# PCI in Side Branch Disease

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# Disclosure of Relevant Financial Relationships

I, Mamas Mamas DO NOT have any relevant financial relationships to disclose relevant to this talk.

# Long-Term Follow-Up of Patients With Isolated Side Branch Coronary Artery Disease

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437 / 15,468 patients undergoing cardiac cath for stable CAD had isolated SB disease (2.8%)

**Table 2.** Clinical Endpoints After 1 Year and Long-Term Follow-Up.

| Study population, n = 437 | | | |
|---|---|---|---|
| 1-Year follow-up | | Long-term follow up | |
| All cause death, n (%) | 9 (2.1) | All cause death, n (%) | 26 (5.9) |
| MI, n (%) | 9 (2.1) | MI, n (%) | 32 (7.3) |
| CVA, n (%) | 3 (0.7) | CVA, n (%) | 6 (1.4) |
| Hospitalization, n (%) | 28 (6.4) | Hospitalization, n (%) | 77 (17.6) |
| Recurrent CAG, n (%) | 18 (4.1) | Recurrent CAG, n (%) | 68 (15.6) |
| MACCE (death/MI/CVA), n (%) | 21 (4.8) | MACCE (death/MI/CVA), n (%) | 64 (14.6) |

Abbreviations: CAG, coronary angiography; CVA, cerebrovascular accident; MACCE: major adverse cardiac and cerebrovascular event; MI: myocardial infarction.

**Table 5.** Multivariable Predictors of MACCE.

| | HR | 95% CI | P |
|---|---|---|---|
| Age | 1.04 | (1.01-1.07) | **.01** |
| Hypertension | 1.38 | (0.73-2.60) | .32 |
| Active smoking | 1.19 | (0.68-2.09) | .55 |
| HDL-C levels | 0.98 | (0.95-1.01) | .18 |
| HbA1c levels | 1.16 | (1.01-1.34) | **.04** |
| Neutrophil count | 1.02 | (1.01-1.03) | **.02** |
| Ostial lesion | 2.60 | (1.10-6.18) | **.03** |

Abbreviations: CVA, cerebrovascular accident; HbA1c, hemoglobin A1c; HDL-C, high-density lipoprotein cholesterol; MI, myocardial infarction; MACCE, major adverse cardiac and cerebrovascular event.

Journal of the American Heart Association

ORIGINAL RESEARCH

# Clinical Outcomes of Percutaneous Coronary Intervention for Bifurcation Lesions According to Medina Classification

Mohamed O. Mohamed, PhD; Pablo Lamellas, MD; Ariel Roguin, PhD; Rohit M. Oemrawsingh, PhD; Alexander J. J. Ijsselmuiden, PhD; Helen Routledge, MD; Frank van Leeuwen, MD; Roxane Debrus, MSc; Marco Roffi, PhD; Mamas A. Mamas, DPhil; on behalf of the e-Ultimaster investigators*

Keele Cardiovascular Research Group

A total of 4003 patients undergoing PCI for bifurcation lesions using Ultimaster platform from e-Ultimaster registry were included in the analysis

