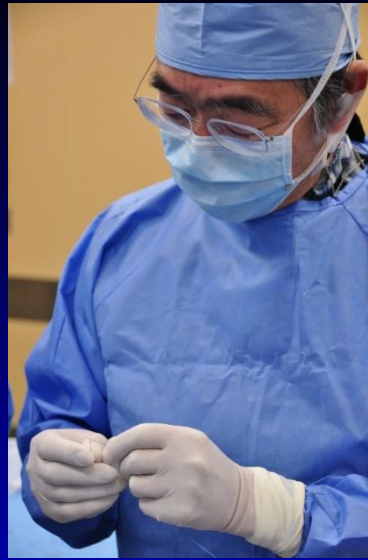


# **Dr. Mitsudo's Accomplishment in the Field of CTO**

**Kazushige Kadota  
Kurashiki Central Hospital  
Japan**



*Kurashiki Central Hospital*



**Dr. Kazuaki Mitsudo passed away on October 18<sup>th</sup>, 2015.**

**While he is sadly gone, his passion for improving medicine, particularly in the field of CTO, and his lessons to all of us will live on forever.**



***Kurashiki Central Hospital***

# **Dr. Mitsudo's Accomplishment in the Field of CTO**

- 1. A huge number of CTO PCI cases with excellent success rates**
- 2. Development and refinement of devices**
- 3. Development of new techniques and methods**
- 4. Education of countless interventionists**
- 5. Publication of innovation-based medicine**



