

Echocardiogram



Cardiac Imaging: “Echo”

Blood moving away
From transducer:
Blue

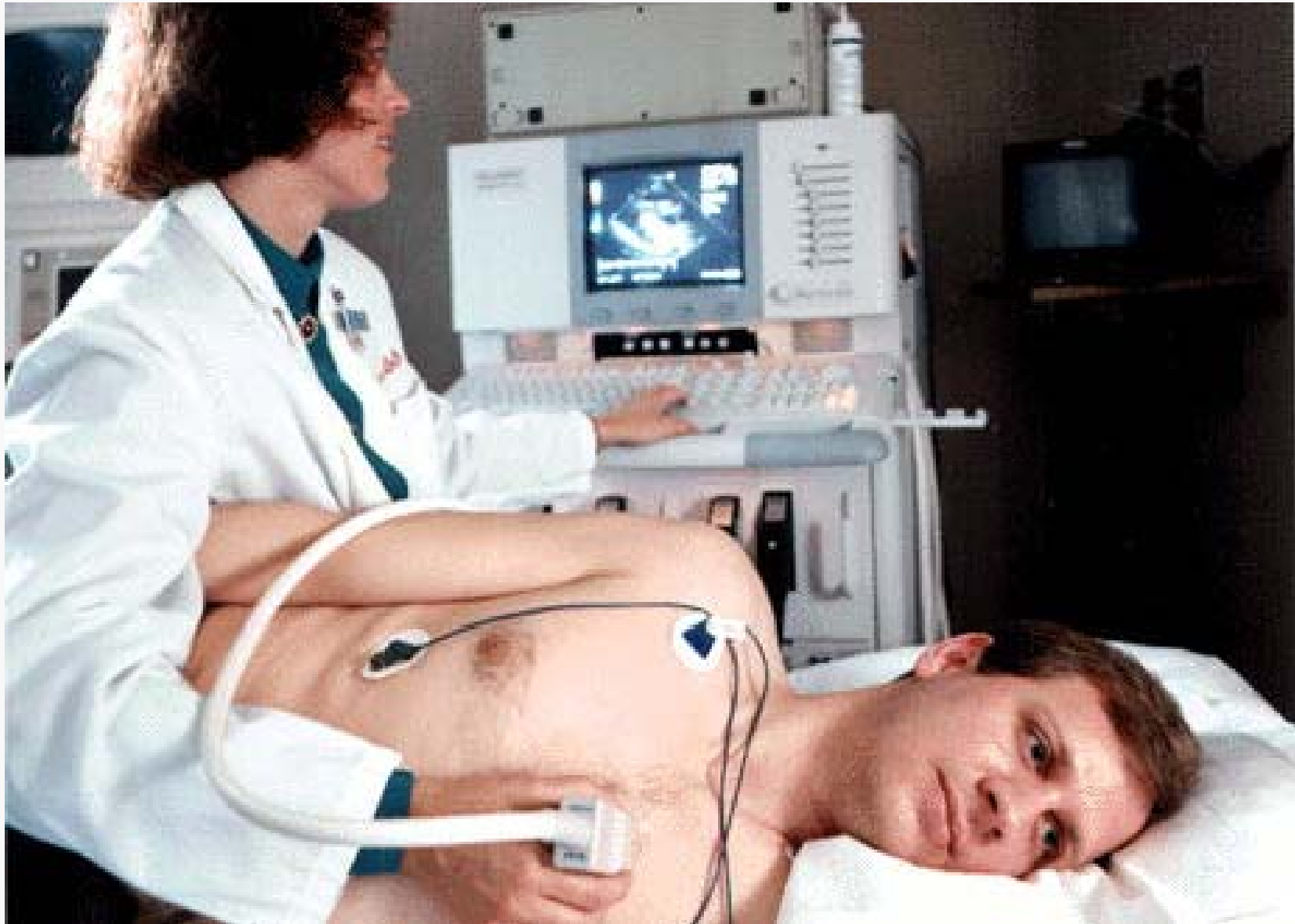
Blood moving toward
Transducer:
Red / Orange