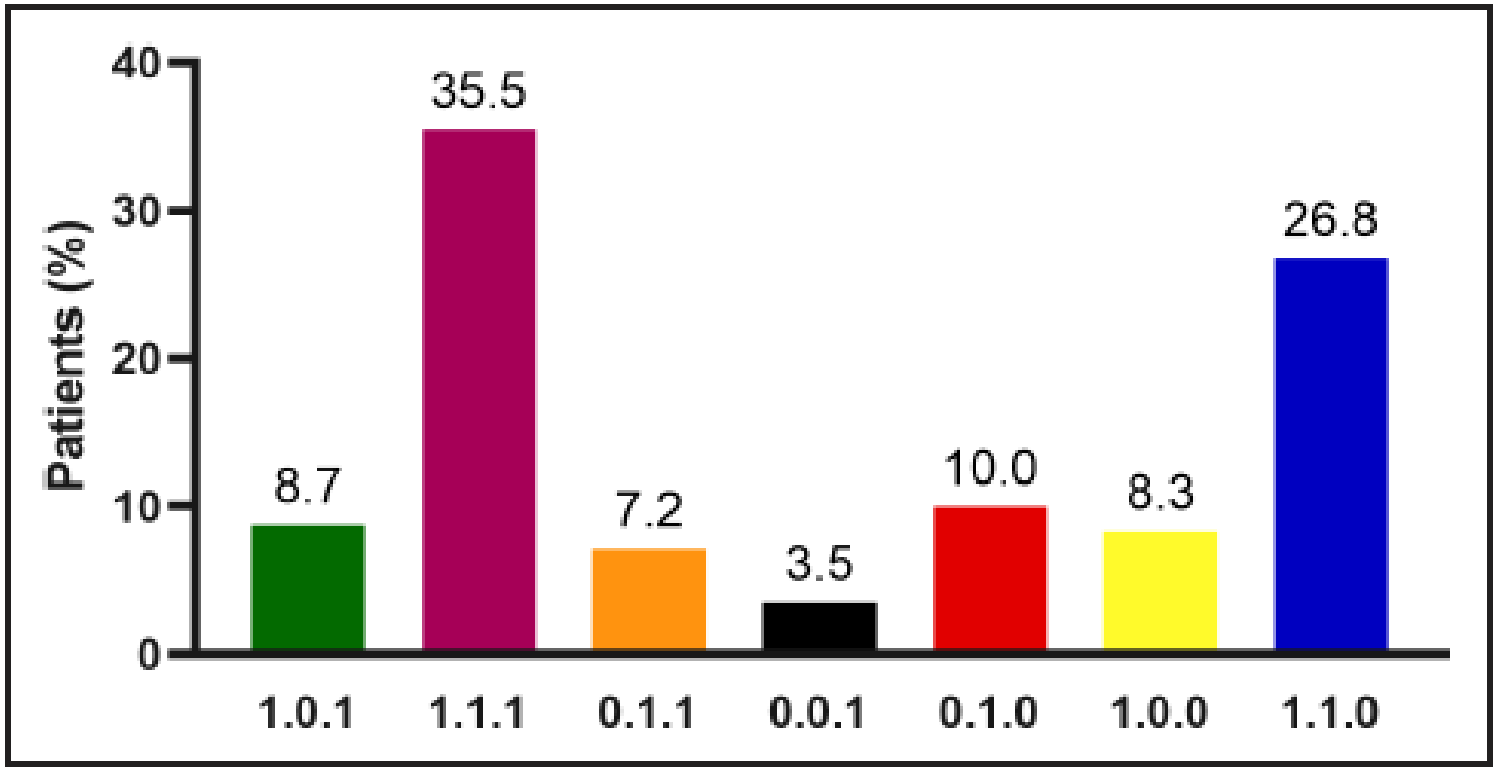


**Figure 1. Distribution of coronary bifurcation lesions as per the Medina classification subtype.**

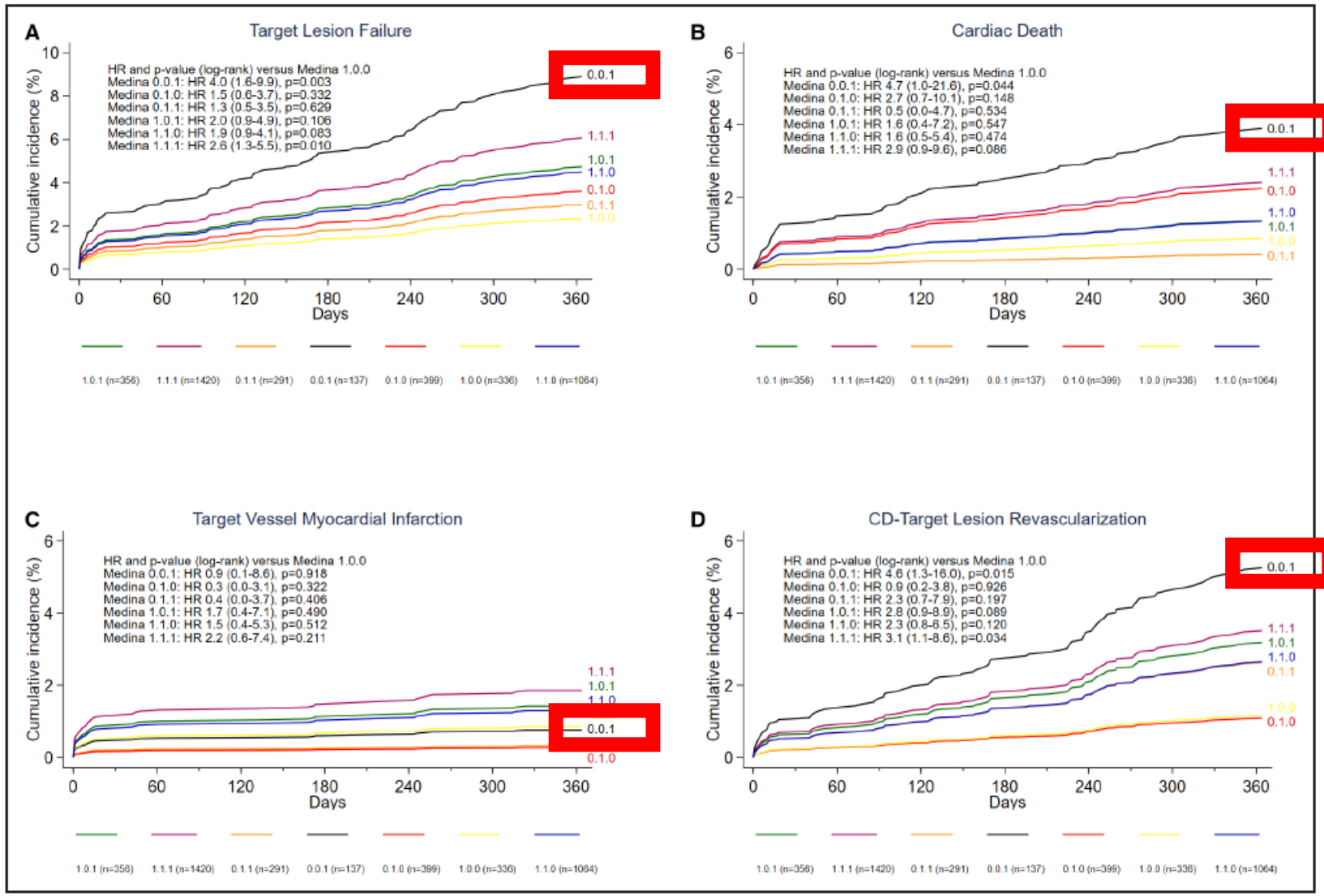


**Figure 3. Hazard ratio (HR) and 95% CI for individual Medina subtypes for (A) target lesion failure, (B) cardiac death, (C) target vessel myocardial infarction, and (D) clinically driven (CD) target lesion revascularization.**
Reference is Medina 1.0.0.

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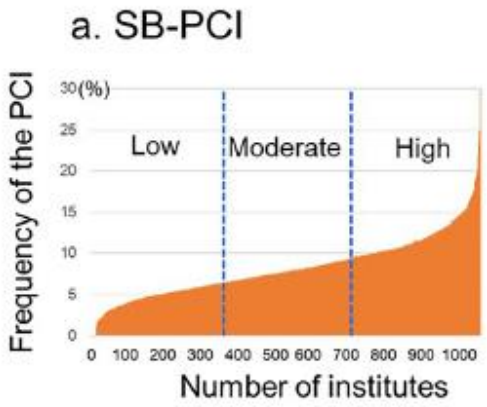
# Percutaneous coronary intervention in side branch coronary arteries: Insights from the Japanese nationwide registry

Yoshinobu Murasato [a,*], Kyohei Yamaji [b], Shun Kohsaka [c], Hideki Wada [d], Hideki Ishii [e], Yoshihisa Kinoshita [f], Junya Shite [g], Yutaka Hikichi [h], Tetsuya Amano [i], Yuji Ikari [j]




| | Low | Moderate | High | p-value |
|---|---|---|---|---|
| Range, % | 0-6.54 | 6.55–9.33 | 9.34–100 | |
| Median, % | 4.83 | 7.69 | 11.47 | |
| Institutes, n | 364 | 363 | 363 | |
| Number of the PCI per institute, median [interquartile range] | | | | |
| SB PCI | 8 [4–15] | 16 [10–26] | 21 [11–36] | <0.001 |
| SB+MV PCI | 11 [5–27] | 16 [8–31] | 15 [6–32] | 0.001 |
| MV PCI | 148 [70–244] | 172 [101–271] | 138 [68–224] | <0.001 |

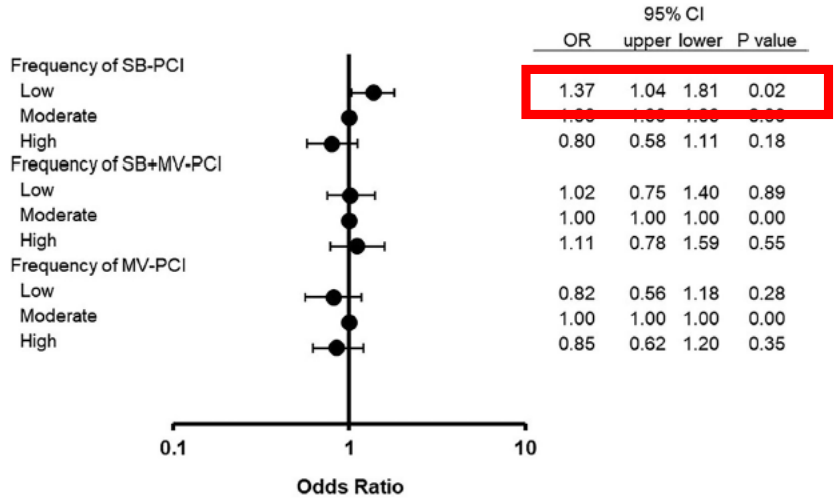



**Fig. 4.** Adjusted odds ratio (OR) for composite endpoint of in-hospital adverse events according to the tertiles of the institutional frequency of each PCI in the multivariable analysis. Low-, moderate-, and high-frequency groups were divided according to the tertiles of the institutional frequency of each PCI indicated in Fig. 3.

# Contemporary Management of Isolated Ostial Side Branch Disease: An Evidence-based Approach to Medina 001 Bifurcations

Suleiman Suleiman [1], JJ Coughlan [2], George Touma [3] and Richard Szirt [3]

