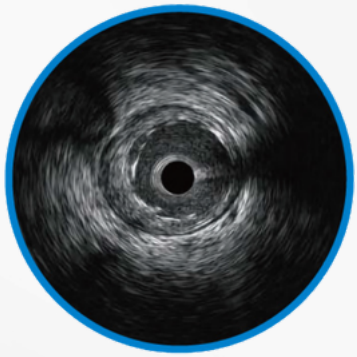
CASE **SPOTLIGHT** *Series*

Featuring: **SonoScape**
HD IVUS System





Assess
with Clarity

Strategize
the Approach

Deliver
with Confidence

Assess.
Strategize.
Deliver.

Dr. Krzysztof Pujdak
Interventional Cardiologist
KMG Klinikum Güstrow, Germany

OrbusNeich® Academy

CASE **SPOTLIGHT**



Dr. Krzysztof Pujdak

Interventional Cardiologist
KMG Klinikum Güstrow, Germany

INTRODUCTION

Intravascular imaging has become an integral part of contemporary coronary intervention, providing detailed insights into vessel morphology that support accurate lesion assessment, procedural planning, and treatment optimization. Recognized as a Class I recommendation in both AHA/ACC/SCAI and ESC PCI guidelines, its use is supported by strong clinical evidence demonstrating improved procedural outcomes compared with angiography-guided intervention alone.

The following cases illustrate a range of real-world clinical scenarios in which IVUS contributed to decision-making, treatment strategy, and procedural confidence, highlighting its value across different stages of coronary intervention.

DISCUSSION CASES

- **Calcium Cracks with Dissection**
- **Covered Stent in Perforation**
- **Geographic Miss**
- **Stent Edge Dissection with Intramural Hematoma**

CASE **SPOTLIGHT**

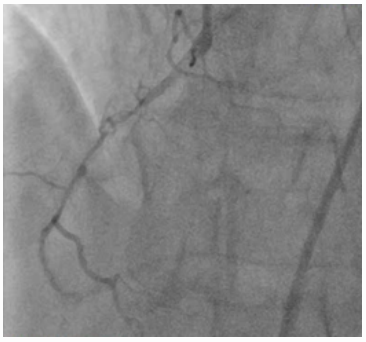
CASE #1

Calcium Cracks with Dissection

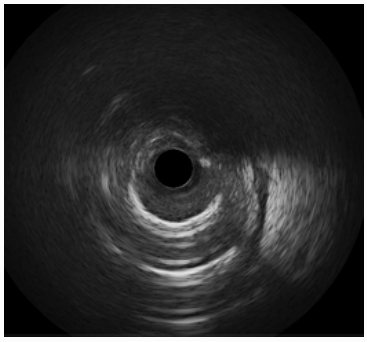
BACKGROUND

- IVUS demonstrated a heavily calcified RCA with extensive circumferential calcification and multiple segments exhibiting a 360° calcium arc
- Aggressive lesion preparation was subsequently performed with rotational atherectomy, repeated high-pressure balloon dilatations, and high-pressure cutting balloon angioplasty
- Post-preparation IVUS revealed multiple visible calcium fractures and cracks, indicating effective modification of the calcified plaque
- Localized dissection with associated intramural hematoma was also observed, reflecting the intensity of plaque modification and balloon-based expansion within a severely calcified vessel segment