Turbulent blood flow:
Green

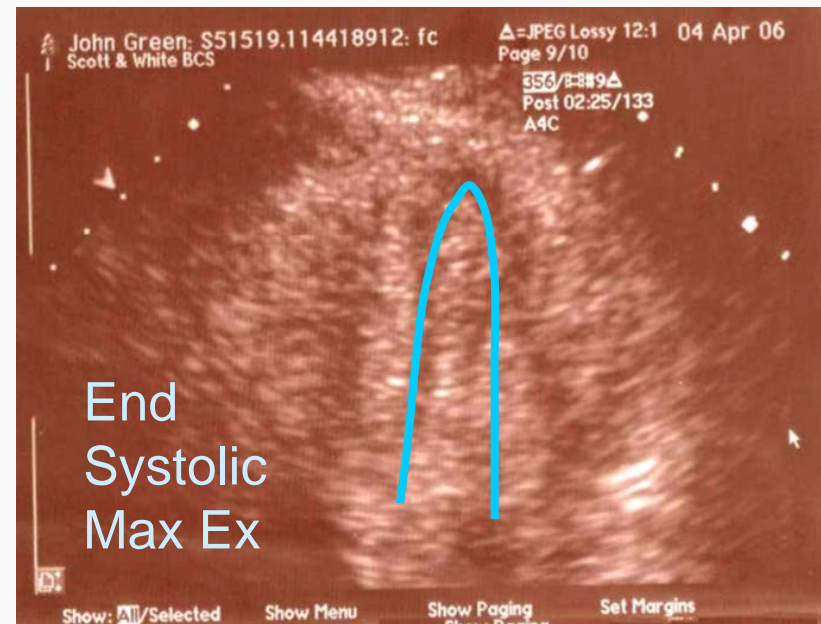
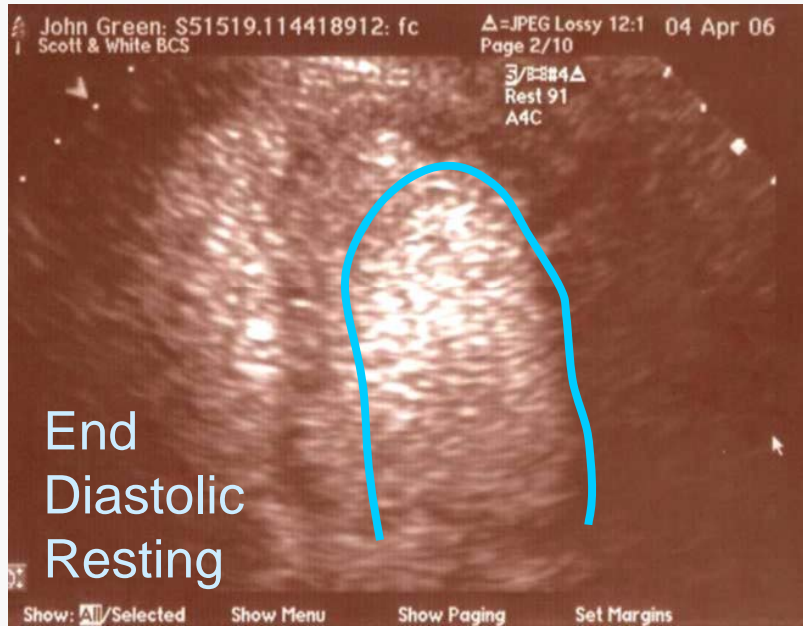
Echocardiogram uses
ultrasound reflection and
absorption to create chamber
images and doppler
technology to determine
rate and direction of
blood flow