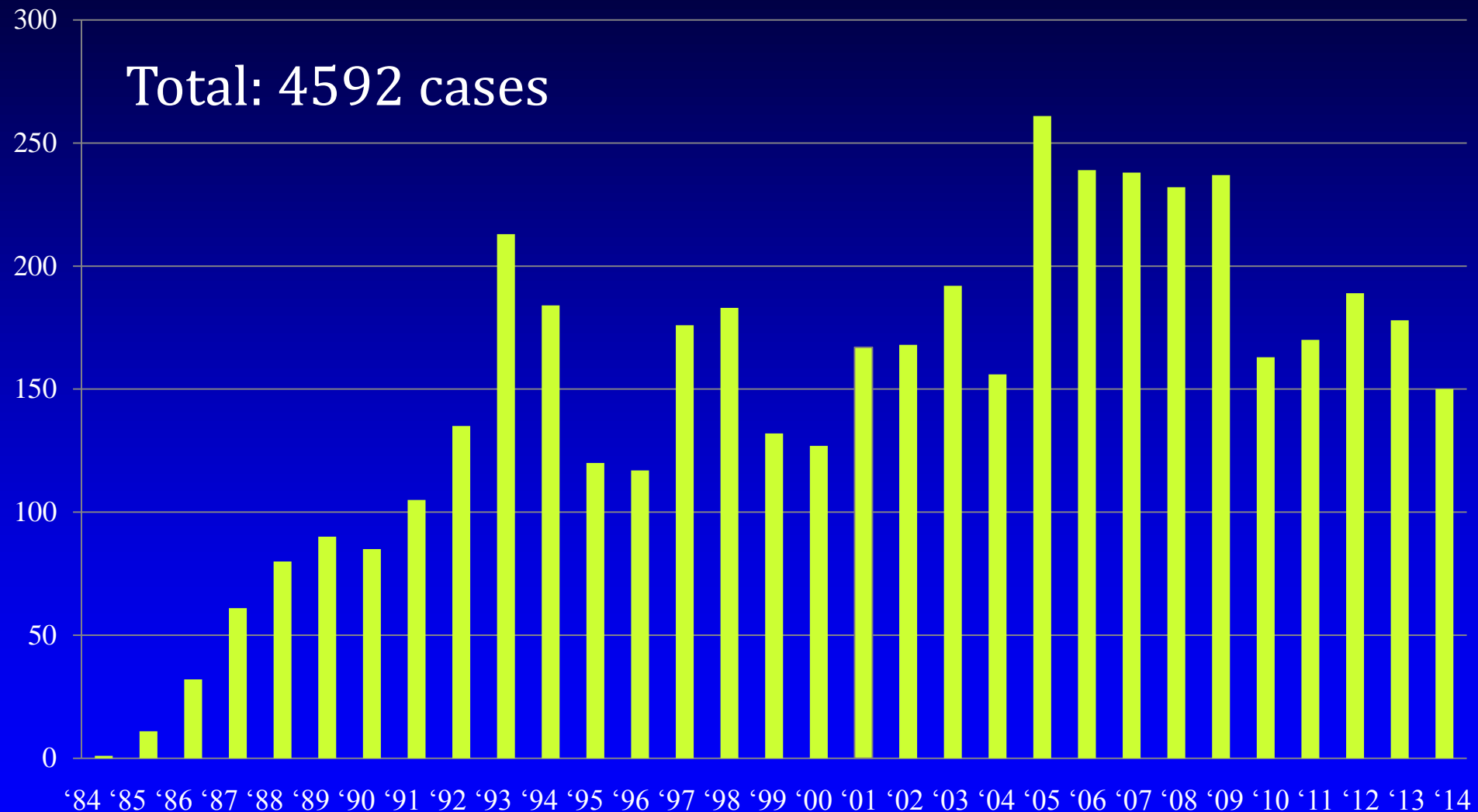
# PCI for CTO

in Kurashiki Central Hospital



*Kurashiki Central Hospital*

# PCI for CTO in Kurashiki

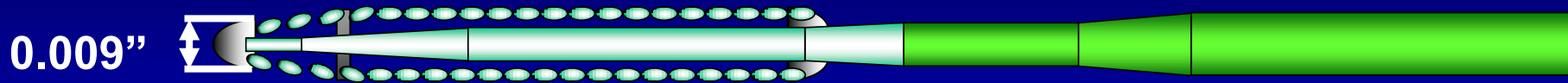


# Conquest Pro Series

## Tapered and stiff-tip guidewire

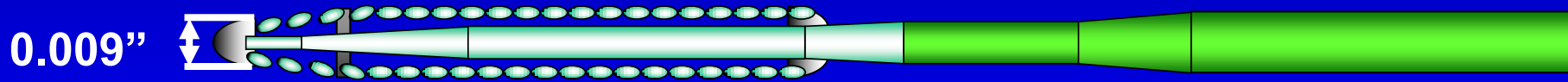
### neo's Conquest Pro

(Tip load 9.0G)



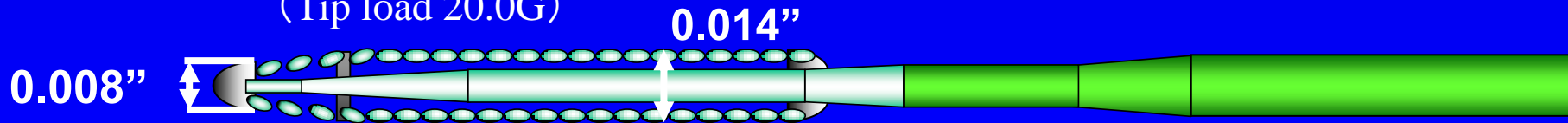
### neo's Conquest Pro 12

(Tip load 12.0G)



### neo's Conquest Pro 8-20

(Tip load 20.0G)



# Parallel Wire Method



Leaving the guidewire which was advanced into the subintimal space as a landmark, seek the true lumen by using another guidewire.





# Seesaw Wiring Method



Seesaw wiring uses two over-the-wire support catheters at a time, which makes the guidewire manipulation easier.





*Original Contribution*

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**Recanalization Strategy for Chronic Total Occlusions with Tapered and Stiff-Tip Guidewire. The Results of CTO New technique for Standard Procedure (CONQUEST) Trial**

<sup>a</sup>Kazuaki Mitsudo, MD, <sup>b</sup>Takehiro Yamashita, MD, <sup>c</sup>Yasushi Asakura, MD, <sup>d</sup>Toshiya Muramatsu, MD,  
<sup>e</sup>Osamu Doi, MD, <sup>f</sup>Yoshisato Shibata, MD, <sup>g</sup>Yoshihiro Morino, MD

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**A Prospective Multi-Center Registry in Japan**

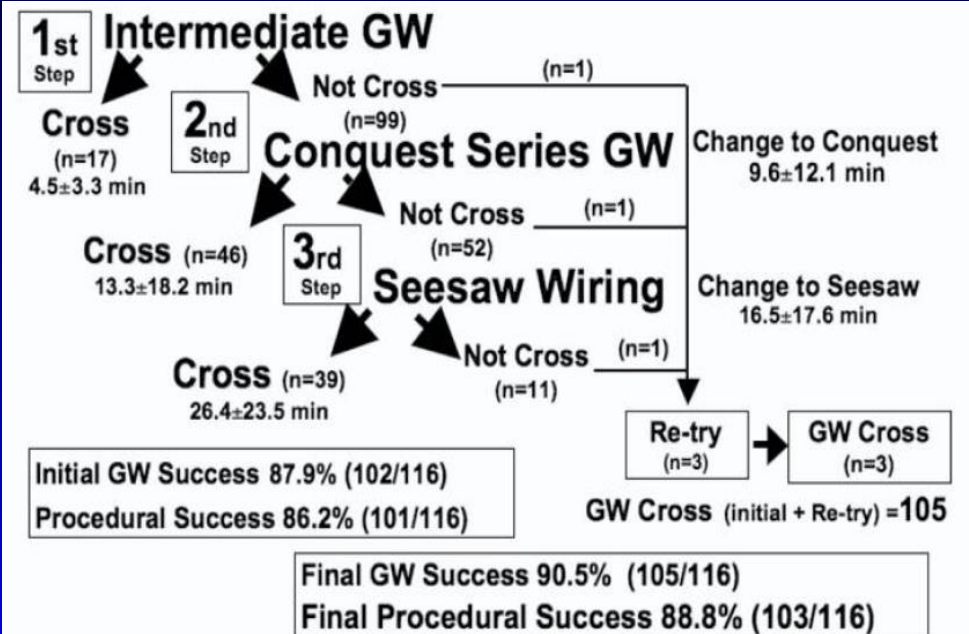
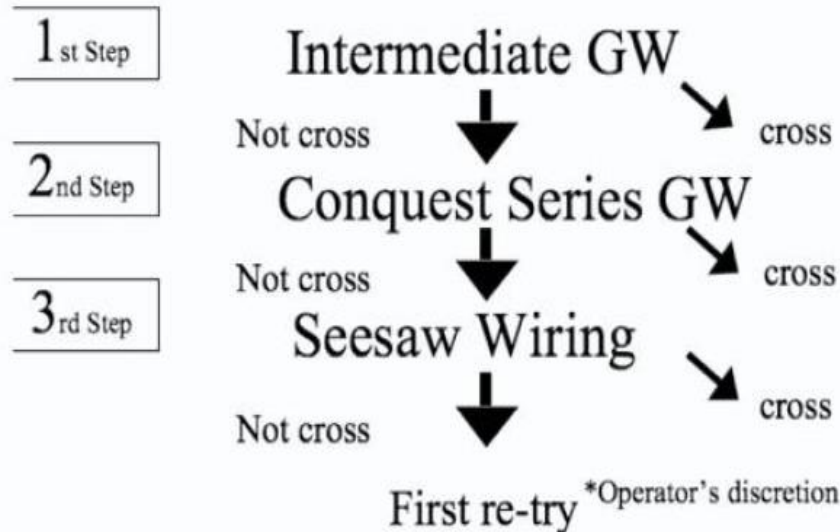
**K. Mitsudo et al. J Interv Cardiol. 2008;20:571-7.**



