

# New Approaches in Cardiovascular Procedures

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# Cardiology department

- ICCU
- Intermediate care
- Non invasive institute : ECHO, Ergo, Holter, Outpatients clinic
- Research unit
- Interventional cardiology unite

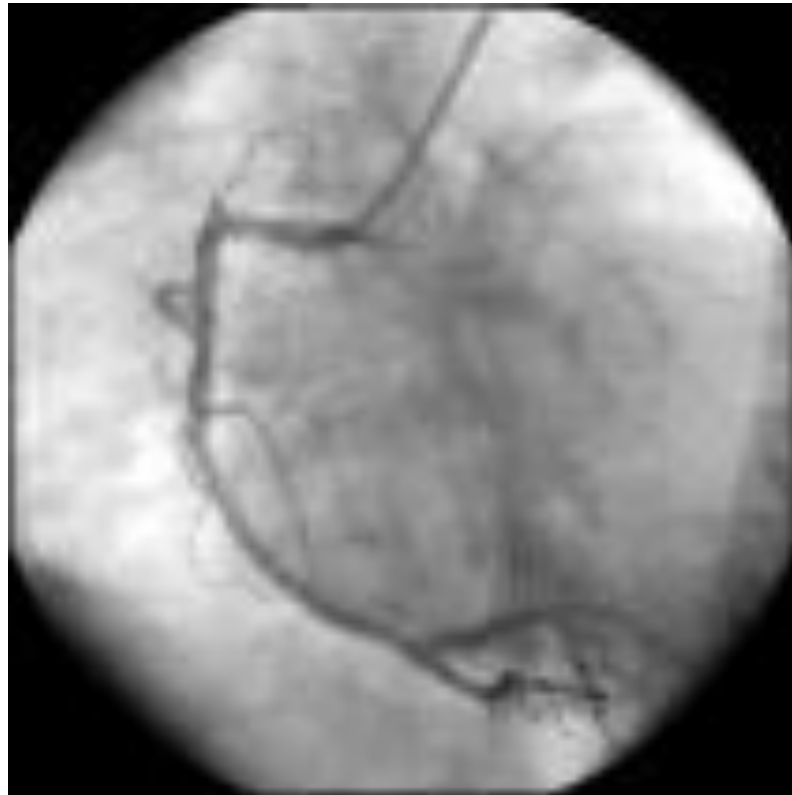
# Invasive procedures

- Diagnostic and Therapeutic in IHD
- Valvular Heart Disease
- Congenital Heart Disease
- Peripheral Vascular Disease: Supra Aortic, Renal Arteries, Lower Limbs.
- Pacemakers

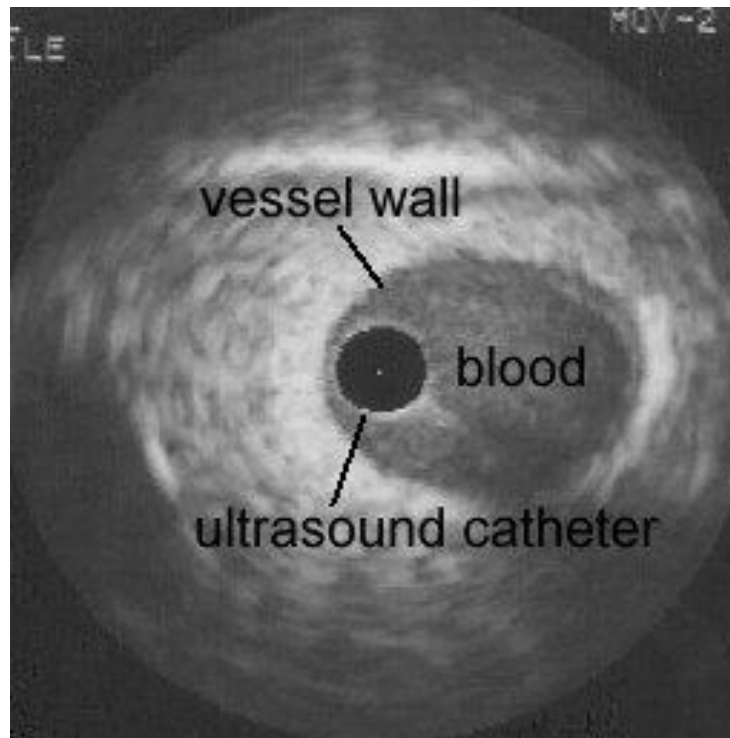
# Cardiac Invasive diagnosis

- Anatomic: ACG, I.V.U.S., Virtual Histology, Noga Map
- Physiologic: Hemodynamics, Flow Assessment (Doppler wire, Thermo dilution) Pressure wire, Thermography wire.

