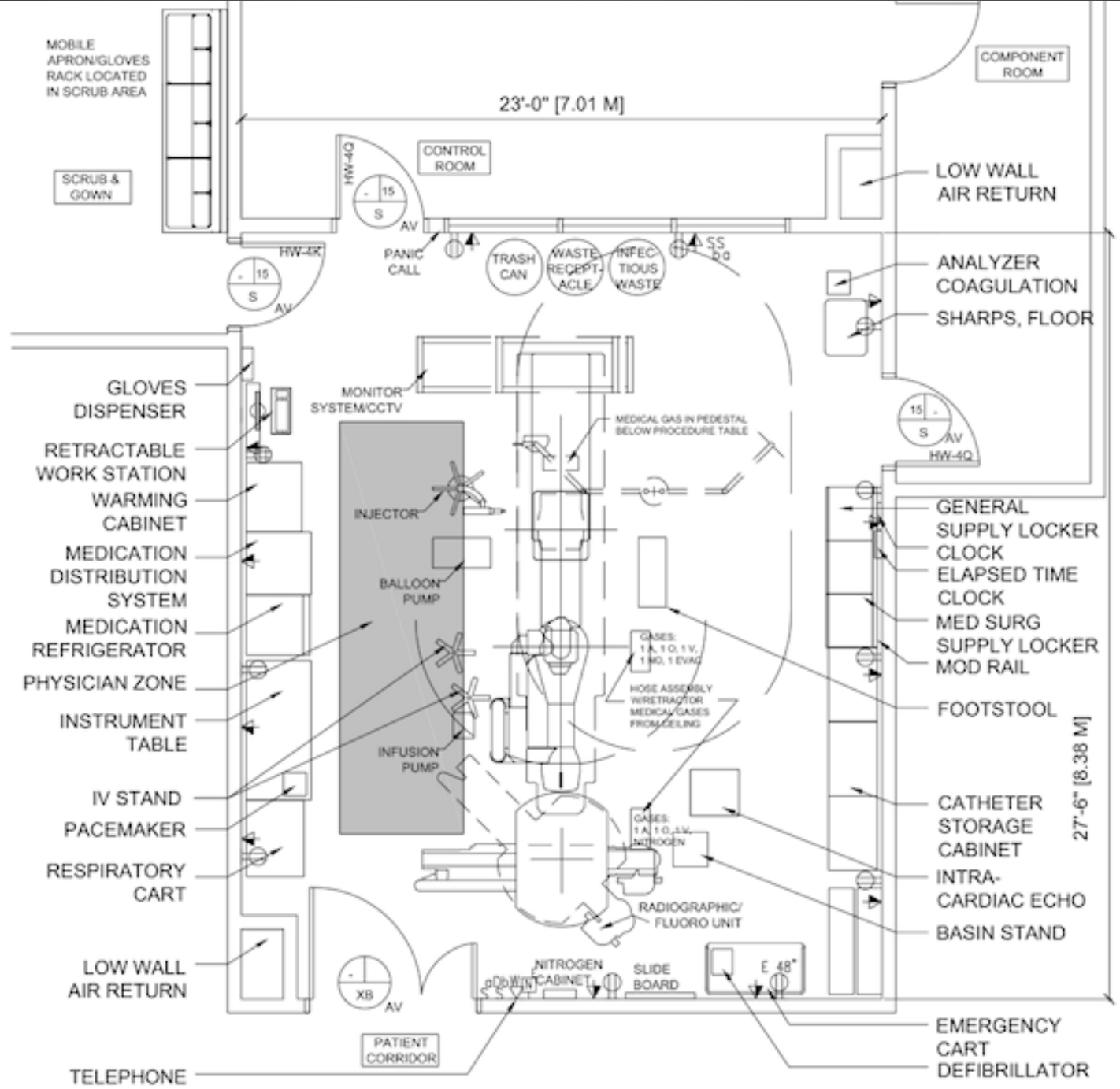


Cath Lab Room Setup and Basic Equipment (Guiding Catheters, Wires, and Balloons)