Transducer

Echocardiogram



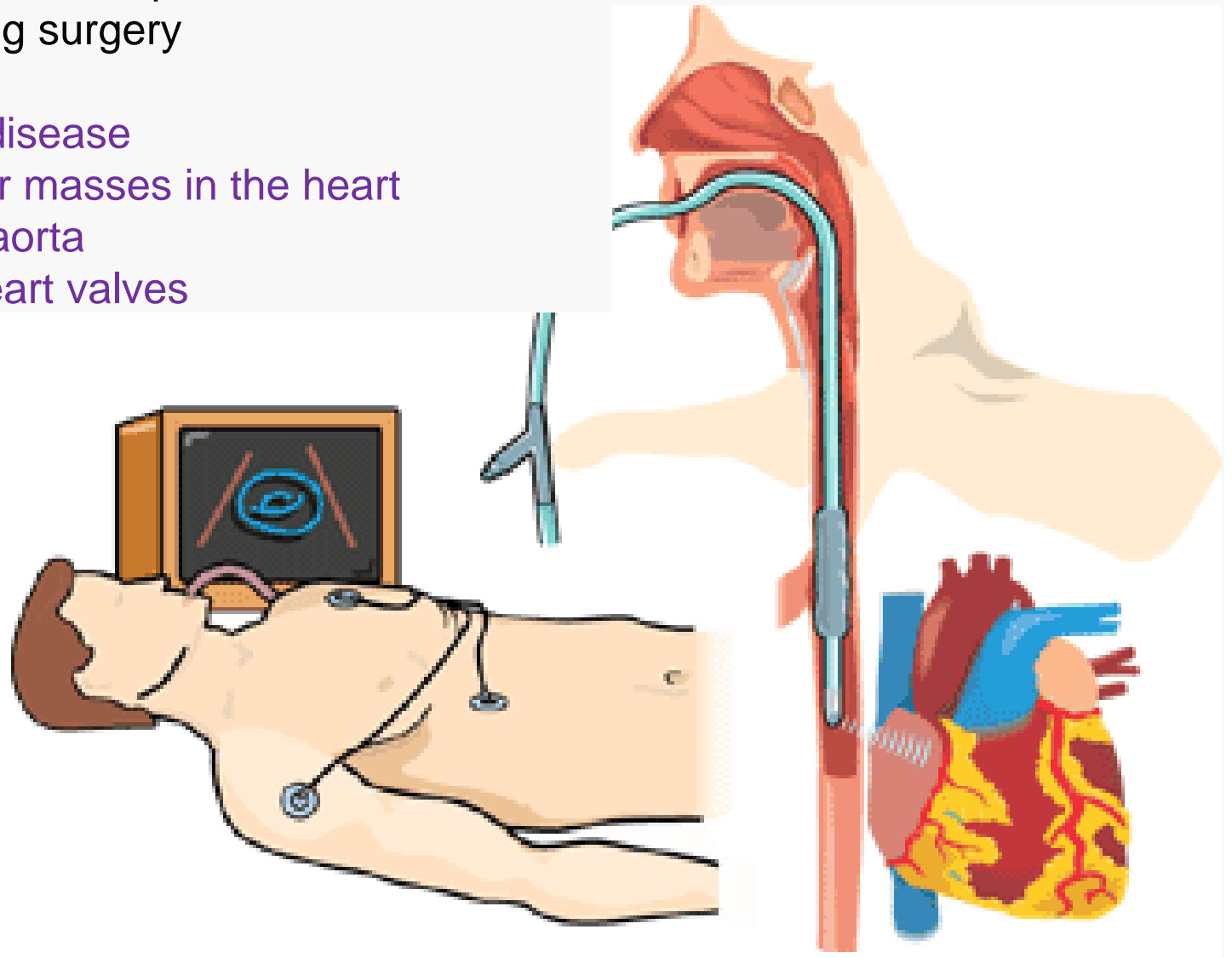
Stress Echocardiogram



Transesophageal Echocardiography

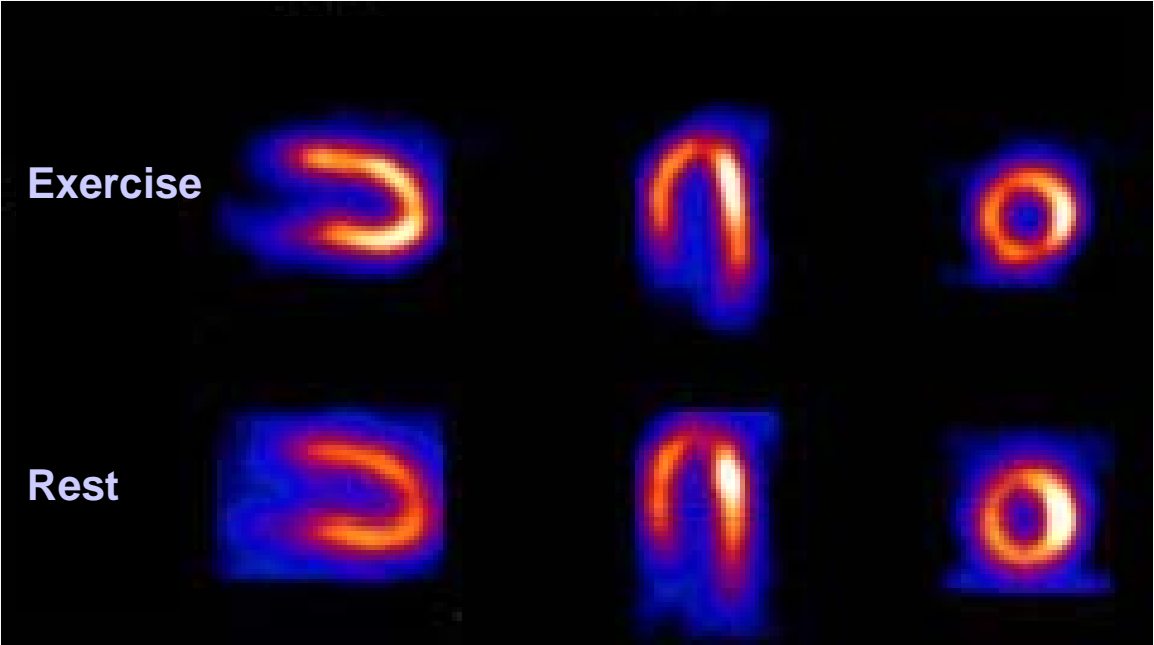
Advantages of TEE

- Lung air does not attenuate the sound beam
- Works better with COPD patients
- May be use during surgery
- Better visualizes:
 - Mitral valve disease
 - Clots or other masses in the heart
 - Tears in the aorta
 - Prosthetic heart valves

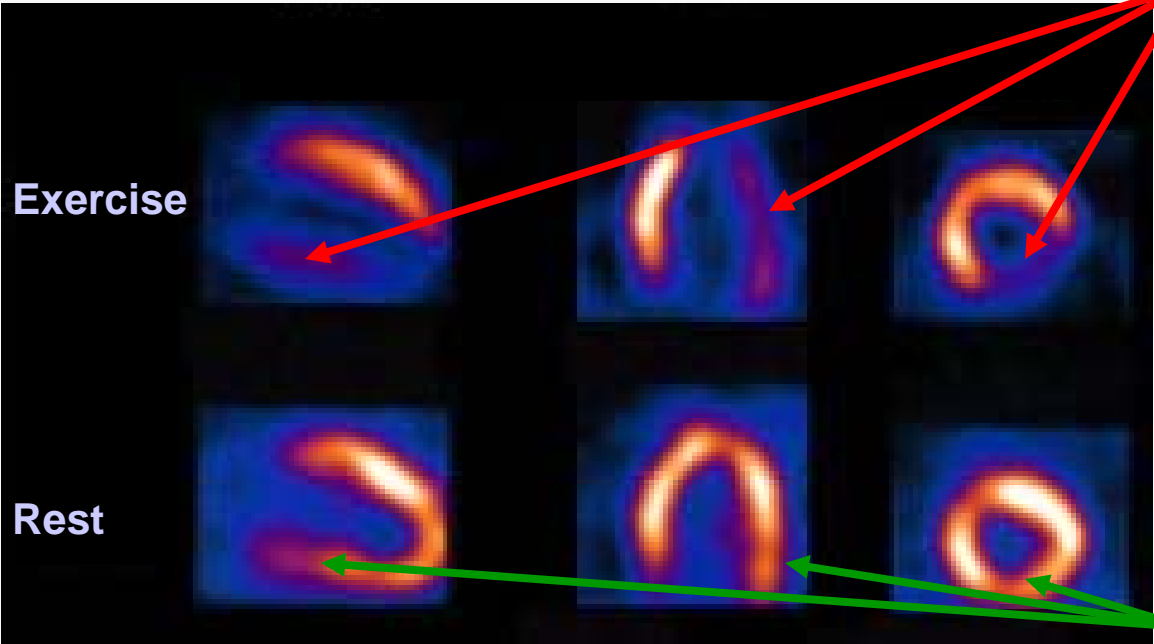


Nuclear Stress Test Images

Normal Test



Abnormal Test



Ischemic Areas

Re-perfused after rest (no permanent damage from an MI)