# Algorithm of Strategy

# Success Rates

## Sequence of GW manipulation



**Guidewire success rate 90.5%**  
**Procedural success rate 88.8%**

**From these results, Conquest study demonstrated the successful standardization of the guidewire strategy for antegrade CTO PCI.**



# J-CTO Registry

**Multicenter CTO Registry in Japan**



*Kurashiki Central Hospital*

# Predicting Successful Guidewire Crossing Through Chronic Total Occlusion of Native Coronary Lesions Within 30 Minutes

The J-CTO (Multicenter CTO Registry in Japan) Score  
as a Difficulty Grading and Time Assessment Tool

Yoshihiro Morino, MD,\* Mitsuru Abe, MD,† Takeshi Morimoto, MD,§ Takeshi Kimura, MD,‡  
Yasuhiko Hayashi, MD,|| Toshiya Muramatsu, MD,¶ Masahiko Ochiai, MD,#  
Yuichi Noguchi, MD,\*\* Kenichi Kato, MD,†† Yoshisato Shibata, MD,‡‡  
Yoshikazu Hiasa, MD,§§ Osamu Doi, MD,||| Takehiro Yamashita, MD,¶¶  
Tomoaki Hinohara, MD,## Hiroyuki Tanaka, MD,\*\*\* Kazuaki Mitsudo, MD,\*\*\*  
for the J-CTO Registry Investigators

*Isehara, Kyoto, Hiroshima, Yokohama, Tsukuba, Miyazaki, Komatsushima, Shizuoka, Sapporo,  
and Kurashiki, Japan; and Redwood City, California*



# J-CTO SCORE SHEET

Version 1.0

## Variables and definitions

### Tapered

### Blunt



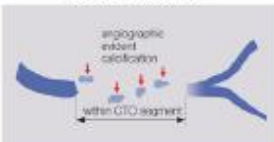
Entry with any tapered tip or dimple indicating direction of true lumen is categorized as "tapered".

### Entry shape

- Tapered (0)
- Blunt (1)

point

### Calcification



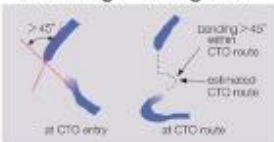
Regardless of severity, 1 point is assigned if any evident calcification is detected within the CTO segment.

### Calcification

- Absence (0)
- Presence (1)

point

### Bending >45degrees



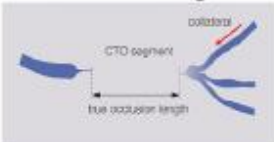
One point is assigned if bending > 45 degrees is detected within the CTO segment. Any tortuosity separated from the CTO segment is excluded from this assessment.

### Bending >45°

- Absence (0)
- Presence (1)

point

### Occlusion length



Using good collateral images, try to measure "true" distance of occlusion, which tends to be shorter than the first impression.