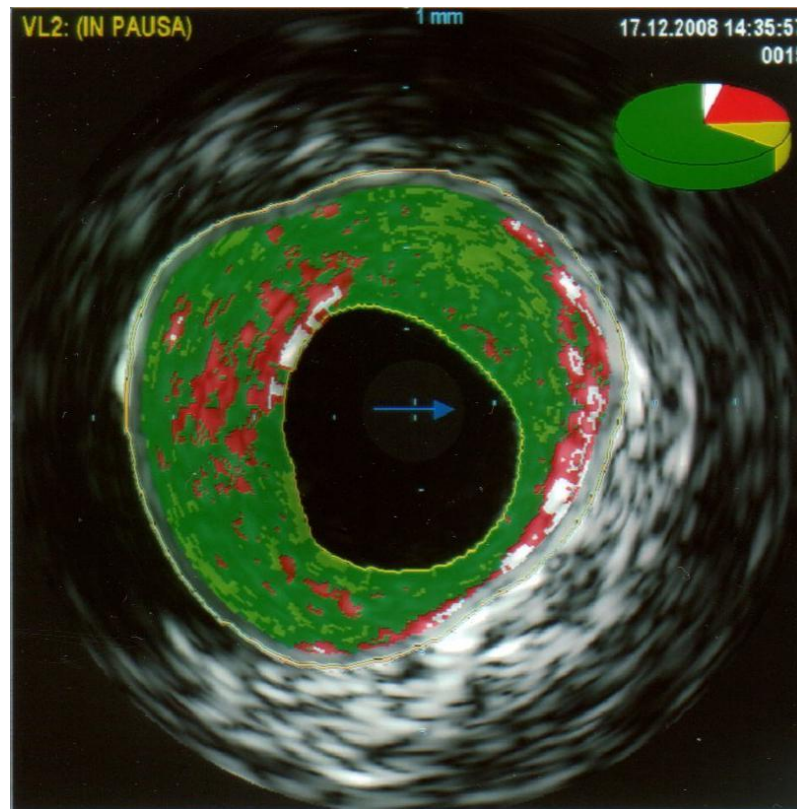
# Coronary Angiography



# I.V.U.S.



# Virtual Histology





# The Unit of Invasive Cardiovascular Procedures



# The Unit of Invasive Cardiovascular Procedures



# Intensive Cardiology Care Unit



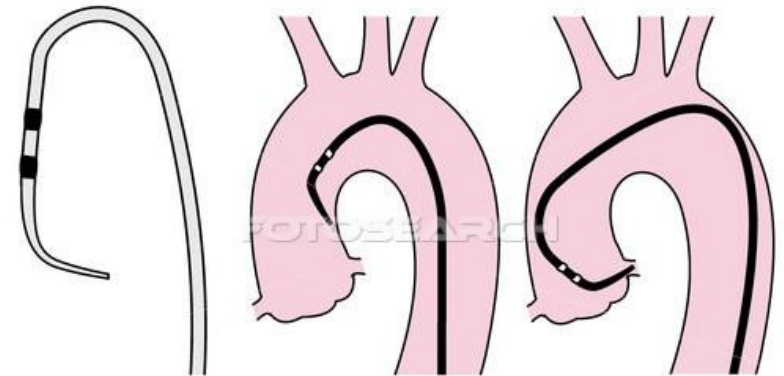
# Introducer Sheath

- Introducer sheath is like a large IV which allows controlled access to the body. Dilator offers minimal trauma to the vessel. Hemostasis valve prevents of excessive blood loss.

