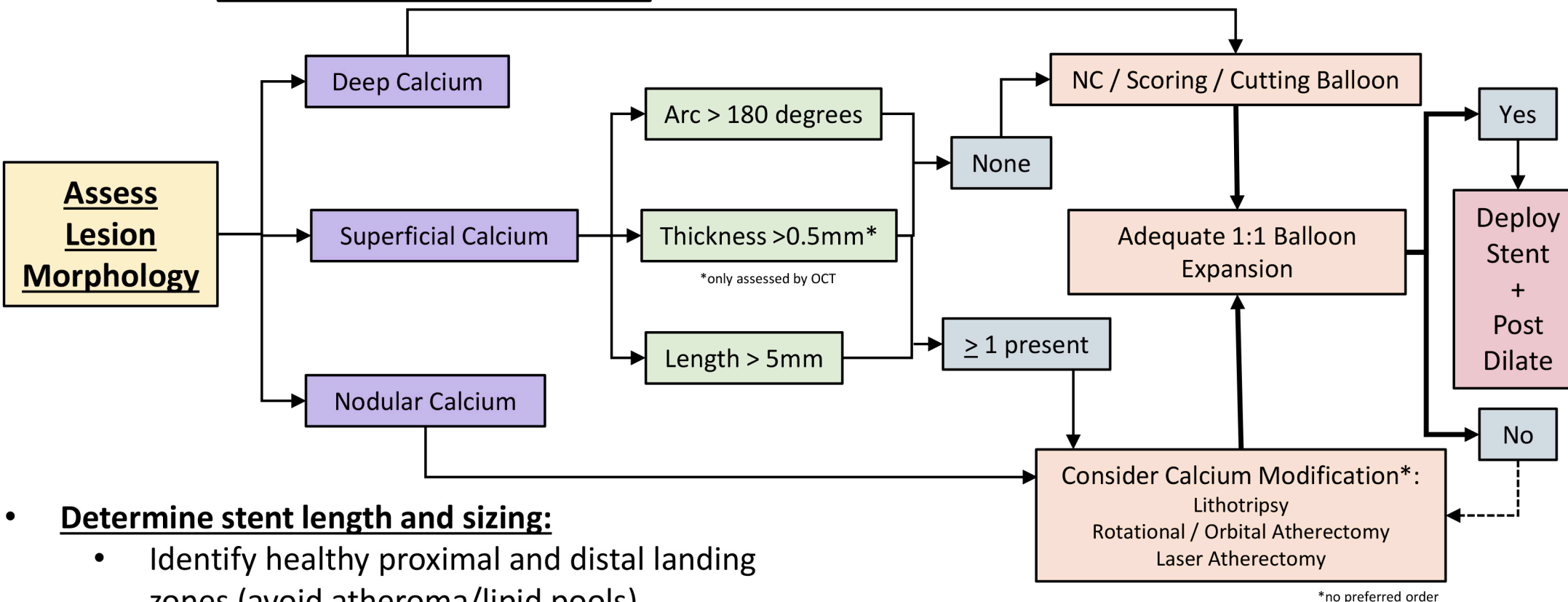


IVUS and OCT for PCI Optimization

Pre-PCI Imaging

Post-PCI Imaging



Measure Minimal Stent Area (MSA) and Optimize Stent expansion:

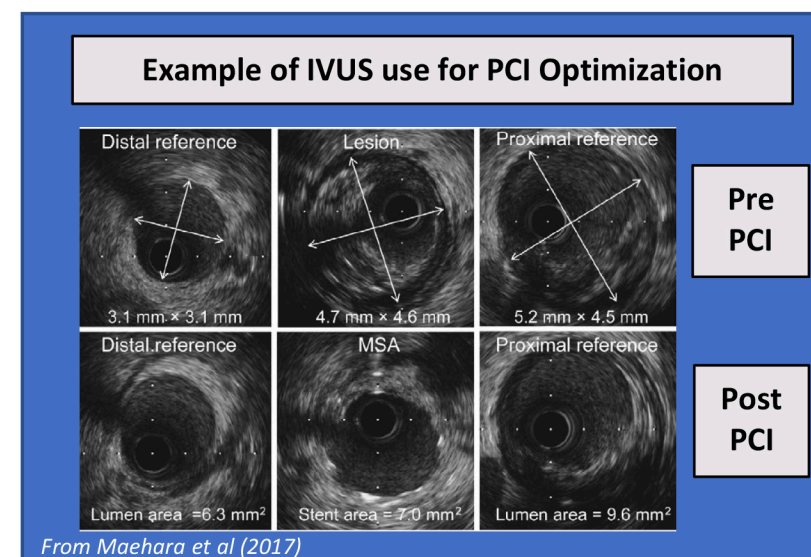
- Optimal: MSA ≥90% distal ref area
- Acceptable: MSA ≥80% distal ref area
- MSA >5.5 mm² by IVUS for non-left main
- MSA >4.5mm² by OCT for non-left main

Dissection:

- Ensure no stent edge dissections involving media >3mm in length and/or 90-degree arc in diameter

Identify stent malapposition:

- Consider post-dilation of proximal edge malapposition (may interfere with re-wiring) and gross malapposition of long segments (>3mm), or malapposition associated with stent under-expansion.
- Treat with low pressure semi-complaint balloon.



References:

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- Mintz et al. Intravascular Imaging for Percutaneous Coronary Intervention Guidance and Optimization: The Evidence for Improved Patient Outcomes, *JSCAI* 1 (2022) 100413
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- Maehara et al. IVUS-Guided Versus OCT-Guided Coronary Stent Implantation: A Critical Appraisal. *JACC Cardiovasc Imaging* 2017;10(12):1487-503.
- Shlofmitz E., et al. The MLD MAX OCT algorithm: An imaging-based workflow for percutaneous coronary intervention. *Catheter Cardiovasc Interv* 2022;100 Suppl 1:S7-13.

Determine stent length and sizing:

- Identify healthy proximal and distal landing zones (avoid atheroma/lipid pools).
- Determine length between these two zones.
- Measure the proximal and distal reference areas.
- Size stents to the distal luminal reference area for 1:1 stent sizing per the ULTIMATE trial (which used IVUS).**
- Pay attention to stent-specific post-dilation limits so that you may post-dilate the stent according to the proximal and distal reference areas.**