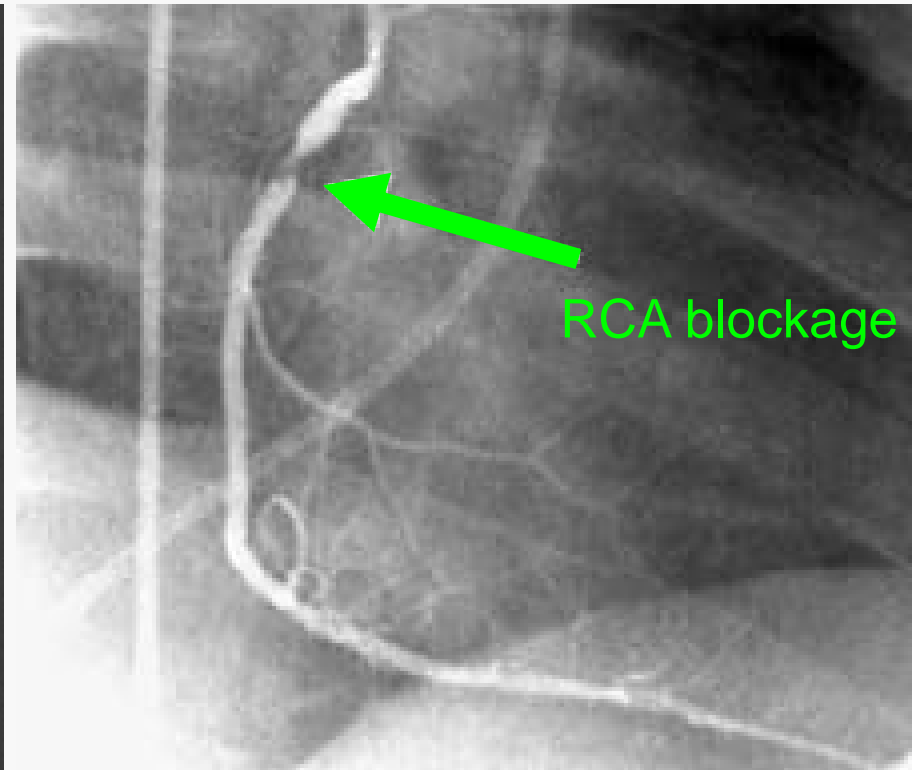
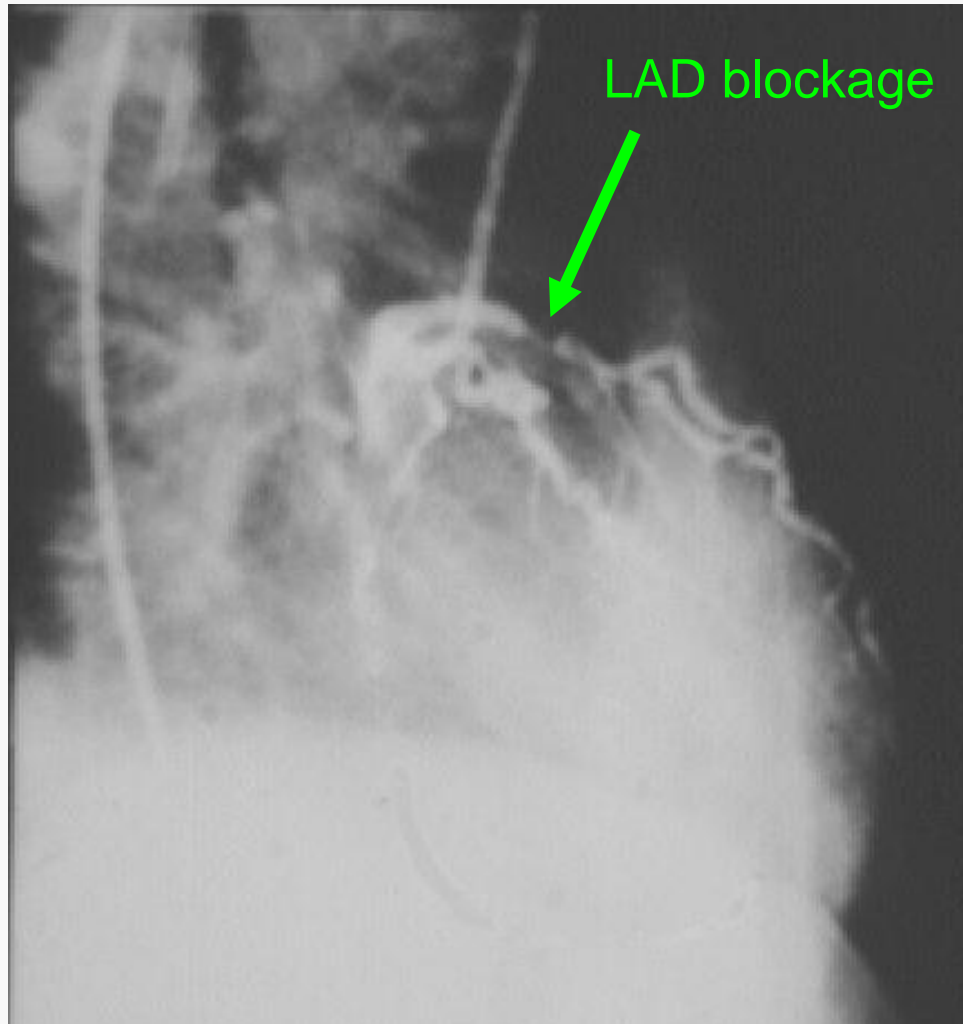
Cardiac Catheterization Lab As Viewed Through The Control Room

Need for emergency
CABG during PTCA:

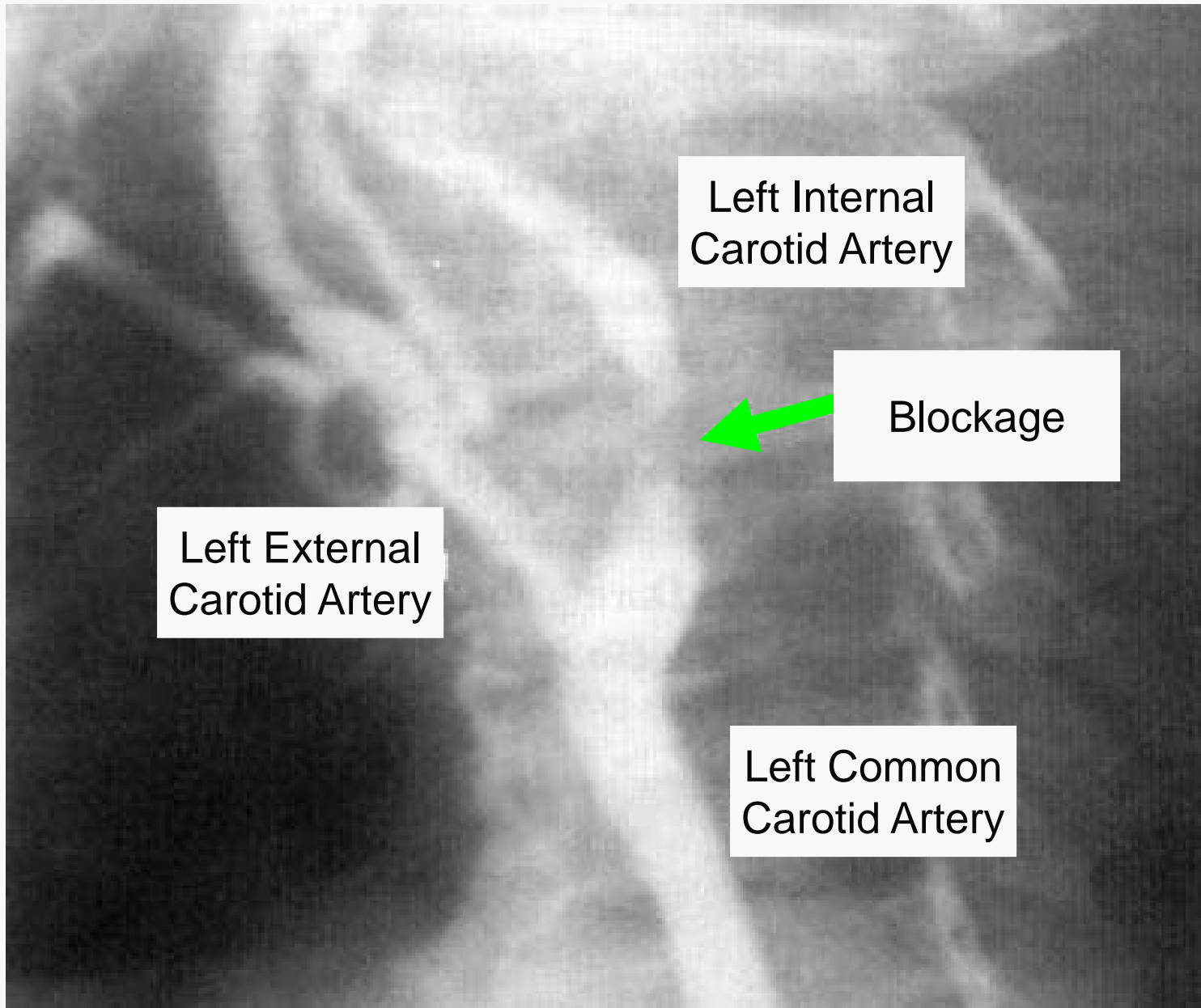
1992: 1.5%

2000: .014%

Cath Images

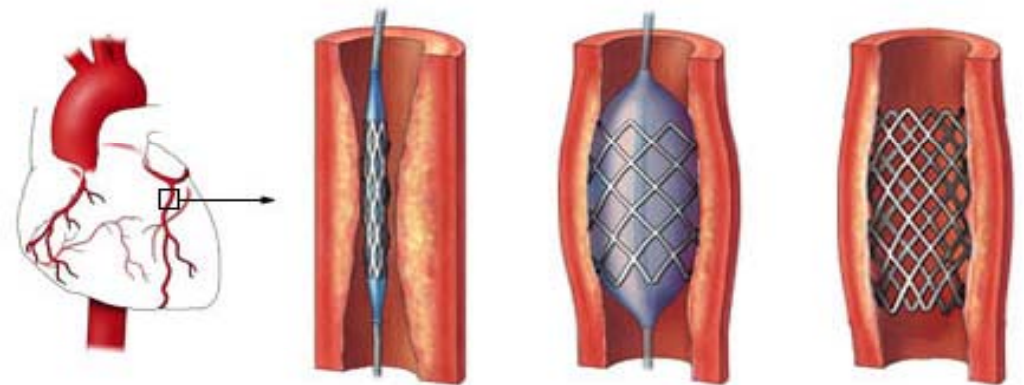


Cath Images