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Disclosure

- ⊕ No Conflicts Relevant to this presentation
- ⊕ Chief Medical Officer, Accreditation for Cardiovascular Excellence
- ⊕ General Disclosures
 - ⊕ Ownership Imaging Core Lab Services
 - ⊕ Stryker Neurovascular
 - ⊕ Consulting
 - ⊕ Boston Biomedical Associates
 - ⊕ Stryker Neurovascular
 - ⊕ SentreHeart
 - ⊕ Cytosorbents
 - ⊕ Arsenal Medical
 - ⊕ MircroVention
 - ⊕ Tepha
 - ⊕ Thermi
 - ⊕ Somahlution
 - ⊕ Canon
 - ⊕ Creganna
 - ⊕ Cormend
 - ⊕ Honoraria
 - ⊕ SCAI



MOBILE APRON/GLOVES RACK LOCATED IN SCRUB AREA

COMPONENT ROOM

23'-0" [7.01 M]

SCRUB & GOWN

CONTROL ROOM

LOW WALL AIR RETURN



PANIC CALL

TRASH CAN

WASTE RECEPTACLE

INFECTIOUS WASTE

SS 50

ANALYZER COAGULATION

SHARPS, FLOOR



GLOVES DISPENSER

MONITOR SYSTEM/CCTV

MEDICAL GAS IN PEDESTAL BELOW PROCEDURE TABLE



RETRACTABLE WORK STATION

INJECTOR

GENERAL SUPPLY LOCKER

WARMING CABINET

BALLOON PUMP

CLOCK

MEDICATION DISTRIBUTION SYSTEM

INFUSION PUMP

ELAPSED TIME CLOCK

MEDICATION REFRIGERATOR

GASES: 1A, 1O, 1V, 1NO, 1EVAC

MED SURG SUPPLY LOCKER MOD RAIL

PHYSICIAN ZONE

HOSE ASSEMBLY W/RETRACTOR MEDICAL GASES FROM CEILING

FOOTSTOOL

INSTRUMENT TABLE

GASES: 1A, 1O, 1V, NITROGEN

CATHETER STORAGE CABINET

IV STAND

RADIOGRAPHIC/FLUORO UNIT

INTRA-CARDIAC ECHO

PACEMAKER

BASIN STAND

RESPIRATORY CART

NITROGEN CABINET

SLIDE BOARD

EMERGENCY CART DEFIBRILLATOR

LOW WALL AIR RETURN



PATIENT CORRIDOR

TELEPHONE

27'-6" [8.38 M]

promoter
threader all launcher gaia forte
traverse intermediate nc zinger
emerge PT provia
quantum intermediate
maverick sherpa
btw flextome
euphoria guidezilla
apex-cogur
luge printer
wiggler kinetic
balance intuition
convey
mailman
choice progress
floppy thunder
star
miraclebros
extra sion
whisper
runway sport
platinum mach
advance
pilot
wiseguide
iron
rotablator
plus
mini
stingray
crossboss
conianza

trek

- ⊗ You can't always get what you want
- ⊗ But if you try sometimes well you just might find
- ⊗ You get what you need

You can't have everything

- ⊗ Most facilities have 1 or 2 major vendors
 - ⊗ Early career operators are most comfortable with what they trained on
 - ⊗ May not be what you have
 - ⊗ You have to work within the system

Basic Functions of a Guiding Catheter

- ⊗ Provide a supportive conduit for advancement of guidewires and devices
- ⊗ Serve as a vehicle for contrast injection
- ⊗ Measure blood pressure

Important Characteristics of a Guiding Catheter

- ⊗ Atraumatic tip
- ⊗ Proper preformed shape (co-axial with vessel)
 - ⊗ Access site
 - ⊗ Active vs. Passive Support
- ⊗ Torque control
- ⊗ Kink resistance
- ⊗ Radiopacity

