LEIPZIG INTERVENTIONAL COURSE
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Use of OCT and IVUS during CAS

One step beyond
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The Importance of IVUS or OCT Imaging of the Carotid Plaque:

- to diagnose a stenosis: **NO**
- to detect plaque quality
- for the strategy of the intervention
  - vessel diameters/lesion length
  - device selection
- to evaluate the result
  - of the procedure
  - of the devices
The Importance of IVUS or OCT Imaging of the Carotid Plaque:

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Carotid OCT before CAS

Symptomatic ICA; occluded ECA

Symptomatic & soft plaque: go for closed cell stent design
OCT with proximal protection (Mo.Ma)

Advance short monorail C7 dragonfly OCT catheter

Gentle, hand-injection of 10cc 50% diluted saline/dye. When OCT image ok: 3 sec (50 mm pullback)

Re-aspirate injected dye
IVUS (+ Virtual Histology)

Irshad k et al. J Endovasc Ther 2007;14:198-207
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diameter 5.64 mm; area 21.80 mm²
Diameter: 5.3 x 5.9 mm
Lesion length: 19 mm
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  - device selection
- to evaluate the result: YES
The Importance of OCT Imaging of the Carotid Plaque:

- to diagnose a stenosis
- to detect plaque quality
- for the strategy of the intervention
  - vessel diameters
  - device selection
- to evaluate the result: probably the most important application of carotid OCT
OCT: First impressions

Open cell struts

Closed cell struts
Plaque rupture
Plaque prolaps

- Gore NPS
- Balance MiddleWeight wire
- Predilatation with Maverick 2.5 x 20 mm
- Stent 6-8 x 40 mm
- Postdilatation with Sterling 5 x 20 mm at 10 atm

Sting sign
Plaque prolapse

Flow artefact (covers struts)

Symmetric, regular, closed cell struts

Plaque prolapse (through struts)
OCT: First impressions

Not complete CCA apposition
IVUS evaluation of CAS

Stent protrusion disappeared after stenting in stent.

Stent protrusion

PRECISE 9.0-40mm

PRECISE 6.0-20mm

Courtesy Norihiko Shinozaki
Mesh covered stents

MGuard® Carotid Solutions: Inspire MD

Terumo® Carotid Stent

GORE® Carotid Stent
91 years old lady with minor stroke 2 days earlier: Mo.Ma & C Guard
Terumo® Carotid Stent Roadsaver

Courtesy: A Cremonesi
Terumo® Carotid Stent Roadsaver

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OCT & IVUS for CAS:

- a very useful scientific tool
  - to correlate plaque quality & outcome
  - to evaluate CAS results
  - to evaluate different stents

- a useful clinical tool in certain situations
  - to correlate plaque quality & outcome
  - to evaluate CAS results
  - to evaluate different stents

Conclusions
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