### Occl.Length

- <20mm (0)
- ≥20mm (1)

point

### Re-try lesion

Is this Re-try (2<sup>nd</sup> attempt) lesion? (previously attempted but failed)

### Re-try lesion

- No (0)
- Yes (1)

point

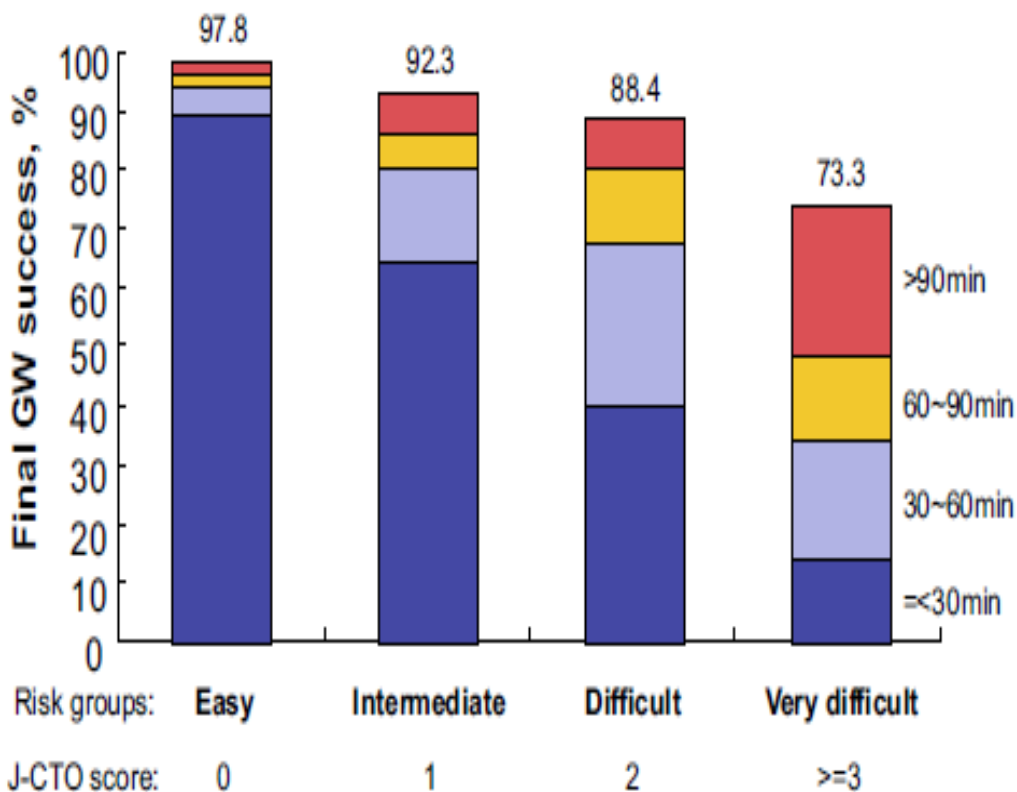
Category of difficulty (total point)

- easy (0)
- Intermediate (1)
- difficult (2)
- very difficult (≥3)

Total

points

## The Risk Groups of Difficulty and Final Procedural Rates



Y. Morino, K. Mitsudo et al. J Am Coll Interv. 2011;4:213-21



Kurashiki Central Hospital

## A New Retrograde Wiring Technique for Chronic Total Occlusion

Moo Hyun Kim,<sup>1\*</sup> MD, FACC, Long Hao Yu,<sup>1</sup> MD, and Kazuaki Mitsudo,<sup>2</sup> MD

To improve the success rate of percutaneous coronary intervention for coronary chronic total occlusion (CTO), different strategies of retrograde approach were introduced in recent years. The aim of this report is to describe a new retrograde wiring technique for CTO, the “**Bridge or Rendezvous method.**” This new technique saves time, reduces cost, as well as reduces procedure-related complications.