Guide Catheter Use

- ⊗ Aspirate vigorously (atheroma or thrombus “scooped up” from the aorta)
 - ⊗ Wire/catheter interface
 - ⊗ Lots more “wire time” with radial
- ⊗ Insist on bleed back (prevent air embolus)
- ⊗ Avoid blood standing in guide (flush frequently)
- ⊗ Proximal or ostial disease

you will
have to
pry it
from
my cold
dead hands

you will



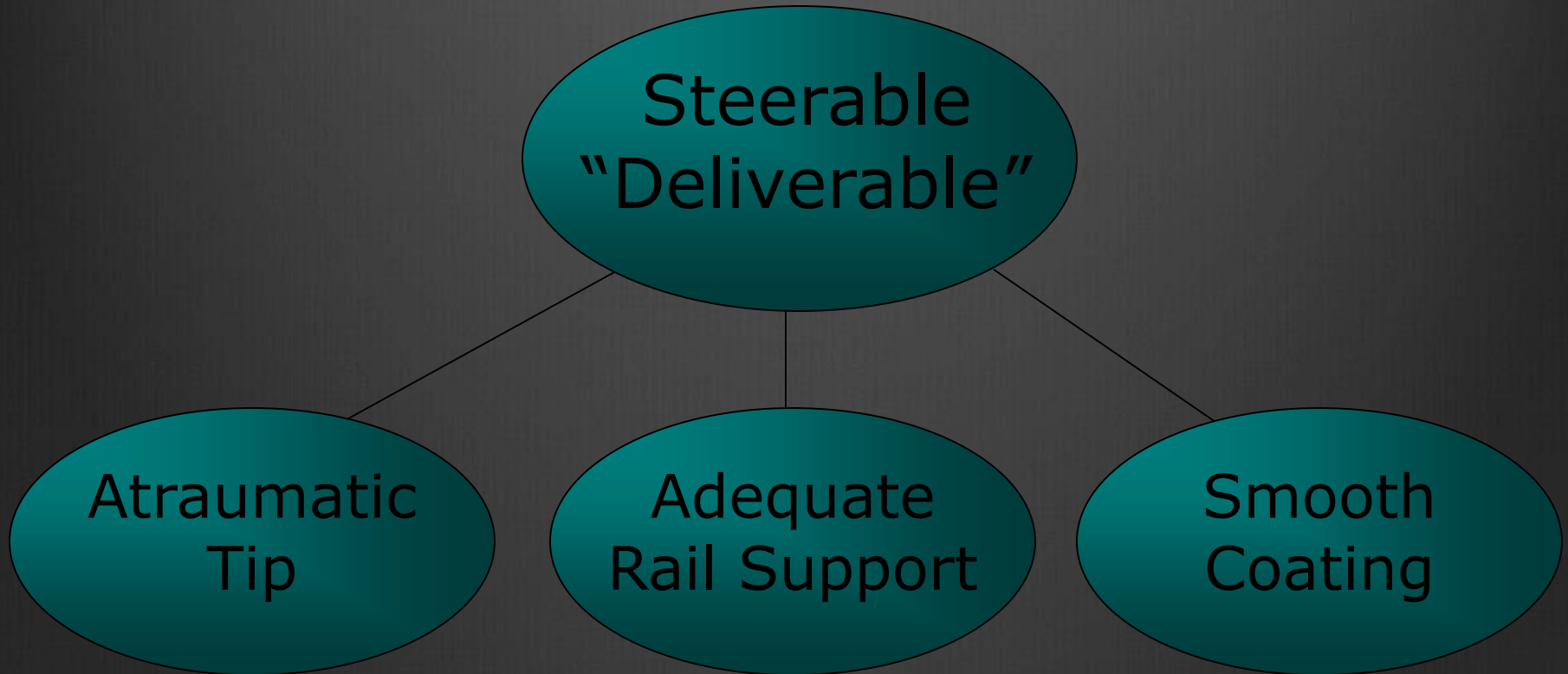
dead hands

Guidewires

Performance Characteristics

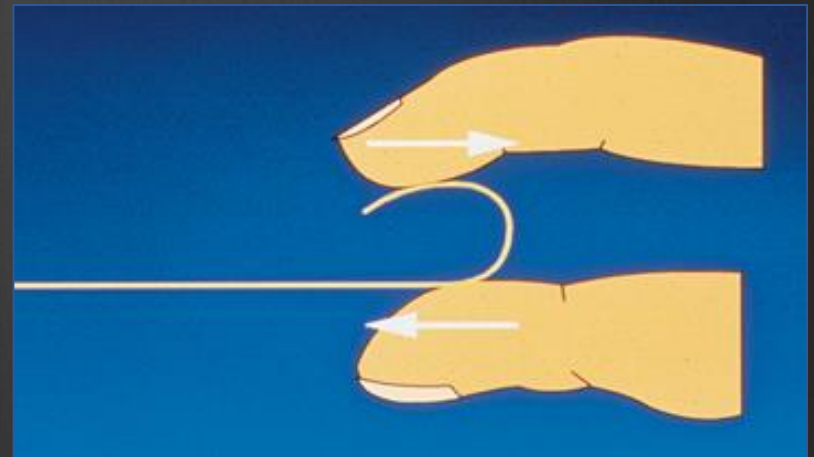
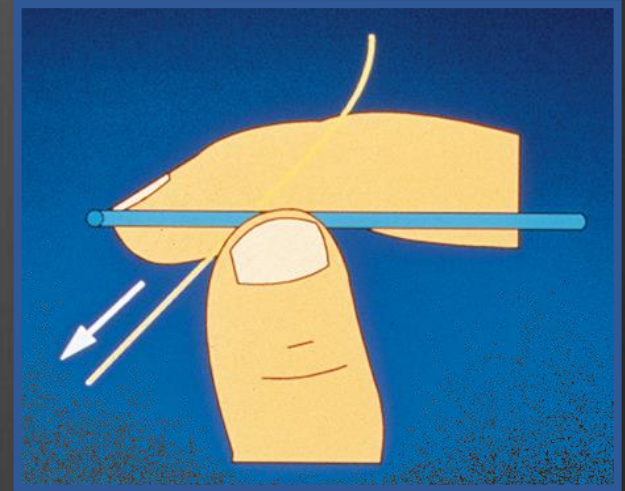
- ⊙ Flexibility
- ⊙ Support
- ⊙ Steering
- ⊙ Lubricity
- Tracking
- Prolapse Tendency
- Visibility
- Tactile Feedback

