide catheter is illustrated by black arrow at top of figure **C:** Using an inflated balloon in the distal lesion as an anchor (black arrow), the Guideliner (white arrow) was advanced through the deployed stent into the distal vessel **D:** Promus Element stent (black arrow) delivered into PDA branch of RCA through Guideliner catheter (white arrow), passed through previously deployed proximal stent **E:** Final result.

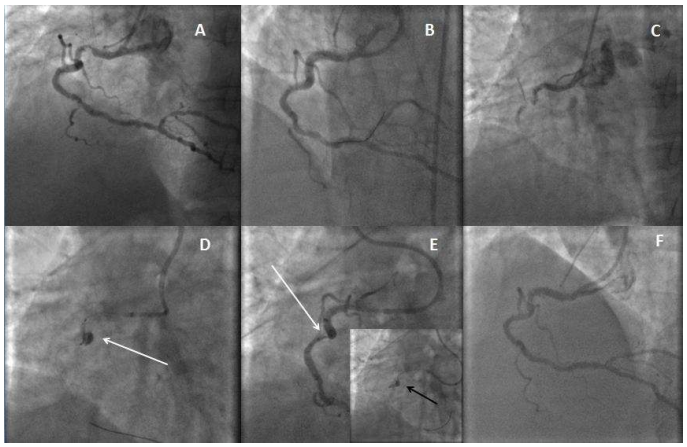

FIG 2: **A:** RCA with heavy calcification and extreme tortuosity at the proximal to mid segment with a severe lesion **B:** Final result after the implantation of a 3.0X12mm Promus Element stent **C:** One hour later, subtotal occlusion of the RCA at the midsegment, distally to the previous implanted stent, probably due to dissection from the guidewire **D:** It was extremely difficult to advance a stent to the target lesion and seal the dissection flap **E:** Using an inflated balloon in the target lesion as an anchor(black arrow), the Guideliner was advanced through the deployed stent into the distal vessel and then a 2.75X16mm Promus Element stent (white arrow) was advanced in the distal vessel and deployed at the point of dissection **F:** Final result was excellent, with no residual dissection and TIMI 3 flow

Conclusions

The advantages of extra deep intubation and rapid exchange make this catheter an ideal solution, in cases were stent delivery fails when using conventional methods. This catheter can be recommended, not only as a bail-out device when all other techniques have failed, but should also be considered early in a procedure when difficulties with stent delivery are anticipated.