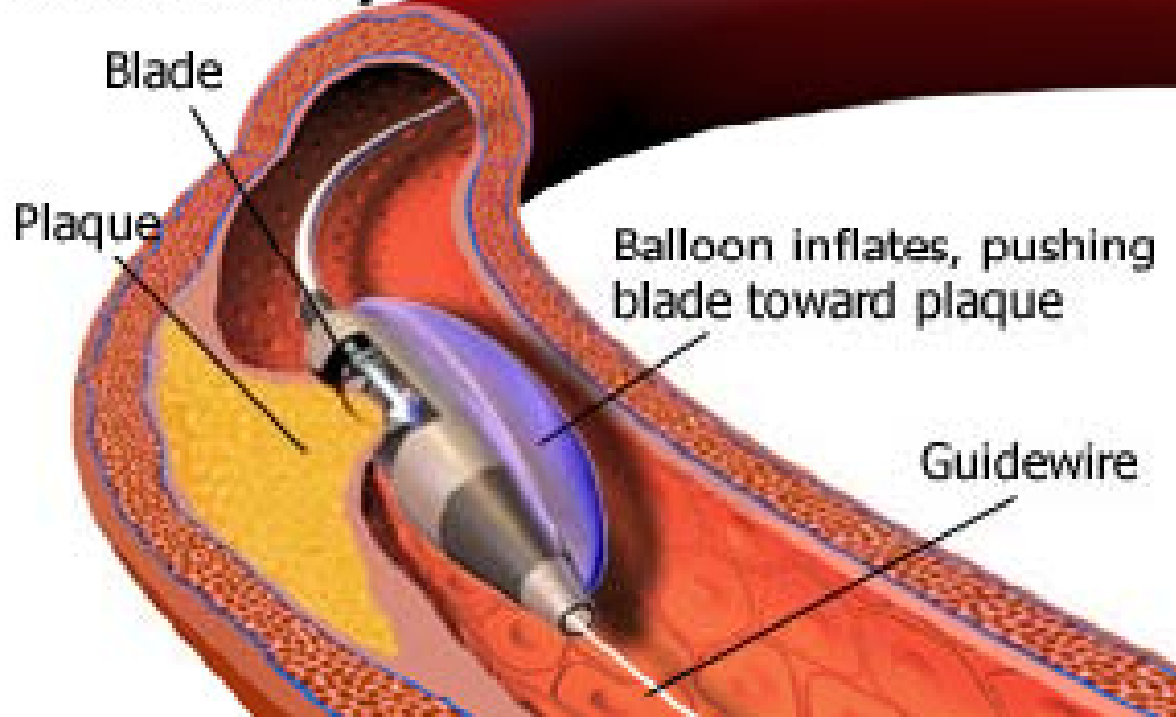


Coronary Stents



Blade Atherectomy

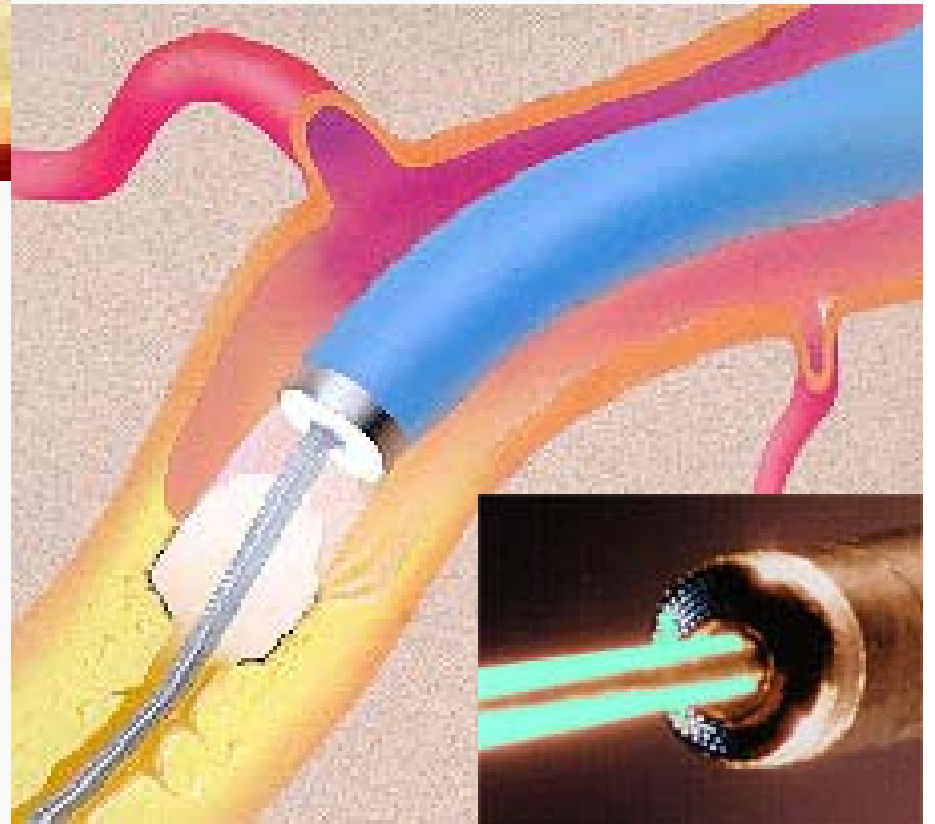
Directional Atherectomy