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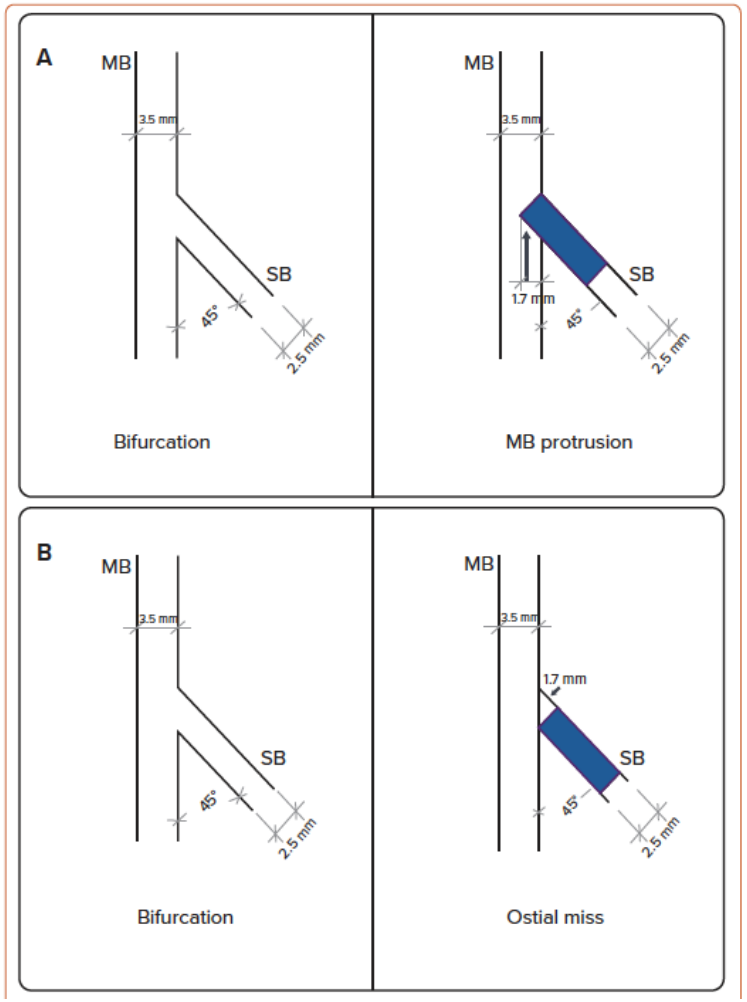
## Figure 1: Main Branch Protrusion and Ostial Miss in Medina 001 Lesions




| C | Projected minimum combined ostial miss and main branch protrusion length for various Medina 0,0,1 lesions | | |
|---|---|---|---|
| | Side branch size | | |
| | 2.0 mm | 2.5 mm | 3.0 mm |
| Bifurcation angle | Minimal combined ostial miss and main vessel protrusion length (mm) | | |
| 90° | 0 mm | 0 mm | 0 mm |
| 70° | 0.68 mm | 0.86 mm | 1 mm |
| 45° | 1.41 mm | 1.77 mm | 2.1 mm |
| 30° | 1.73 mm | 2.16 mm | 2.59 mm |

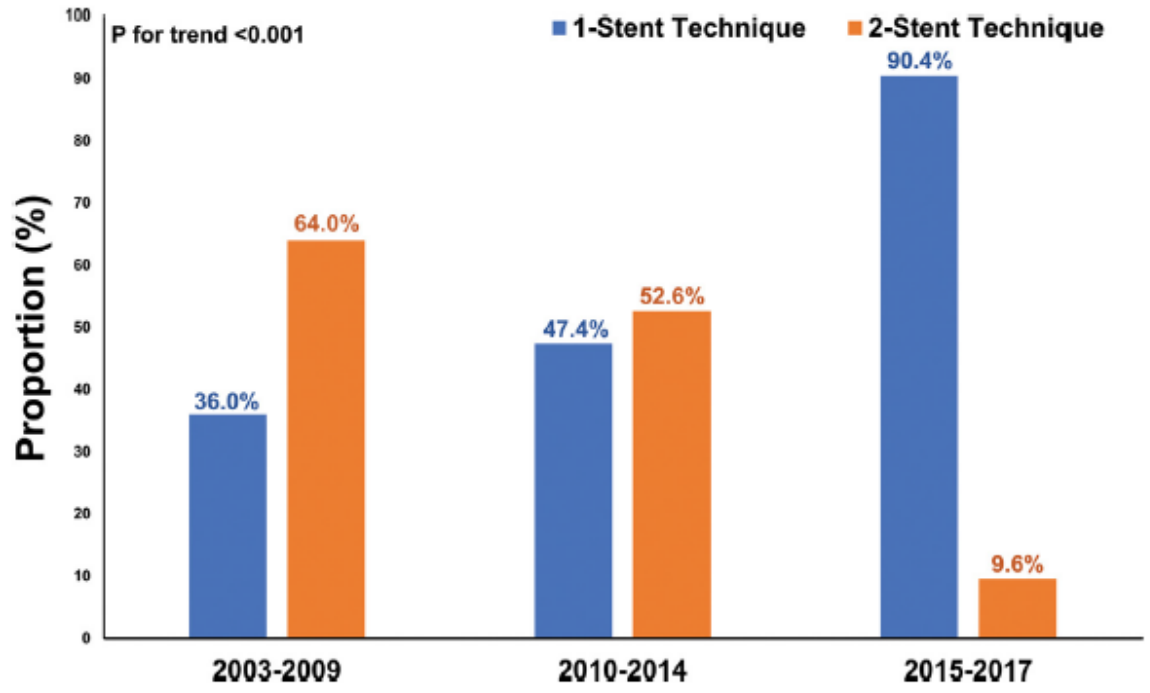
NEW RESEARCH PAPER

CORONARY

# Comparison of Outcomes Between 1- and 2-Stent Techniques for Medina Classification 0.0.1 Coronary Bifurcation Lesions

Ki Hong Choi, MD,[a,*] Francesco Bruno, MD,[b,*] Yun-Kyeong Cho, MD,[c] Leonardo De Luca, MD,[d] Young Bin Song, MD,[a] Jeehoon Kang, MD,[e] Alessio Mattesini, MD,[f] Hyeon-Cheol Gwon, MD,[a] Alessandra Truffa, MD,[g] Hyo-Soo Kim, MD,[e] Wojciech Wańha, MD,[h] Woo Jung Chun, MD,[i] Sebastiano Gili, MD,[j] Seung-Ho Hur, MD,[c] Gerard Helft, MD,[k] Seung Hwan Han, MD,[l] Bernardo Cortese, MD,[m] Cheol Hyun Lee, MD,[c] Javier Escaned, MD,[n] Hyuck-Jun Yoon, MD,[c] Alaide Chieffo, MD,[o] Joo-Yong Hahn, MD,[a] Guglielmo Gallone, MD,[b] Seung-Hyuk Choi, MD,[a] Gaetano De Ferrari, MD,[b] Bon-Kwon Koo, MD,[e] Giorgio Quadri, MD,[p] Fabrizio D'Ascenzo, MD,[b] Chang-Wook Nam, MD,[c] Ovidio de Filippo, MD[b]