Basic Coronary Guide Wire Characteristics



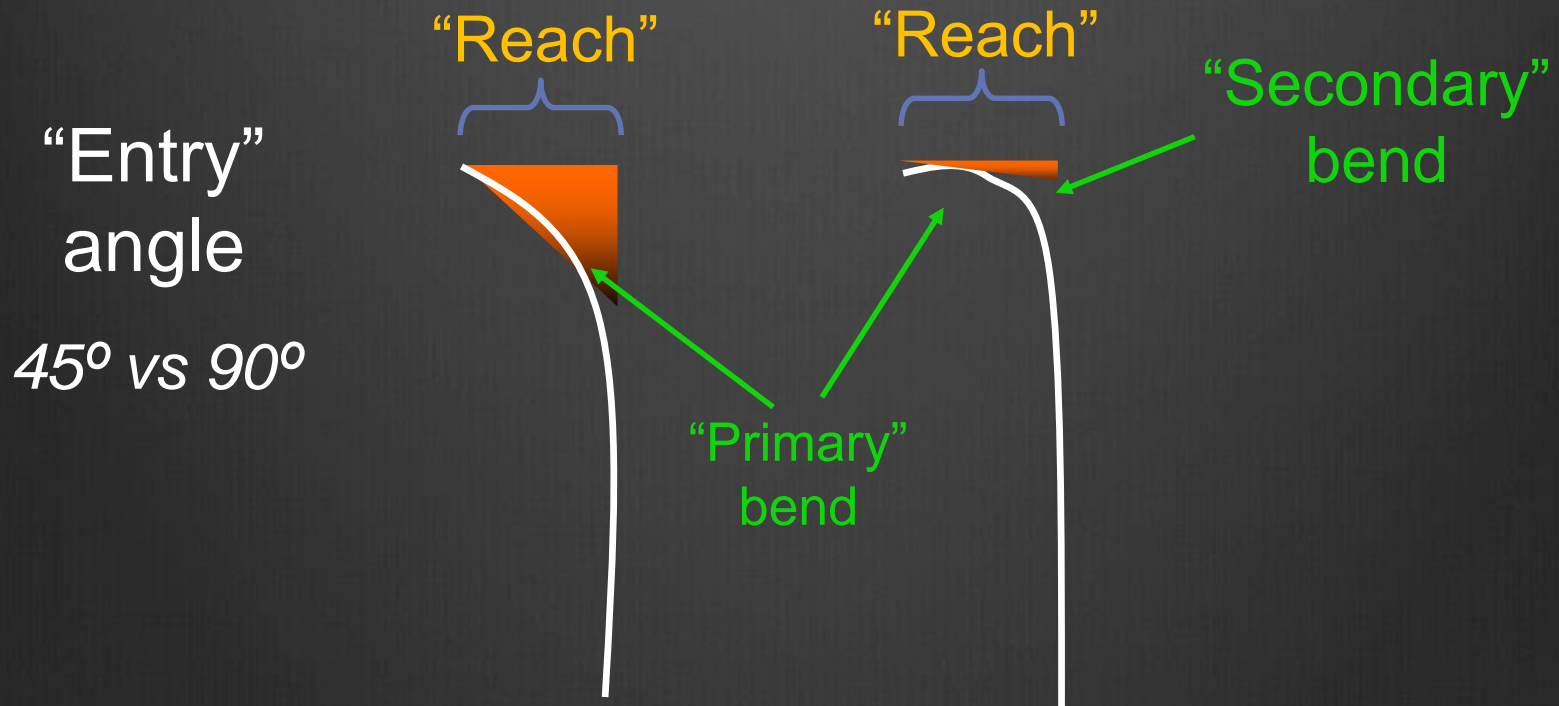
Guide Wire Tip Shaping

- Approximate vessel diameter
- “J-shaped” or “Hockey Stick” curve
- Double bend

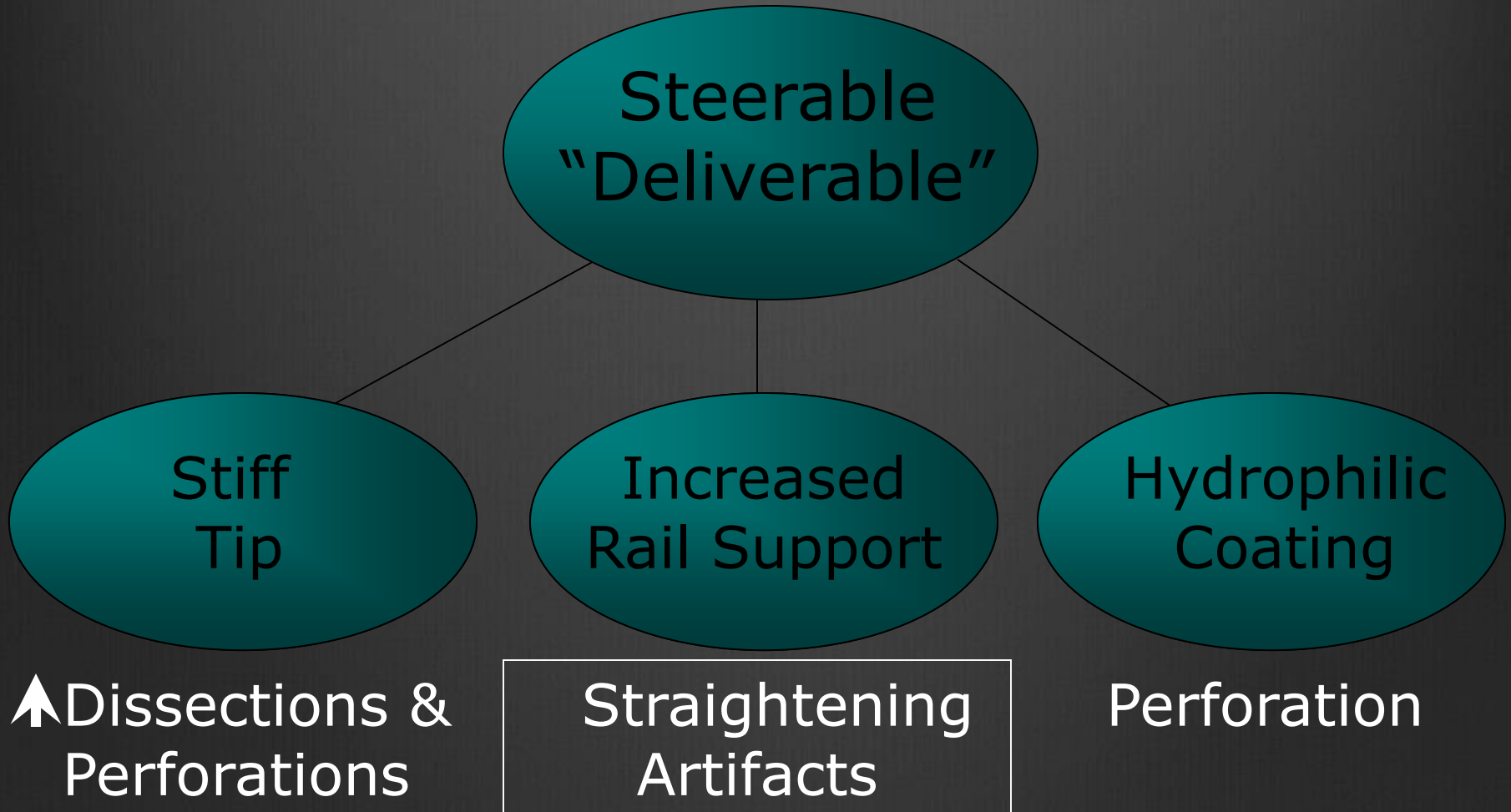


Guidewire Tip Shaping

Lesion Specific Bending



Change Coronary Guide Wire Characteristics



Special Guide Wire Problems

Problem	Solution	Compromise
Total Occlusion - Tapered	0.009" wire and/or hydrophilic coating	Less rail support with 0.009" wire, wire perforation
-Blunt	Stiff Tip	Increased Dissection and Perforation

Device Delivery Problems

Problem	Solution	Compromise
Unable to deliver a balloon or stent around a corner	Stiffer wire or buddy wire or flexible stent or better guide catheter or Guideliner	Cost; straightening artifacts; increased risk

Guidewires

- ④ Understand the relationship between wire design and performance
- ④ Become comfortable with a least one wire for each given application
- ④ Become familiar with niche wires and support/exchange wires

Balloon Angioplasty

Advantages

- Broad Applicability
- Low Cost
- Repeatable

Limitations

- Suboptimal Acute Results in Complex Anatomy