← Rotary Atherectomy

Laser Atherectomy →

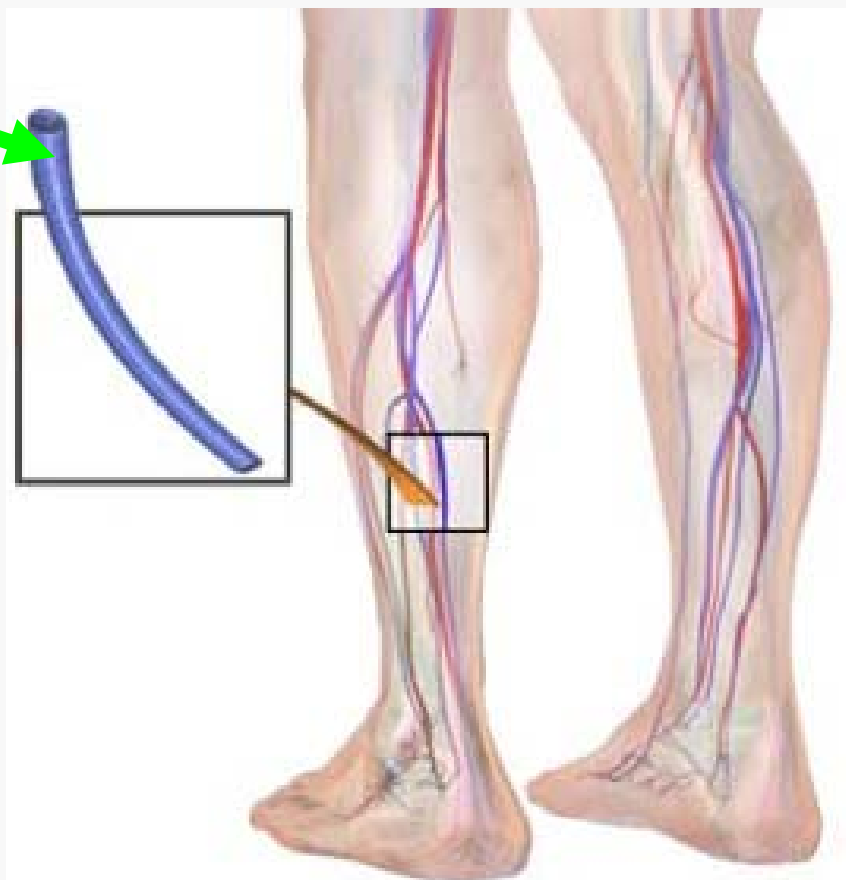
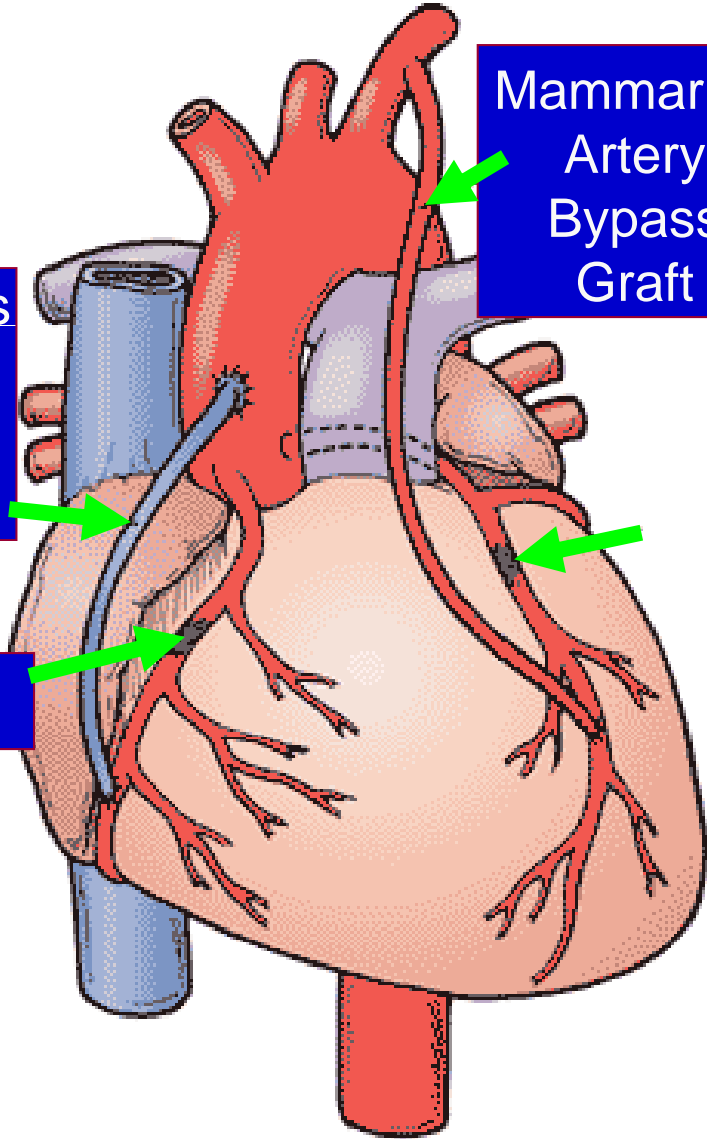