**FIGURE 2** Revascularization Strategy for Medina 0.0.1 Bifurcation Lesions According to Enrolled Year

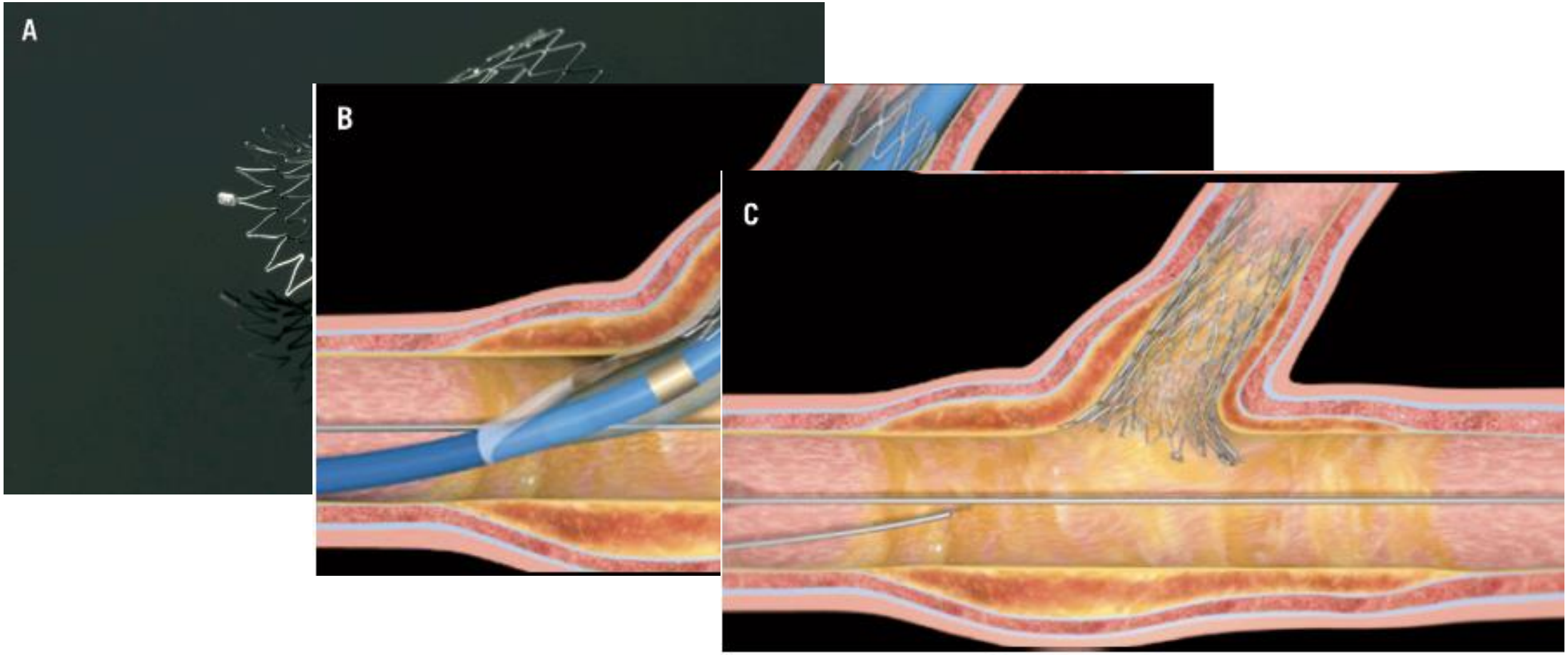



**Bar graphs** show the proportion of used stent techniques for Medina 0.0.1 bifurcation percutaneous coronary intervention according to enrolled year.

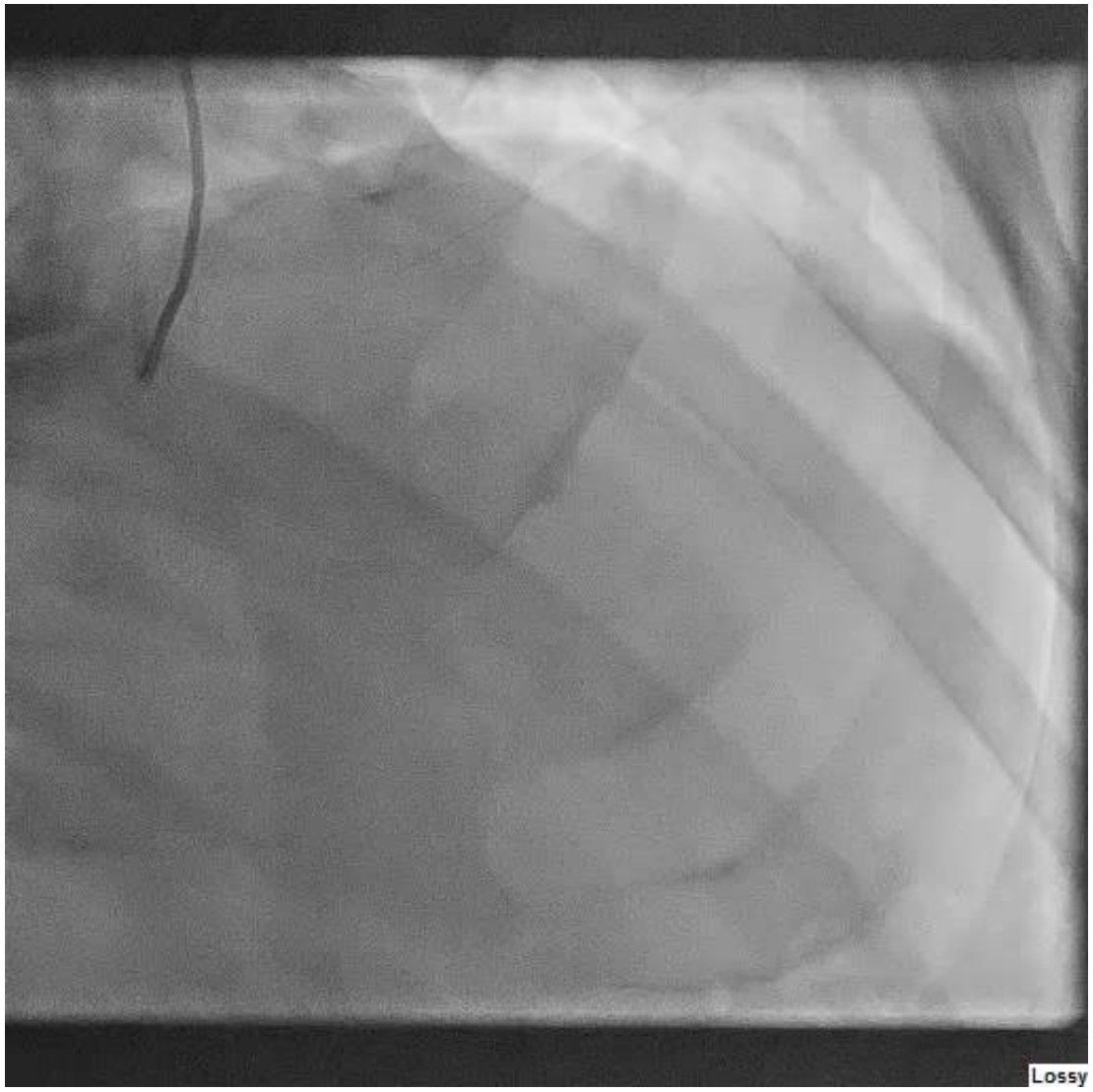
# Use of the Sideguard (Cappella) stent in bifurcation lesions: a real-world experience

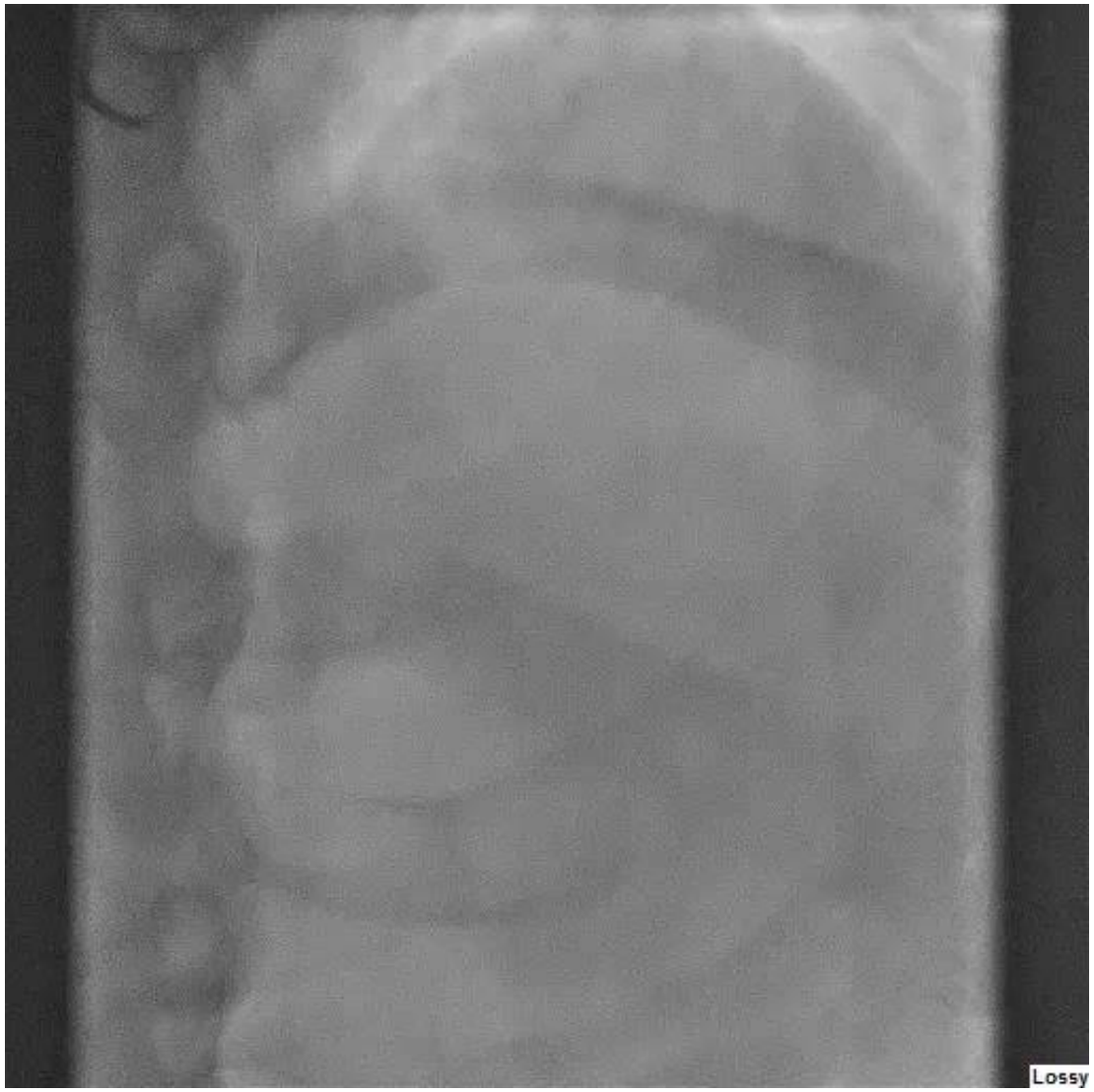
Mamas A. Mamas[1,2*], BM, BCh, MA, DPhil; Vasim Farooq[1], MD; Azeem Latib[3], MD, BCh; Sanjay Sastry[4], MD; Savio D'Souza[1], MD; Paul Williams[1], MD; Andrew Wiper[1], MD; Ludwig Neyses[1], MD; Magdi El-Omar[1], MD; Doug G. Fraser[1], MD; Farzin Fath-Ordoubadi[1*], MD