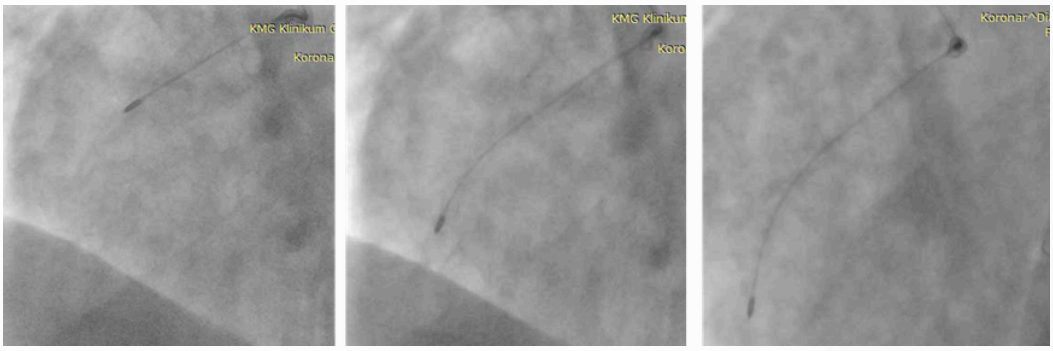
ANGIOGRAPHIC AND IVUS IMAGES



Heavily calcified RCA



Extensive circumferential calcification with multiple 360° calcium arc

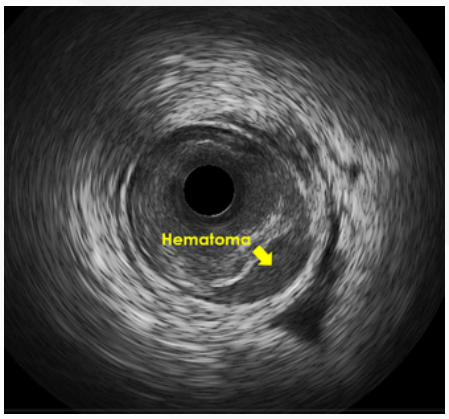


Lesion preparation with multiple runs using rotational atherectomy (see above pictures in sequence), followed by repeated high-pressure balloon dilatations, and high-pressure cutting balloon angioplasty to open up the RCA channel.

CASE **SPOTLIGHT**

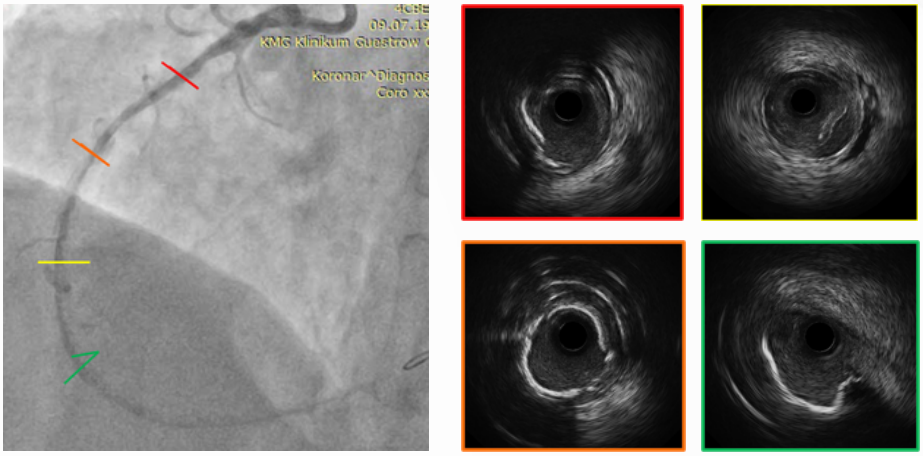


Localized dissection with intramural hematoma

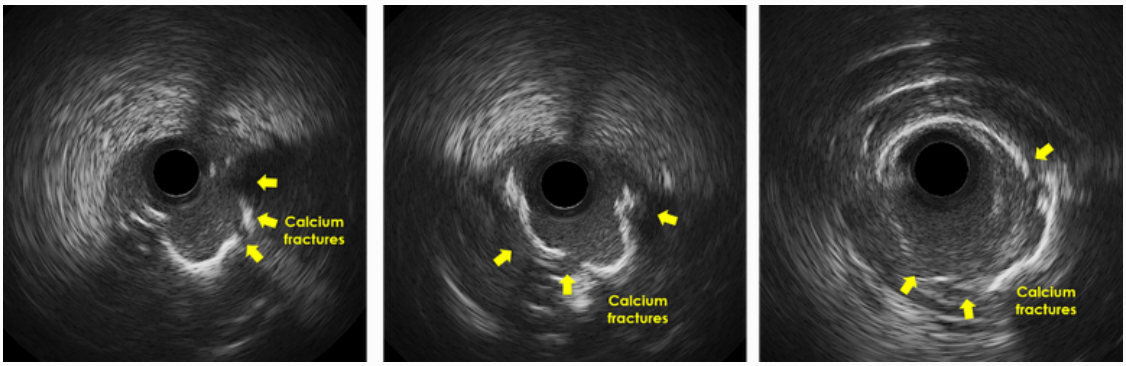


Localized dissection with intramural hematoma

CORRESPONDING IVUS FRAMES TO ANGIOGRAM



POST ATHERECTOMY AND BALLOONING IVUS IMAGES



Multiple visible calcium fractures and cracks can be appreciated, indicating effective modification of the calcified plaque and successful lesion preparation.