Saphenous Vein harvested from leg

Mammarian Artery Bypass Graft

Saphenous Vein Bypass Graft

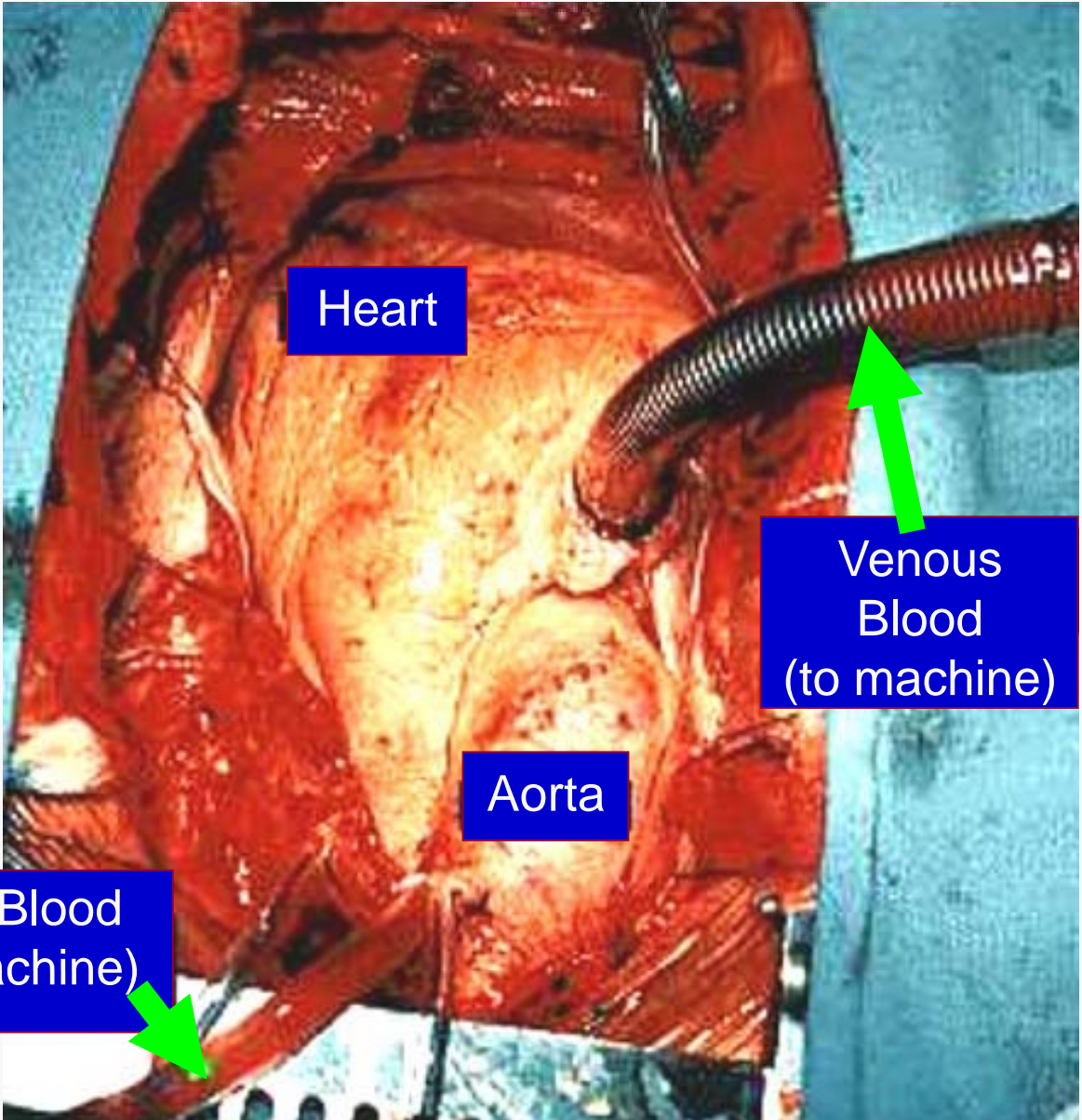
Blockage



Modern Heart – Lung Machine



First Heart – Lung Machine: developed in 1953 and used in the surgical closure an atrial defect in an 18 year old girl



Arterial Blood (from machine)

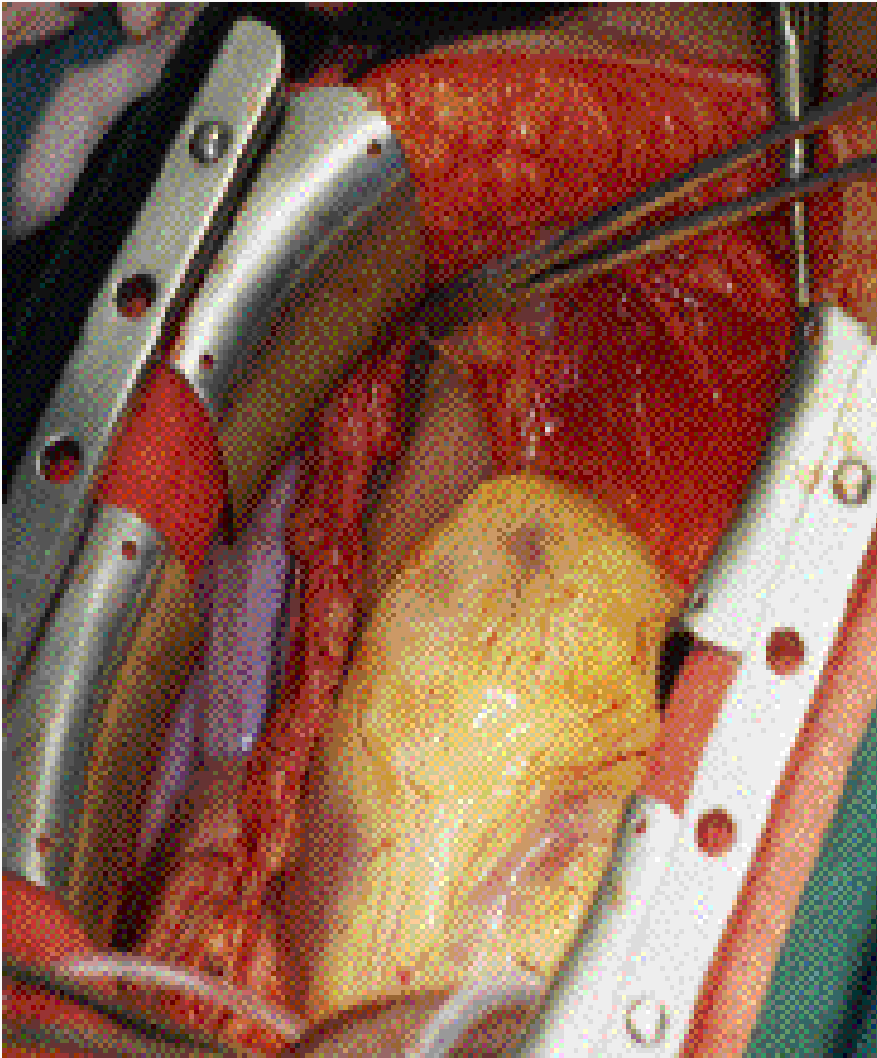
Venous Blood (to machine)

Aorta

Heart

CABG Surgery

Rib Spreader Reveals Heart



Graft anastomosed (sutured) to CA