*1. Manchester Heart Centre, Manchester Royal Infirmary, Biomedical Research Centre, Manchester, United Kingdom; 2. Manchester Academic Health Science Centre, University of Manchester, Manchester, United Kingdom; 3. Interventional Cardiology Unit, San Raffaele Scientific Institute, Milan, Italy; 4. Royal Bolton Hospital NHS Foundation Trust, Farnworth, Bolton, United Kingdom*



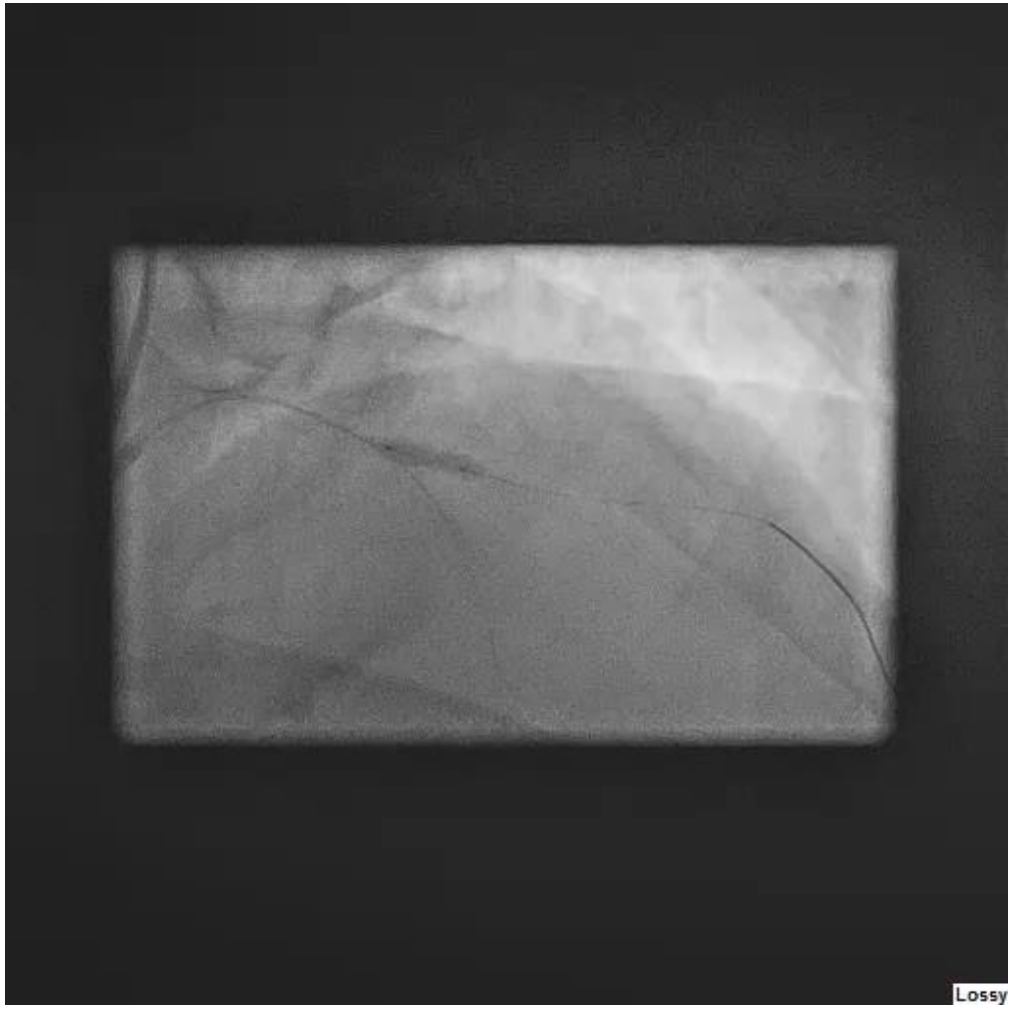
# Angiography

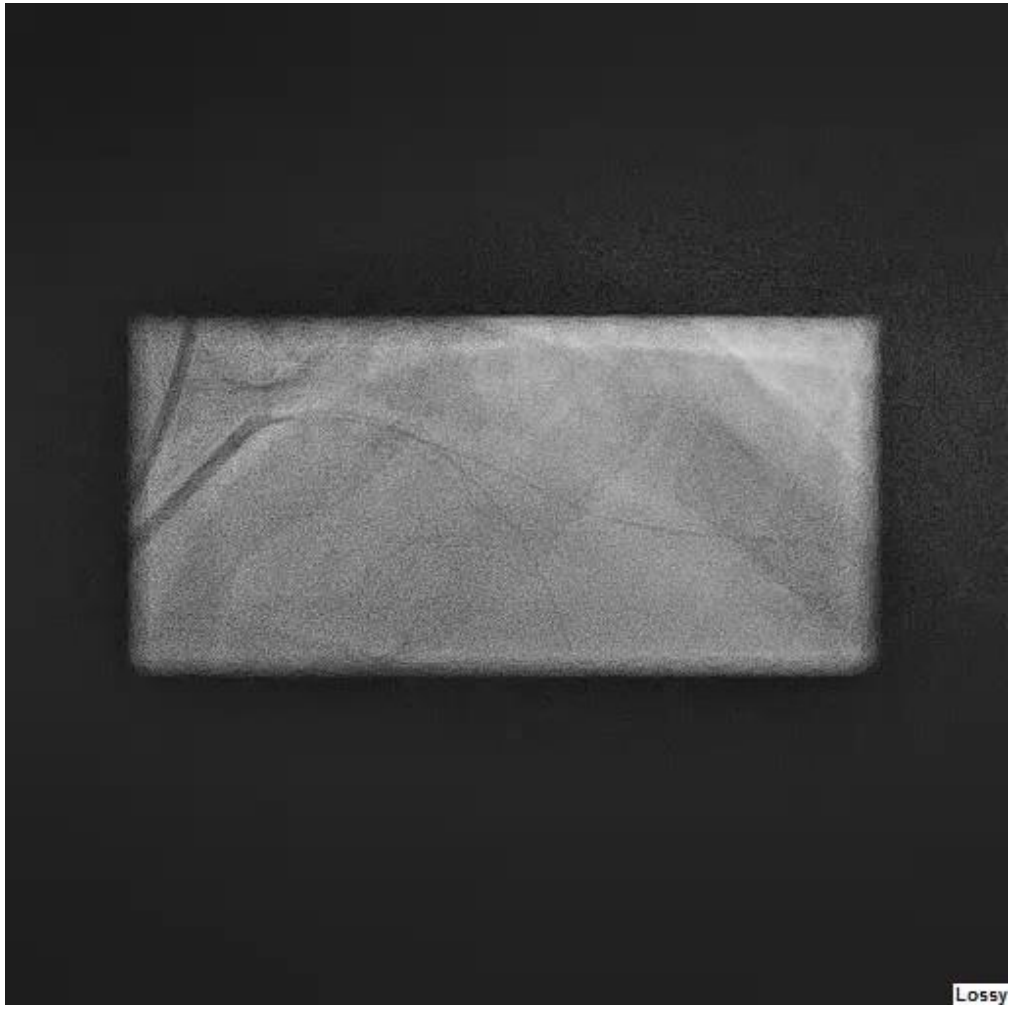


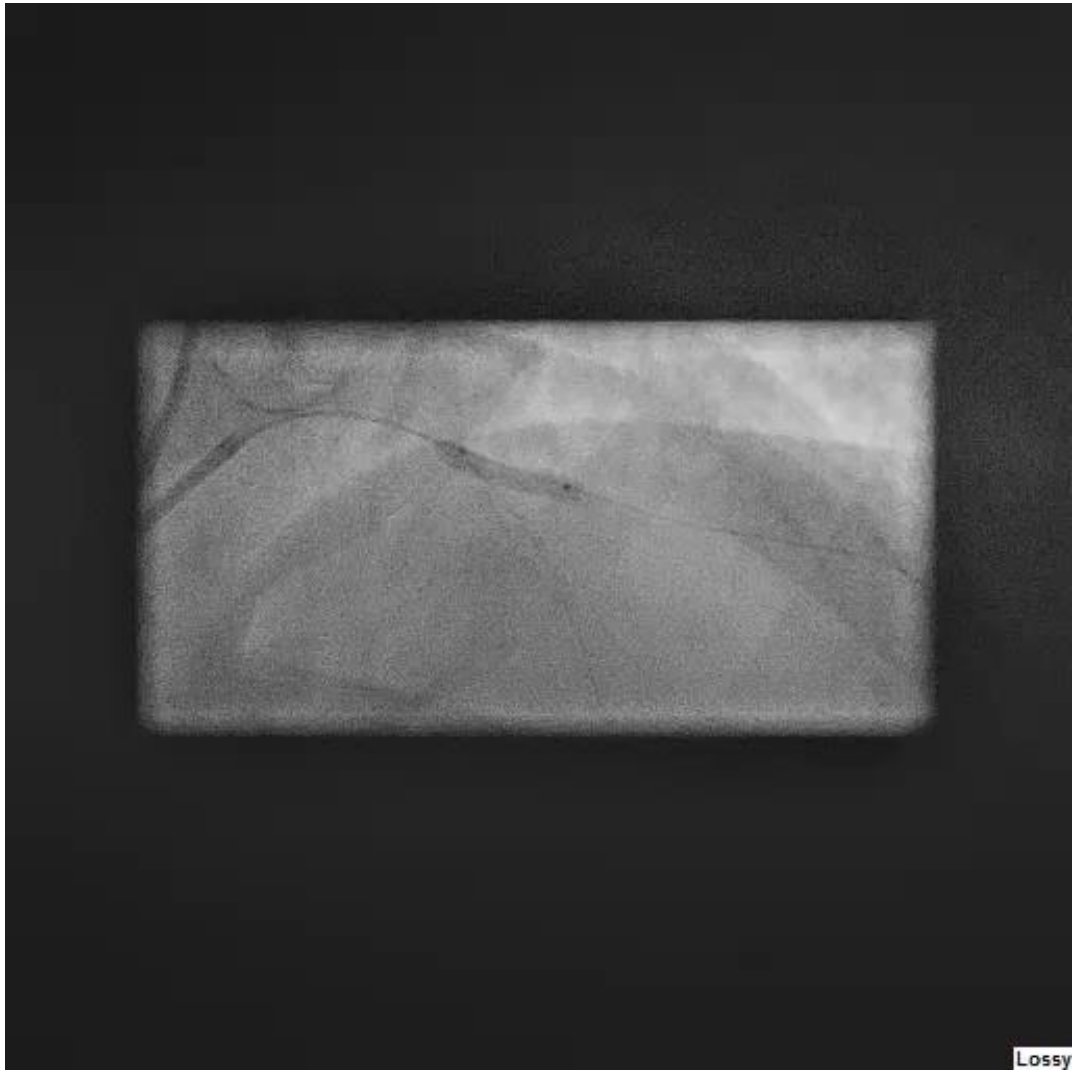
# PCI procedure

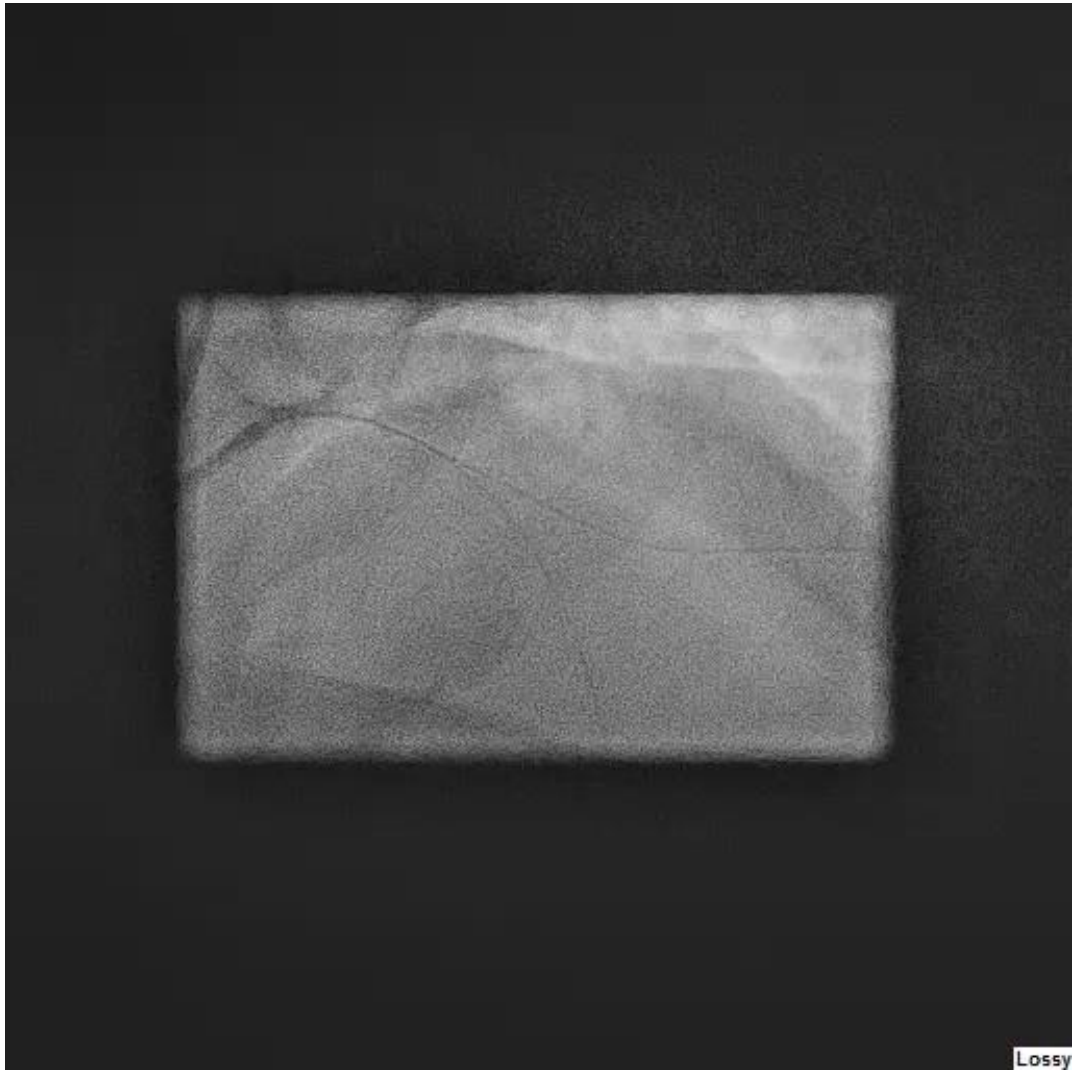
3X10mm Wolverine used



# Treatment with Drug coated balloon: Magic Touch 3.0x15 mm balloon



# Second-Generation Drug-Eluting Balloon for Ostial Side Branch Lesions (001-Bifurcations): Mid-Term Clinical and Angiographic Results

BEATRIZ VAQUERIZO, M.D., PH.D.,[1,2] EDUARDO