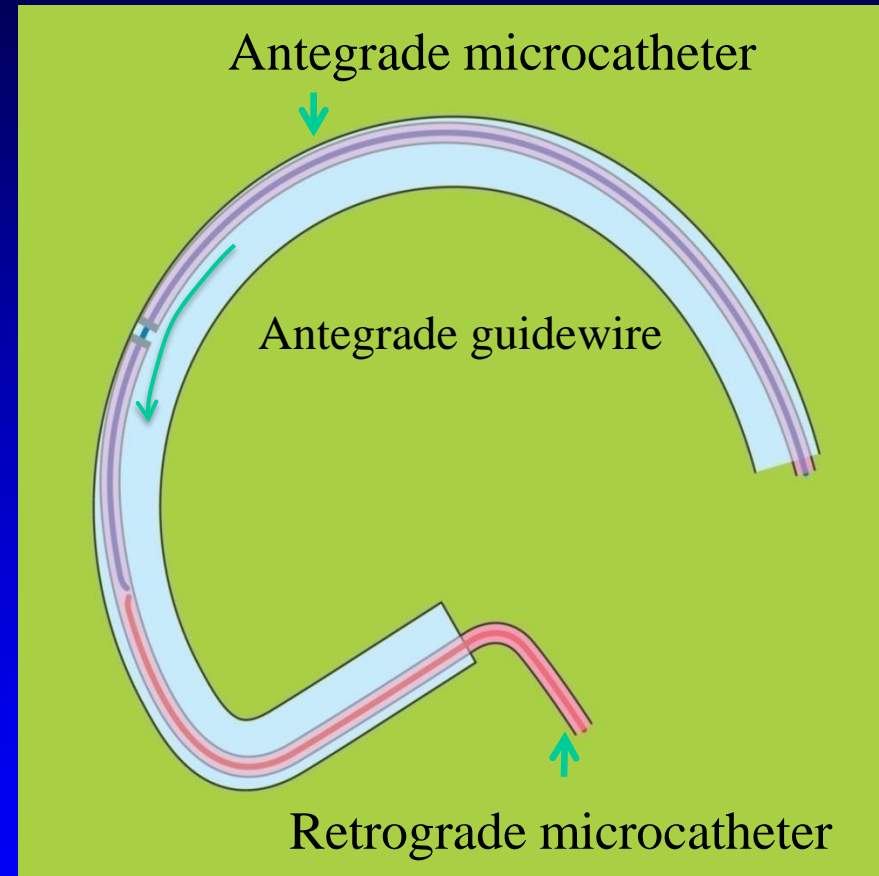




# Concept of the Rendezvous Method

**The Rendezvous method is that the antegrade and retrograde microcatheters are aligned in the antegrade guiding catheter.**

**And then an antegrade guidewire is inserted into the retrograde microcatheter.**

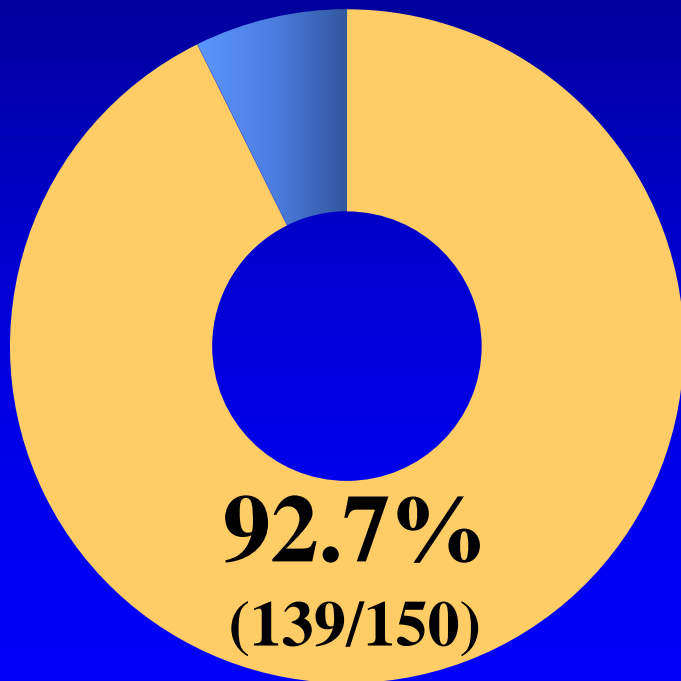




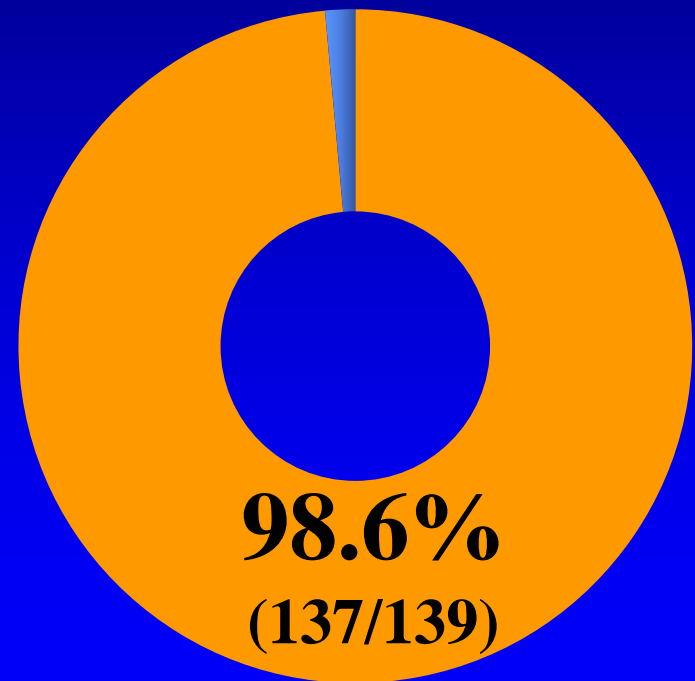
# Frequency of Rendezvous Method After Retrograde Wire Crossing