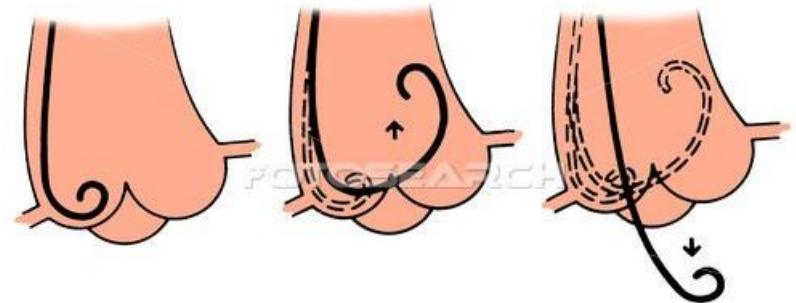


# Diagnostic Catheters

- Diagnostic catheter is a plastic tube which functions as a conduit for contrast, fluids, and pressure measurement during cardiac catheterization of coronary arteries and left ventricle



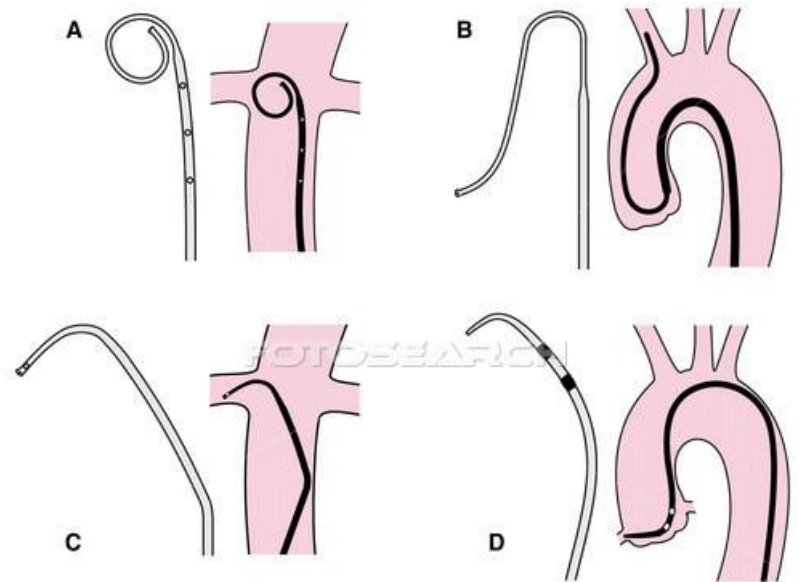
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# Guide Catheter

- Guide Catheter: a Larger Lumen Plastic Tube Which Functions As a Conduit for the Wire and Balloon for PTCA and/or Stent Implantation. Unlike a Diagnostic Catheter, It has a Blunt Tip.



# Angioplasty Guide Wire

- A stainless steel wire with a small outer diameter (.010 – .018”) that is used to negotiate the coronary vasculature to reach and cross a lesion. It is then used to guide and support the angioplasty balloon and/or stent during advancement across the lesion.



# Inflation Device

- Used to Obtain Controlled Inflation of the Balloon Catheter





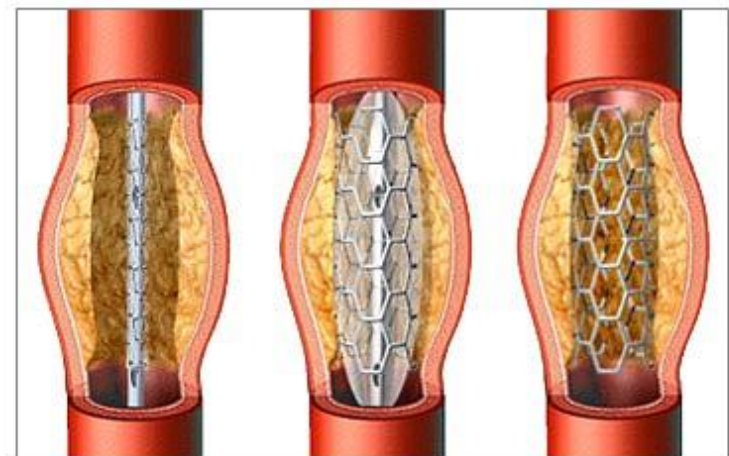
# Balloon Catheter

- A small diameter hollow tube with a second smaller tube attached to material at the base of the catheter (balloon). The balloon is inflated via the smaller tube once it is placed across the lesion.



# Coronary Stent

- a metal tube or a coil formed as a cylinder which is designed to keep the dilated artery open.