FERNÁNDEZ-NOFREIRAS, M.D.,[3] INMANOL OATEGUI, M.D.,[4] JAVIER SUAREZ DE LEZO, M.D.,[5] JOSÉ RAMÓN RUMOROSO, M.D.,[6] PEDRO MARTÍN, M.D.,[7] HELEN ROUTLEDGE, F.R.C.P, M.D.,[8] and HELENA TIZÓN-MARCOS, M.D.[1]

*From the [1]Interventional Cardiology Unit, Hospital del Mar, Barcelona, Spain; [2]Interventional Cardiology Unit, Hospital Sant Pau, Barcelona, Spain; [3]Interventional Cardiology Unit, Hospital Trias i Pujol, Barcelona, Spain; [4]Interventional Cardiology Unit, Hospital Vall Hebron, Barcelona, Spain; [5]Interventional Cardiology Unit, H. Reina Sofia, Córdoba, Spain; [6]Interventional Cardiology Unit, Hospital Galdakao, Galdakao, Spain; [7]Interventional Cardiology Unit, H. Dr. Negrín, Gran Canaria, Spain; and [8]Department of Cardiology, Worcestershire Royal Hospital, Worcester, UK*

**Table 5.** Non Cumulative and Non-Hierarchical Major Cardiac Adverse Events (MACE) at 1, 6, and 12 Months Follow-Up

| Follow-up | 1 month | 6 months (n = 45) | 12 months (n = 40) |
|---|---|---|---|
| Overall death | (0) 0 | (0) 0 | (1) 2.9 |
| Cardiac | (0) 0 | (0) 0 | (0) 0 |
| Non-cardiac | (0) 0 | (0) 0 | (1) 2.9 |
| Q and non Q wave MI | (0) 0 | (0) 0 | (1) 2.5 |
| Target lesion revascularization | (0) 0 | (6) 13.3 | (1) 2.5 |
| MACE | (0) 0 | (6) 13.3 | (1) 2.5 |
| Stent thrombosis (ARC) | (0) 0 | (0) 0 | (0) 0 |

MI, myocardial infarction; MACE, major adverse cardiac events; ARC, academic research consortium. Values are numbers (n) and % of patients.

# Comparative Definitions for Moderate-Severe Ischemia in Stress Nuclear, Echocardiography, and Magnetic Resonance Imaging

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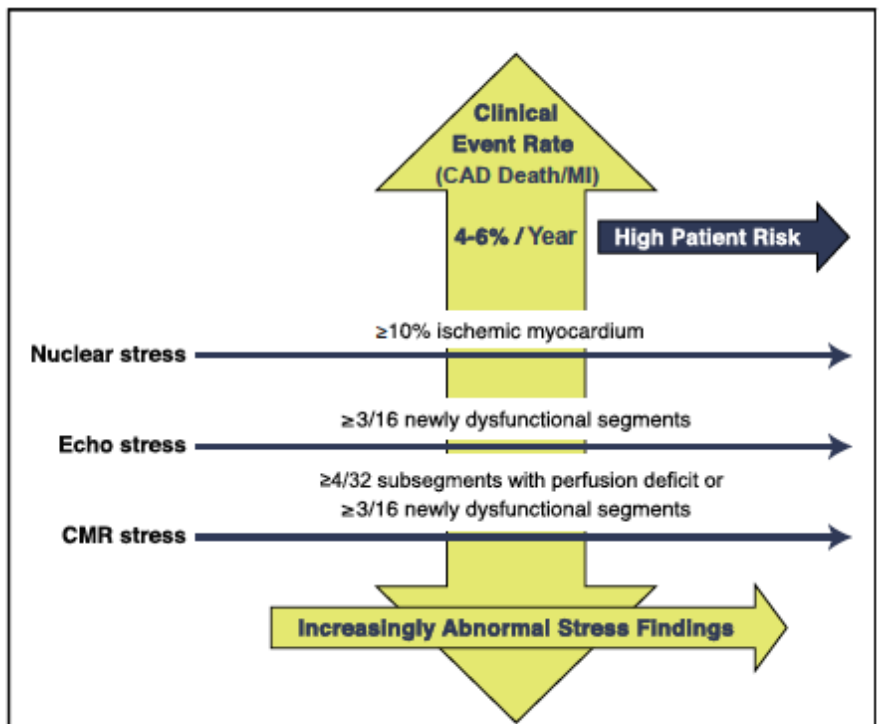
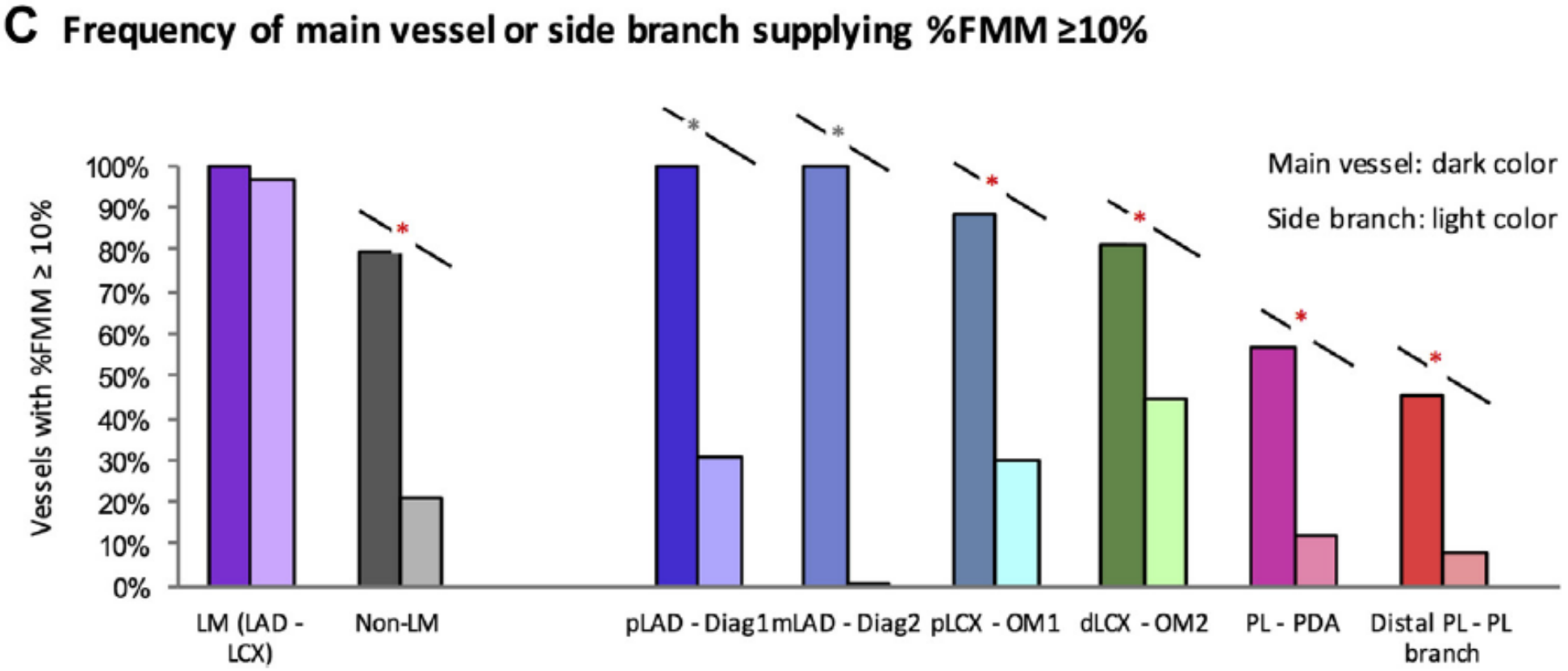