CASE **SPOTLIGHT**

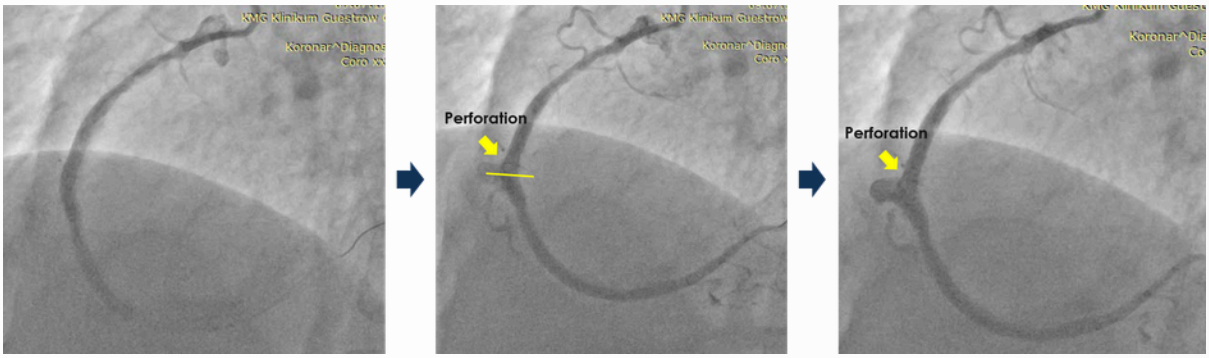
CASE #2

Covered Stent in Perforation

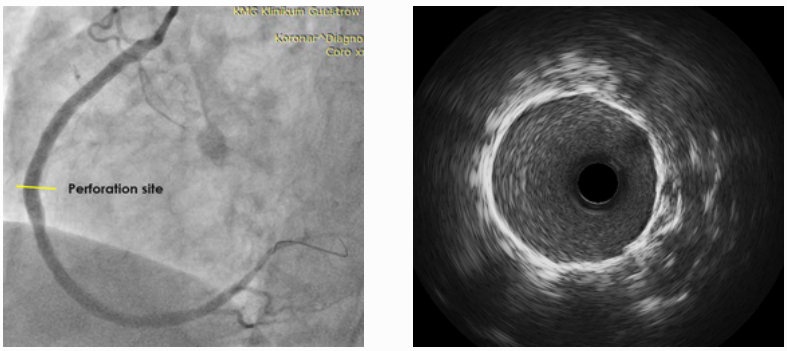
BACKGROUND

- An extremely heavily calcified chronic total occlusion of the dominant RCA was identified
- Lesion preparation was performed with rotational atherectomy, followed by high-pressure balloon dilatation and cutting balloon angioplasty
- Following stent implantation, a sudden pressure drop was observed, and angiography revealed a severe perforation in the mid-RCA
- A 4.0 mm PK Papyrus covered stent was subsequently implanted to seal the perforation. Post-procedural IVUS demonstrated a distinct covered stent layer with clear visualization of the struts from the previously implanted stent

ANGIOGRAPHIC AND IVUS IMAGES



Post-stenting angiogram (upon notice of sudden pressure drop) revealed severe perforation at mid-RCA



Corresponding angiogram (right) and IVUS image (left) showing full coverage of the perforation by the covered stent (blue) with clear visualization of stent struts (yellow) of the previously implanted stent

CASE **SPOTLIGHT**

CASE #3

Geographic Miss

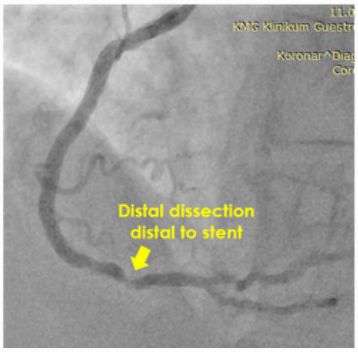
BACKGROUND

- Aggressive lesion preparation with NC ballooning, scoring balloon, and cutting balloon angioplasty was performed in the proximal RCA, followed by stent implantation
- Post-stenting angiography revealed a balloon-induced dissection at the distal stent edge that was not covered by the implanted stent
- Subsequent IVUS confirmed the distal dissection and demonstrated that the injured segment extended beyond the stented area
- This case highlights the importance of performing a thorough IVUS pullback prior to stenting to accurately define the full extent of the diseased and injured segments, enabling appropriate stent length selection and complete lesion coverage