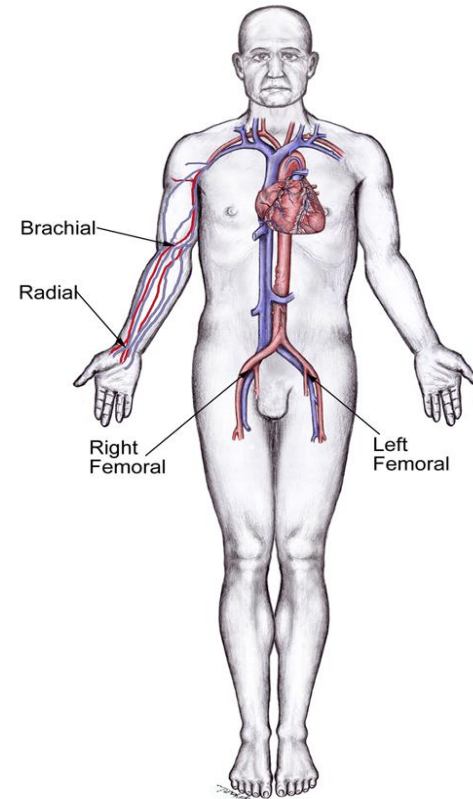
Stent  
insertion

Stent  
expansion

Stent remains in  
coronary artery

# Catherization Methods

- Femoral approach
- Brachial approach
- Radial approach



# Patient's intake

- Anamnesis
- Physical examination
- ECG
- Phonocardiography
- Rx methods
- Echo Doppler
- Nuclear cardiology
- CT, MRI

# Pharmacologic therapy

- ACE Inhibitors, ARB, Ca Channel Blockers,  $\beta$  Blockers
- Nitrates
- Cathecolamines
- Antiarrhythmics
- Statins

# Antiplatelet and Anticoagulant Therapy

- Oral:

- Antiplatelets: Aspirin, Clopidogrel.
- Anticoagulants: Warfarin

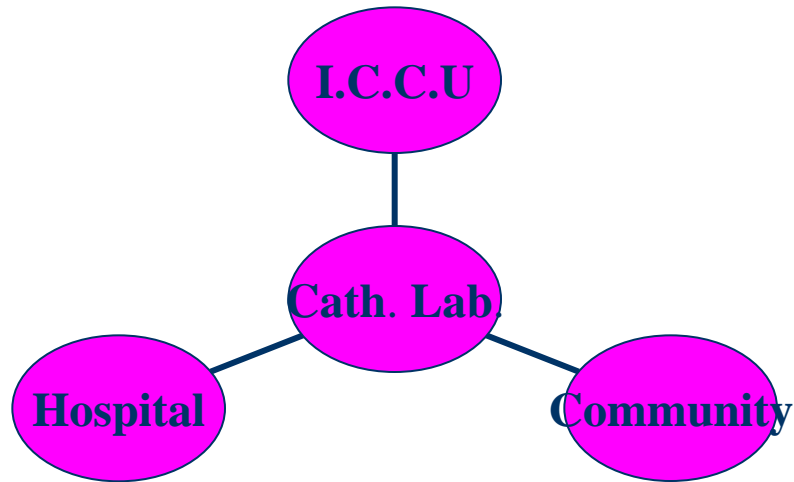
- Venous:

- Antiplatelets: G.P.IIb-3a Blockers
- Anticoagulants: Unfractionated Heparin, Low Molecular Heparin, Bivalirudine
- Fibrinolytics

# Invasive therapies

- Pacemakers
- EPS, Ablations
- PCI, PTA
- Assist devices
- Experimental therapies: Myogenesis, Angiogenesis
- Treatments via coronary sinus

# Invasive Unite Interactions





# Our Statistics

- ~ 1000 procedures
- 50%-60% - PCI
- 85%-90% - Direct Stenting (including DES)
- 30%-40% - Primary PCI
- ~ 100 Pacemakers (including ICD, Double Chambers and CRTD)



*"Nurse, get on the internet, go to SURGERY.COM, scroll down and click on the 'Are you totally lost?' icon."*

# Cardiovascular Intervention Procedures

- Double primary PCI
- Primary PCI to LAD
- Primary PCI to LAD via stent to LM
- Non protected LM
- PCI to SVG.wpl
- PCI using protection device.wpl
- Transradial approach to multivessels PCI

# Cardiovascular Intervention Procedures (continued)

- Transradial approach PCI to LIMA
- Mitral valvuloplasty (MVP)
- Double protected PTA technique to Left Subclavian Artery
- Double protected PTA to Left Renal Artery
- PTA to SFA

# Concussion



# Double primary PCI

- RC1