2010-2014 in Kurashiki

Use of  
the rendezvous method



Success rate of  
the rendezvous method

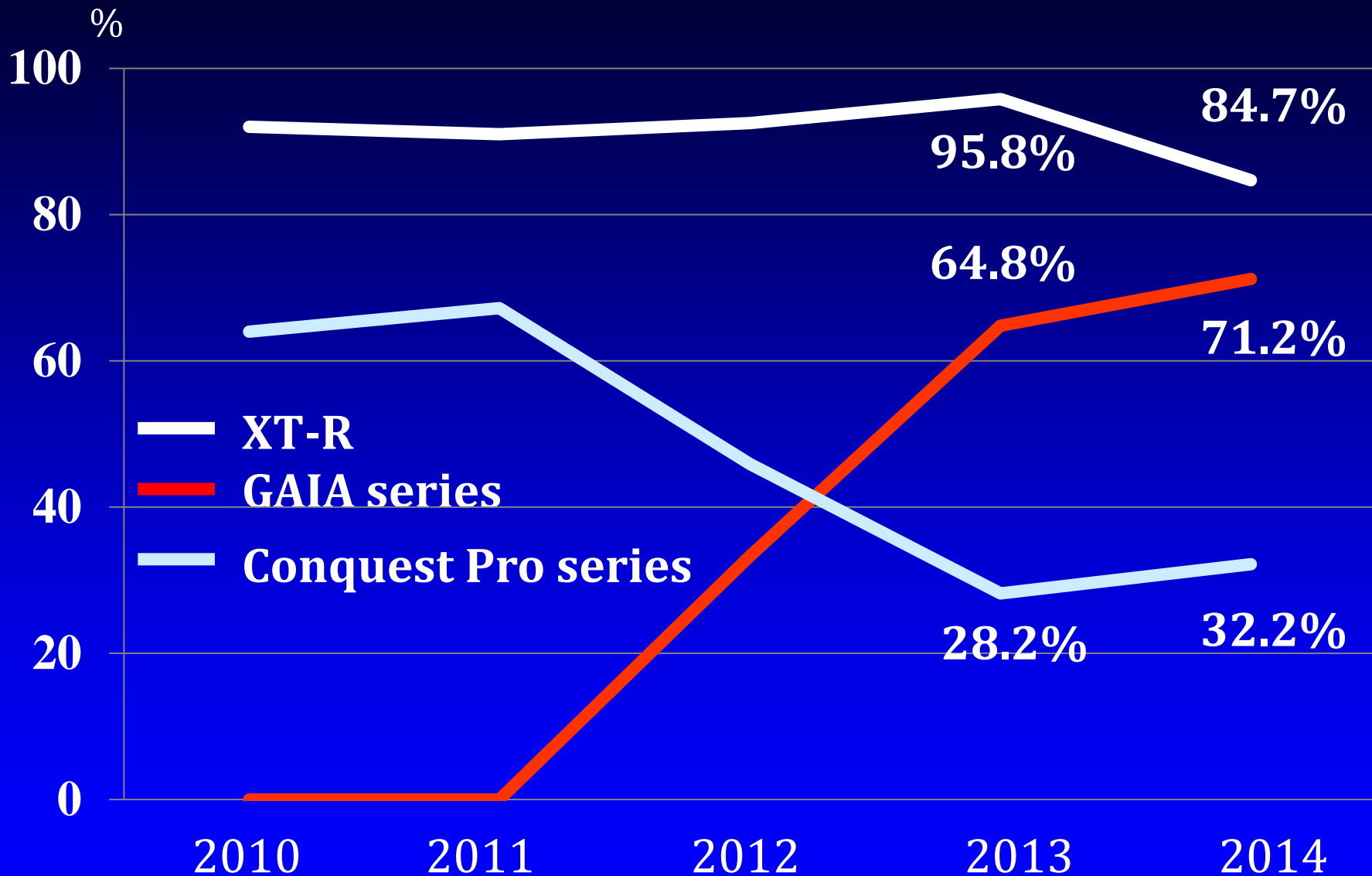


# Recent PCI Strategy and Results for CTO

by Dr. Mitsudo

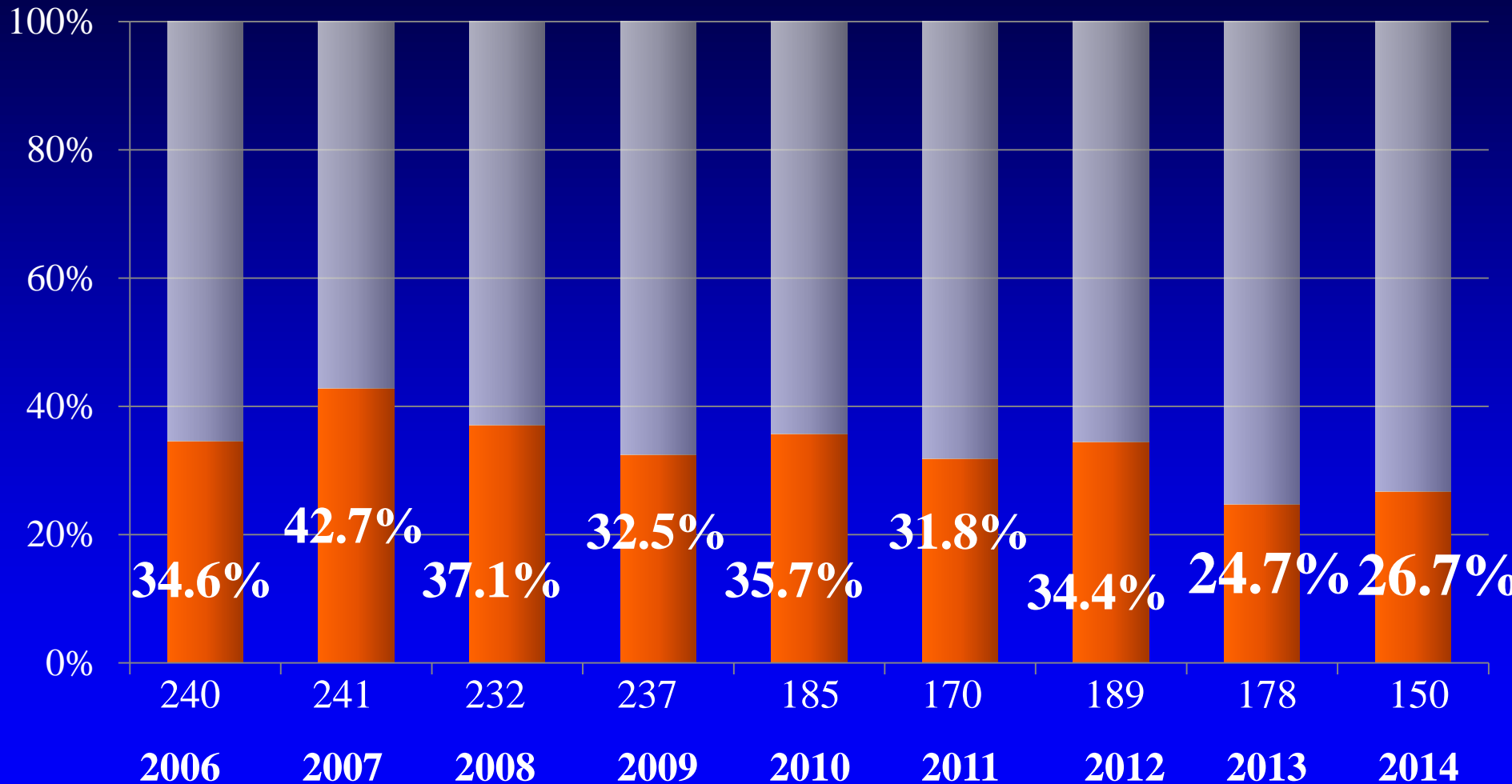


# GW in Antegrade Approach

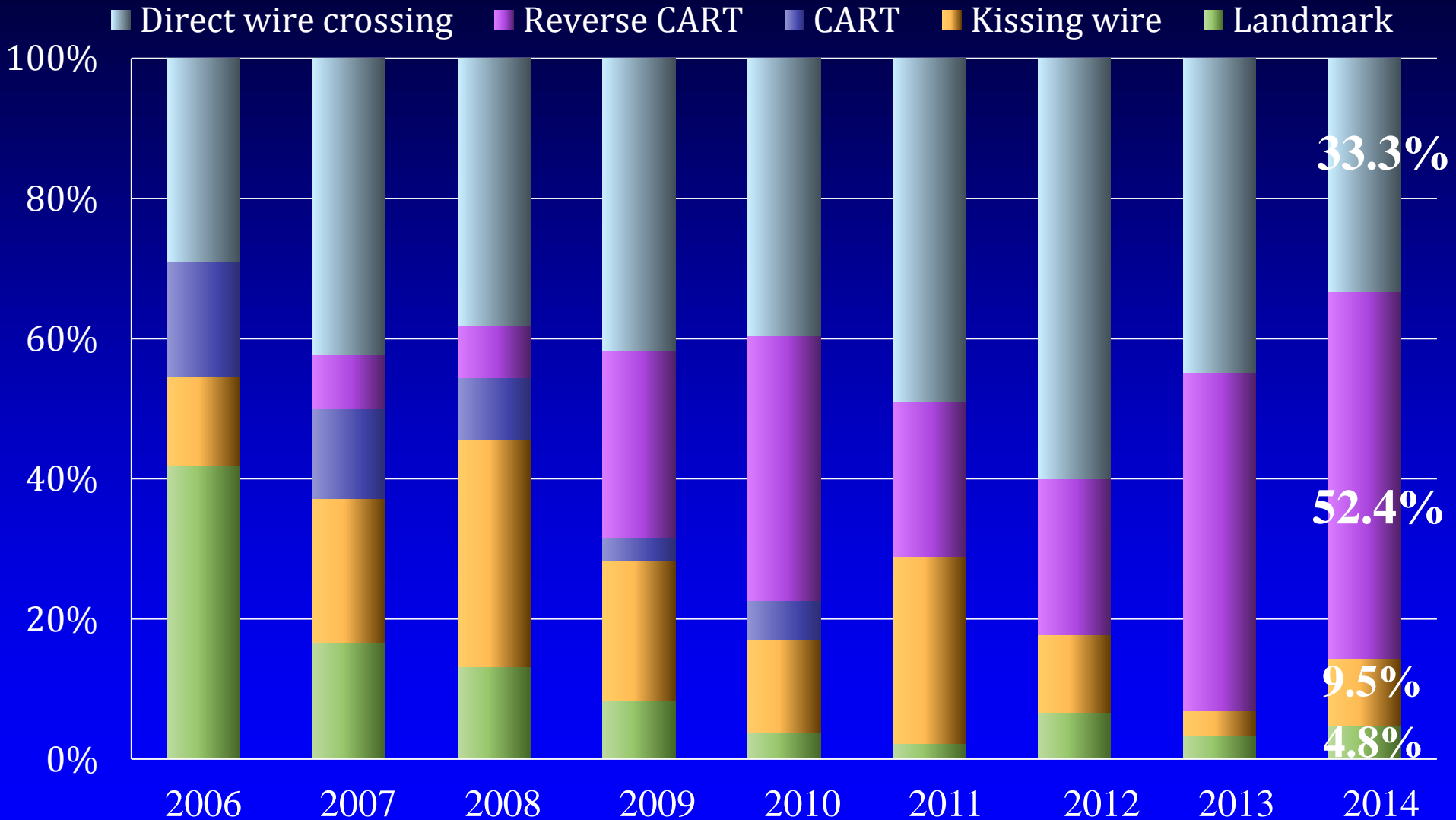


# Prevalence of Retrograde Approach

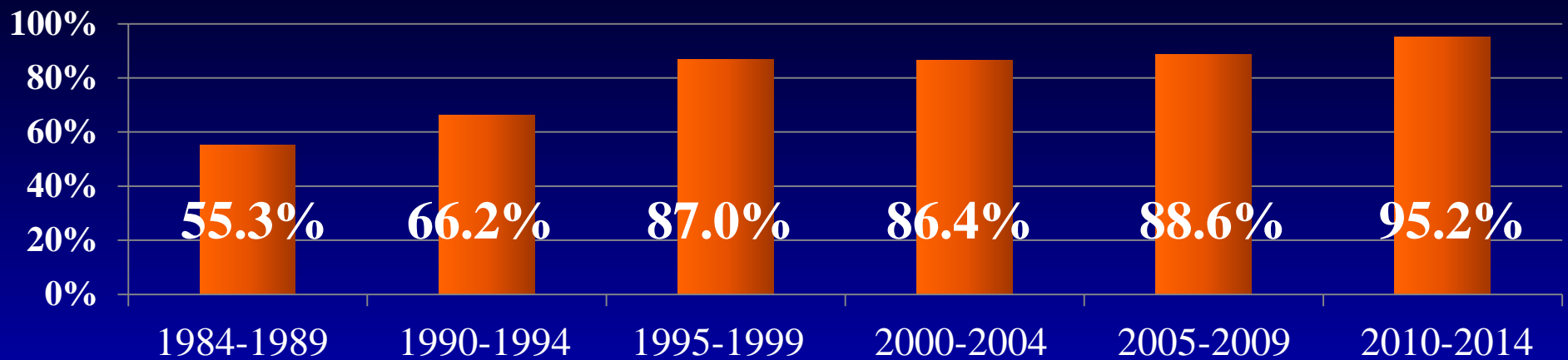
Antegrade alone Retrograde



# Retrograde Recanalization Techniques



# Overall GW Success Rate



1996- Conquest Pro series



2001- Parallel/Seesaw wiring



