

# **Tornus for Balloon- failures**

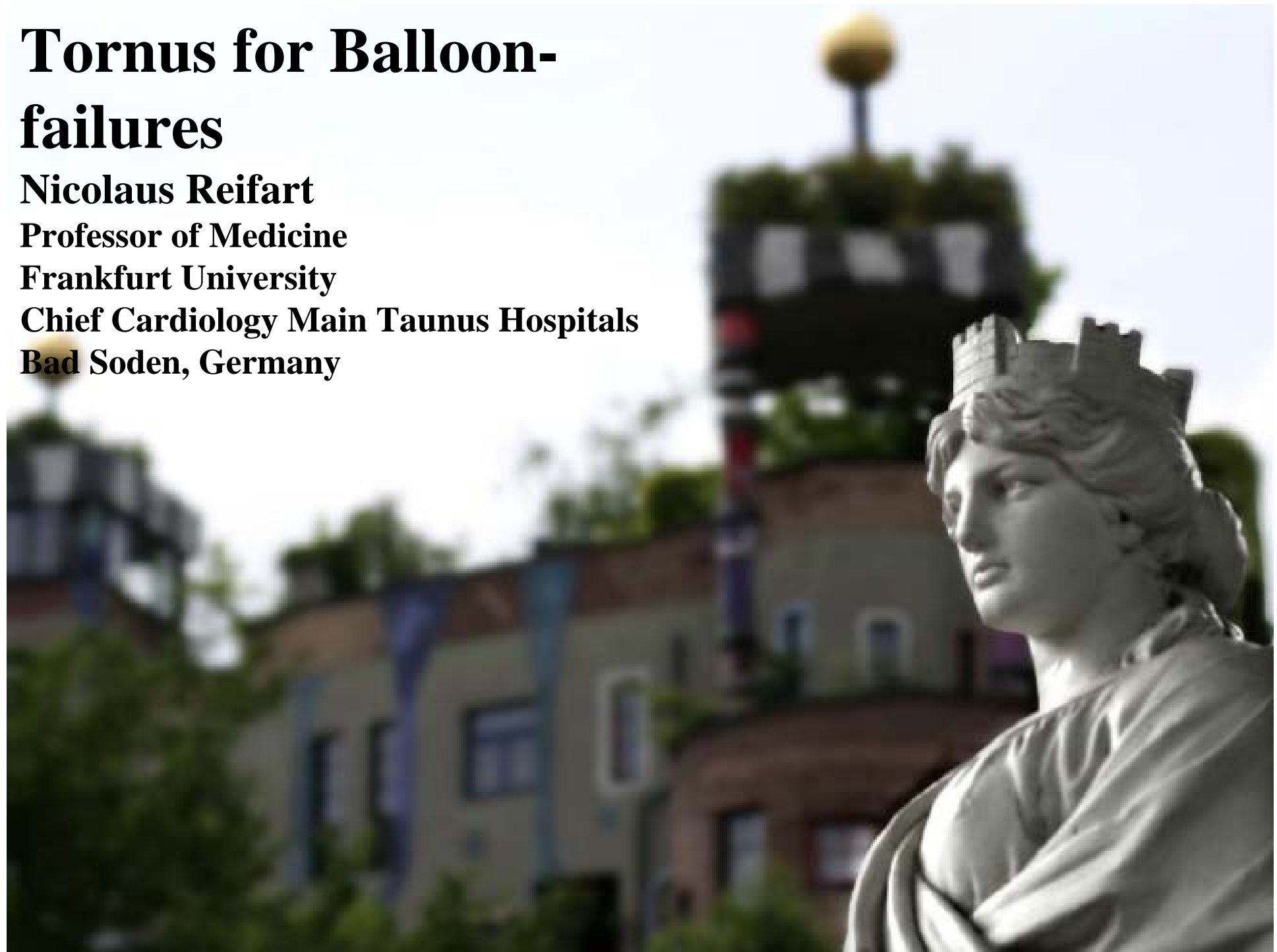
**Nicolaus Reifart**

**Professor of Medicine**

**Frankfurt University**

**Chief Cardiology Main Taunus Hospitals**

**Bad Soden, Germany**



## Balloon does not follow wire (up to 30% of CTO)

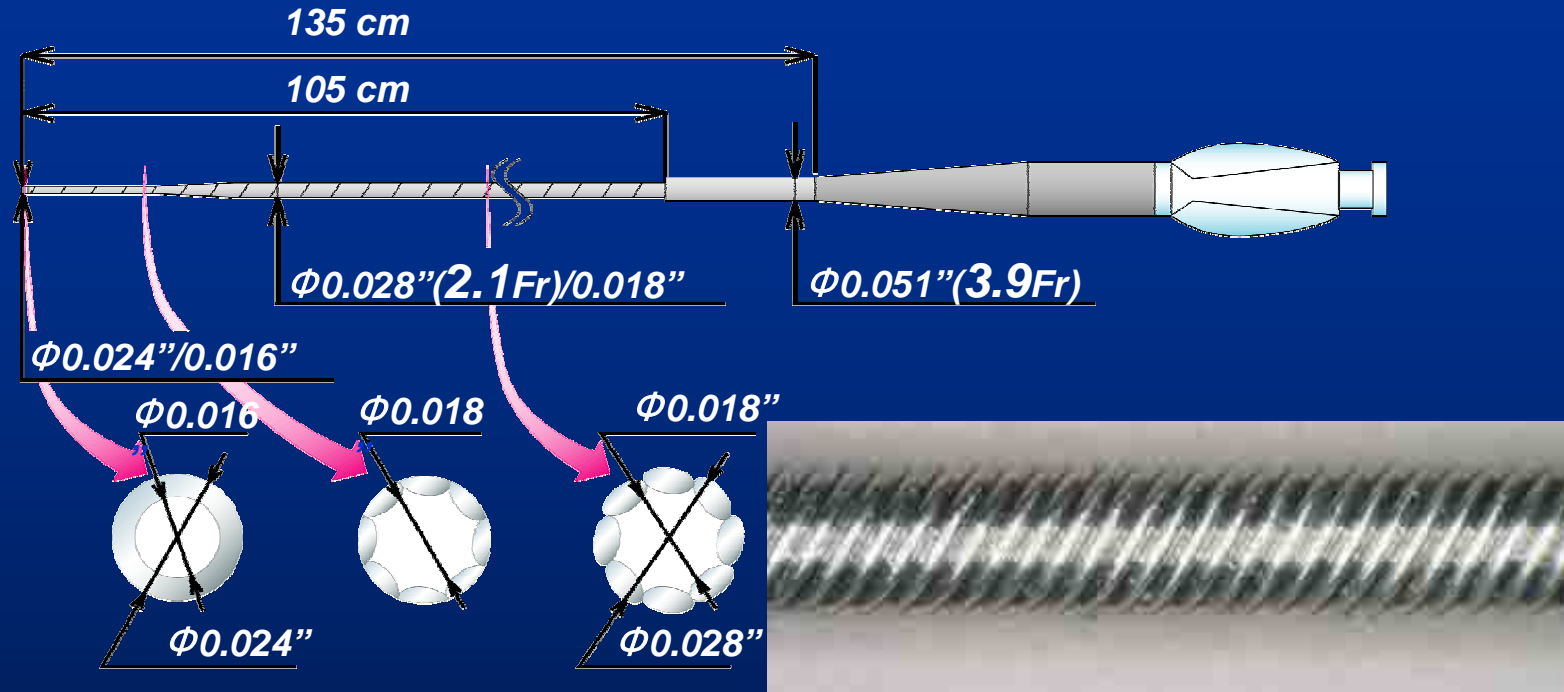
- Anchor wire (Ironman)
- Anchor balloon
- Exchange guide (or 5 in 6 System)
- Laser Rotablator
- Final balloon failure: 3-5 %

## Balloon does not follow wire (up to 30% of CTO)

- Anchor wire (Ironman)
- Anchor balloon
- Tornus
- Exchange guide (or 5 in 6 System)
- Laser Rotablator
- Final balloon failure: < 1%

# *Tornus “exchange” catheter (2.1 and 2.6 F)*

- Metal catheter with 8 stainless steel wires of spiral structure.



- **Spiral structure provides screw motion.**

\*Flushing is not possible because of clearance gaps between each single wire.

# USE of Tornus

- Dock-wire (or intra guiding balloon-anchor) mandatory
- Fix wire with Torquer
- Insert twisting Tornus counterclockwise (20 rotations then release)
- Retrieve twisting clockwise

# CTO RCA

- 3 years documented CTO
- Angina CCS III due to disease progression (CX)
- PCI 3 weeks ago not successful (wire did not cross)

## **A novel penetration catheter (Tornus) as bail-out device after balloon failure to recanalise long, old calcified chronic occlusions**

Nicolaus Reifart\*, MD FESC, FACC; Darius Enayat, MD; Kiriakos Giokoglu, MD

*Kliniken des Main Taunus Kreises and Kardiologische Praxis Prof. Reifart & Partner, Bad Soden, Germany*

## Results of Tornus in Balloon Failures

- 12/2004-11/2007 2881 PCI
- 421 CTO precedures
- 44 successive balloon failures
- **Balloon failures in CTO: 39/421**
- (Ironman-backup applicable in 30/44)





## Results of Tornus\* in CTO Balloon Failures 2005- 07 (44/421)

- Tornus passed completely 35 (79.5%) and 9 incompletely
- Overall T-enhanced success 91%
- **No complications**

\* Not yet available in Europe

N. Reifart  
EuroIntervention 2008

# Conclusion

- Problems to pass with balloons are rare today but still a reason for unsuccessful PCI of CTO in 3-5% of the failures
- It occurs mostly in RCA – lesions
- Tornus is a very useful and easy to use device to overcome these problems