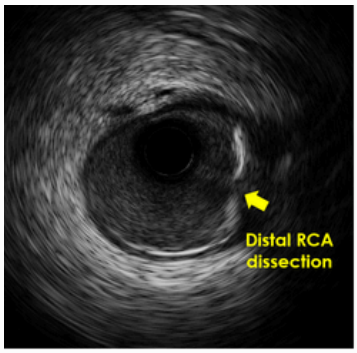
ANGIOGRAPHIC AND IVUS IMAGES



Pre-PCI angiogram of diseased RCA



Post-stenting angiogram showed uncovered dissection distal to stent



IVUS confirmed disital dissection requiring further treatment



Final angiogram after covering the geographically missed dissection

CASE **SPOTLIGHT**

CASE #4

Stent Edge Dissection with Intramural Hematoma

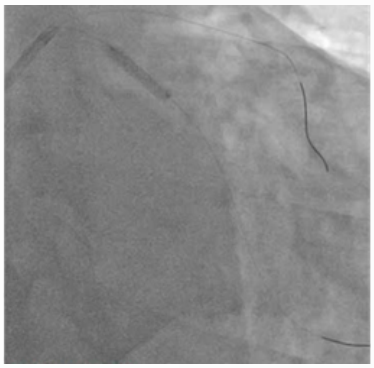
BACKGROUND

- A heavily calcified proximal LAD was treated with lesion preparation using balloon angioplasty, followed by stent implantation
- Post-procedural IVUS revealed a distal stent-edge dissection associated with an intramural hematoma, resulting in mild compression of the true lumen
- A second stent was subsequently implanted to fully cover the dissection, resulting in stabilization of the injured segment and restoration of a favorable luminal appearance

ANGIOGRAPHIC AND IVUS IMAGES



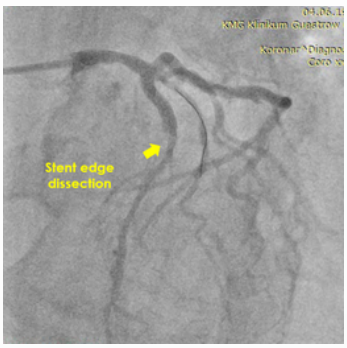
Diseased proximal LAD



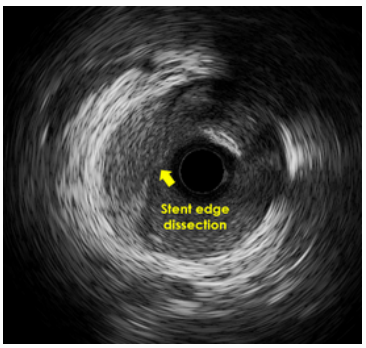
Lesion preparation of proximal LAD



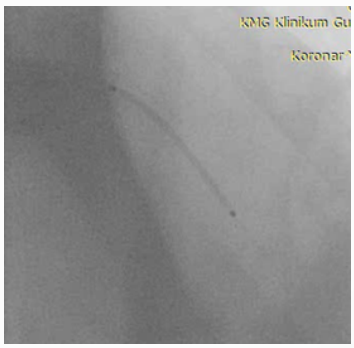
Stenting of proximal LAD



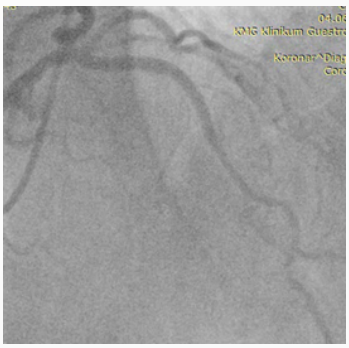
Distal stent edge dissection



Localized dissection with intramural hematoma



Placement of a 2nd stent distal to cover distal edge dissection of proximal stent



Final angiogram after implantation of 2nd stent to cover dissection

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