2005- Retrograde approach



2007- Fielder XT/XT-R



2012- GAIA series



# Education of CTO PCI by Dr. Mitsudo

- CTO PCI operator in live demonstration courses
- Teaching by visiting other cath labs
- CTO course held at Kurashiki Central Hospital
- Giving lectures at meetings
- Others





# Live Demonstration Course

**Kurashiki** Live Demonstration Course

1992-2011

Course Director



Chugoku Shikoku Live in **Kurashiki**  
joint meeting with Final Frontier Club

2012-2015

Advisor



16  
POLIVE

The 16th PCI Live D



**Chugoku shikoku Live in Kurashiki 2015  
joint meeting with Final Frontier Club (2015)**

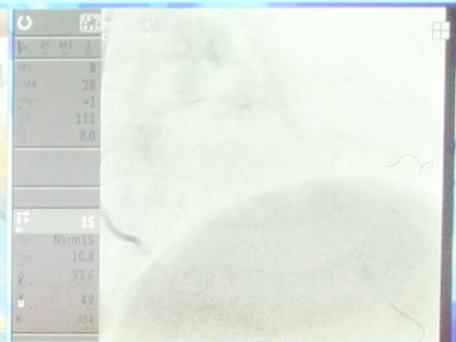
## The 16th Kurashiki Live Demonstration Course (2007)



Chugoku Shikoku Live in Kurashiki 2015  
joint meeting with Final Frontier Club

Chugoku Shikoku Live in Kurashiki 2015 joint meeting with Final Frontier Club

Case 1



Many Asian interventionists attend and they have learned  
concept and technique of PCI from Dr Mitsudo.



*Kurashiki Central Hospital*

**Dr. Kazuaki Mitsudo**

**Thank you very much  
for your great works  
in CTO PCI**

**May you soul rest in peace**