**Figure 4. Definitions of Moderate-Severe Ischemia**

Comparable multimodality estimates of moderate-severe ischemia using risk-based thresholds of CAD death or MI rates of 4% to 6%/year. CMR = cardiac magnetic resonance; other abbreviations as in Figures 1 and 3.

# Identification of Coronary Artery Side Branch Supplying Myocardial Mass That May Benefit From Revascularization

Hyung Yoon Kim, MD,[a] Joon-Hyung Doh, MD, PhD,[b] Hong-Seok Lim, MD, PhD,[c] Chang-Wook Nam, MD, PhD,[d] Eun-Seok Shin, MD, PhD,[e] Bon-Kwon Koo, MD, PhD,[f] Joo Myung Lee, MD,[g] Taek Kyu Park, MD,[g] Jeong Hoon Yang, MD, PhD,[g] Young Bin Song, MD, PhD,[g] Joo-Yong Hahn, MD, PhD,[g] Seung Hyuk Choi, MD, PhD,[g] Hyeon-Cheol Gwon, MD, PhD,[g] Sang-Hoon Lee, MD, PhD,[g] Sung Mok Kim, MD, PhD,[h] Yeonhyeon Choe, MD, PhD,[h] Jin-Ho Choi, MD, PhD[g,i]



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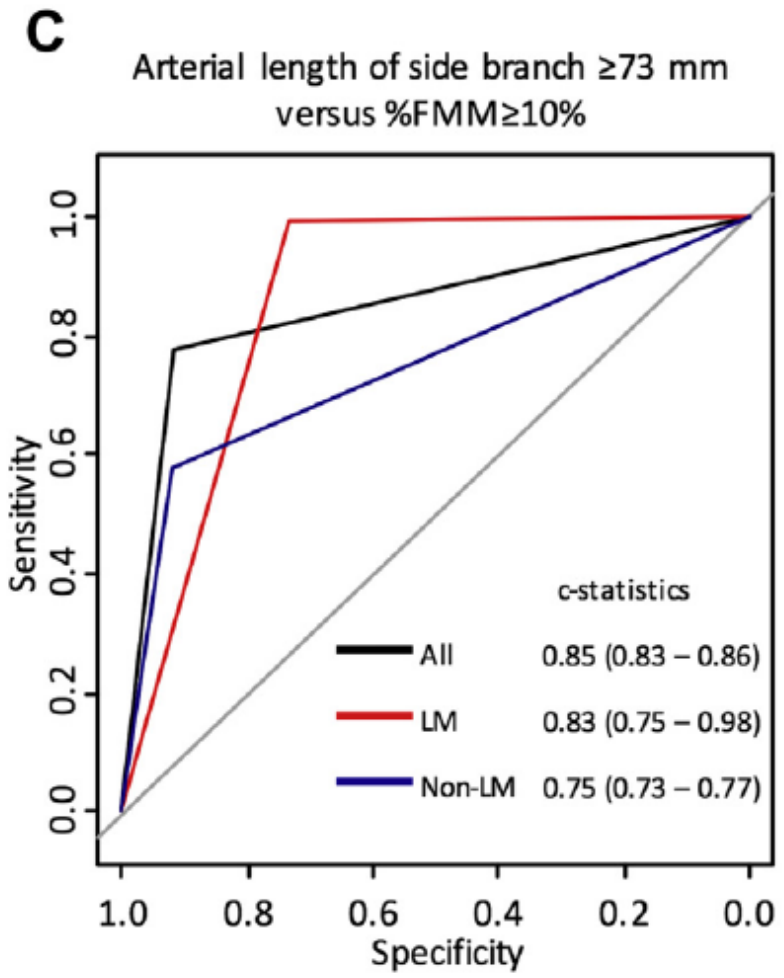


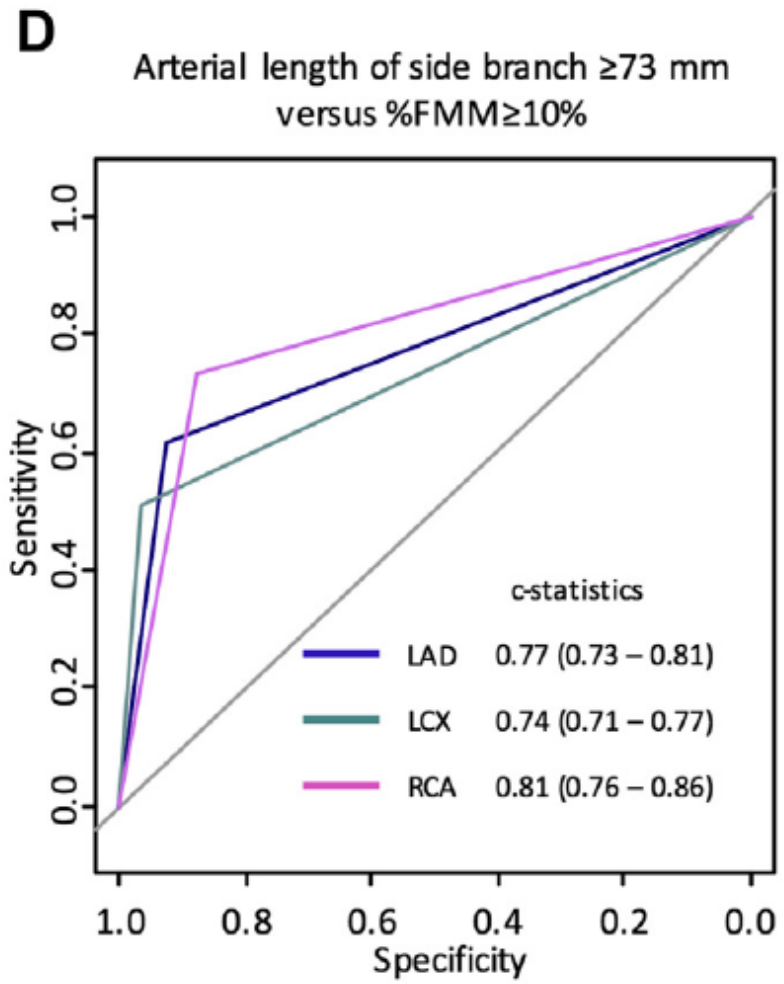

# Conclusions

- Isolated side branch disease accounts for 2.5% of disease and 3.5% of all bifurcations
- Associated with poorer outcomes
- Only 20% non LMS SB lesions supply more than 10% of myocardial mass
- Consider anatomical vs functional significance
- No difference between 1 vs 2 stent approaches
- Consider DCB for non-LMS bifurcations