- Restenosis

Rarely “Stand Alone”

Balloon Characteristics

- ⊗ Diameter
- ⊗ Length
- ⊗ Compliance
- ⊗ Specialty

Issues in Balloon Sizing

- ⊗ Angiography most commonly used but underestimates vessel size
 - ⊗ IVUS/OCT may be more helpful
- ⊗ Balloon oversizing leads to increased dissections (Roubin et al 1988)
 - ⊗ How much of a concern is that now?
- ⊗ Balloon Compliance must be known
 - ⊗ If lesion doesn't give, consider other options

Lesion Modifications

- ⊗ Cutting balloon : 3 or 4 atherotomes ; useful in resistant lesions , recoil (aorto-ostial), ISR, to prevent balloon slippage (melon seeding)
- ⊗ AngioSculpt Scoring Balloon : 3 rectangular nitinol spiral struts may reduce dissection
- ⊗ Rotablator
- ⊗ Orbital Atherectomy

Important Basic Issues to Always Discuss Prior to the Case

- ⊗ Access site and guide catheter selection?
- ⊗ Guidewire characteristics desired?
- ⊗ Strategies to be implemented (balloon , modified balloon , BMS, DES, etc.)?
- ⊗ What complications are likely as the result of application of these basic PCI strategies ?

Brave New World





The 80/20 rule is an attempt at containing costs and limiting unnecessary variation