

Interventional Catheterization:
Adult Congenital Heart Disease
State of the Art: 2006

Robert J. Sommer, MD

Cardiovascular Research Foundation
Columbia University Medical Center



Introduction

- ✓ **Between 2006 and 2010, the number of adult patients with congenital heart disease will exceed the number of children with these typically “pediatric” cardiac issues**

Introduction

✓ How ready are we?

Introduction

✓ Great Britain / Canada:

- Government sponsored medical care
- Has directed patients to “centers of excellence” for decades
- Economy of scale
- Centralization of experience and data collection

Introduction

✓ United States:

- Most rapidly growing Adult CHD population on earth
- Virtually all care delivered locally
- Few centers with large experience
- Few centers with the necessary experts to create a “center of excellence”
- Little or no collaboration on data collection (for medical, surgical or catheter based interventions)



Interventional Catheterization for CHD: 2006

✓ **What are we doing?**

Interventional Catheterization for CHD: 2006

- ✓ Closure of atrial shunts
- ✓ Closure of ventricular shunts
- ✓ Closure of extracardiac shunts
- ✓ Valvuloplasty
- ✓ Angioplasty for congenital obstructions

Interventional Catheterization for CHD: 2006

✓ Closure of Atrial Shunts:

*Atrial Septal Defect
Patent Foramen Ovale*

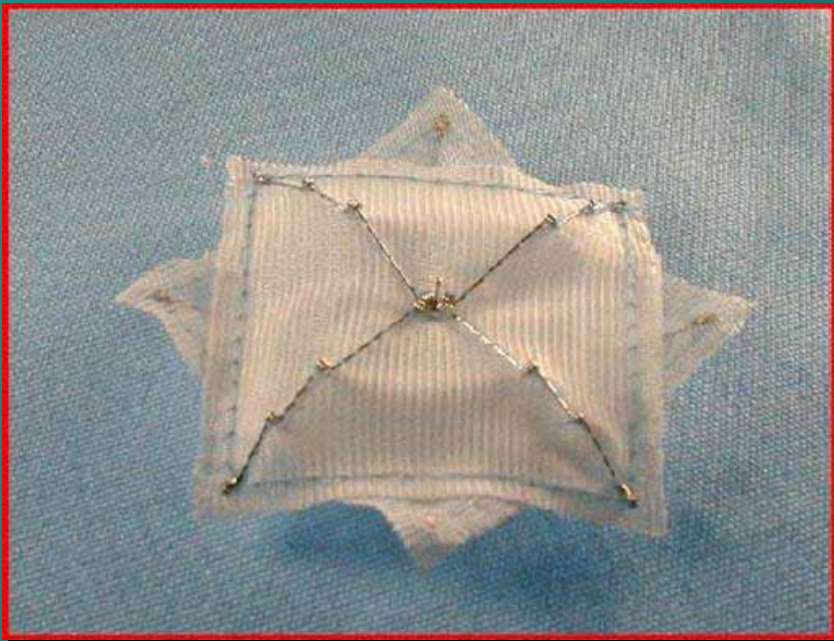
ASD Closure Device



Amplatzer Septal Occluder



PFO Closure Devices



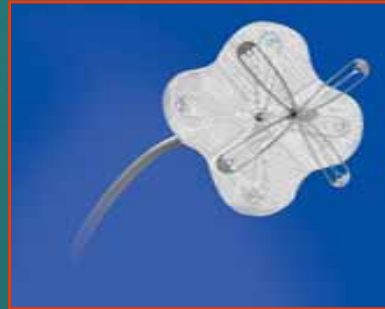
CardioSEAL Device



Amplatzer PFO Occluder



Closure Devices 2006



- ✓ Other Radiofrequency Devices
- ✓ Suture Based Technology
- ✓ Glue Technology



Devices for Defects of Atrial Septum

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CLINICAL RESEARCH

Percutaneous Closure of ASO

Cardiac Perforation After Device Closure of Atrial Septal Defects With the Amplatzer Septal Occluder

Abhay Divekar, MBBS,* Tidimogo Gaamangwe, MSc, PENG,‡ Nasir Shaikh, MBBS,†
Michael Raabe, MD,§ John Ducas, MD†

Manitoba, Canada

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EXPEDITED REVIEW

Incidence and Clinical Course of Thrombus Formation on Atrial Septal Defect and Patient Foramen Ovale Closure Devices in 1,000 Consecutive Patients

Ulrike Krumdorf, MD, Stefan Ostermayer, MD, Kai Billinger, MD, Thomas Trepels, MD,
Elisabeth Zadan, MD, Kathrin Horvath, MD, Horst Sievert, MD, PhD

Frankfurt, Germany



Interventional Catheterization for CHD: 2006

✓ Closure of Ventricular Shunts:

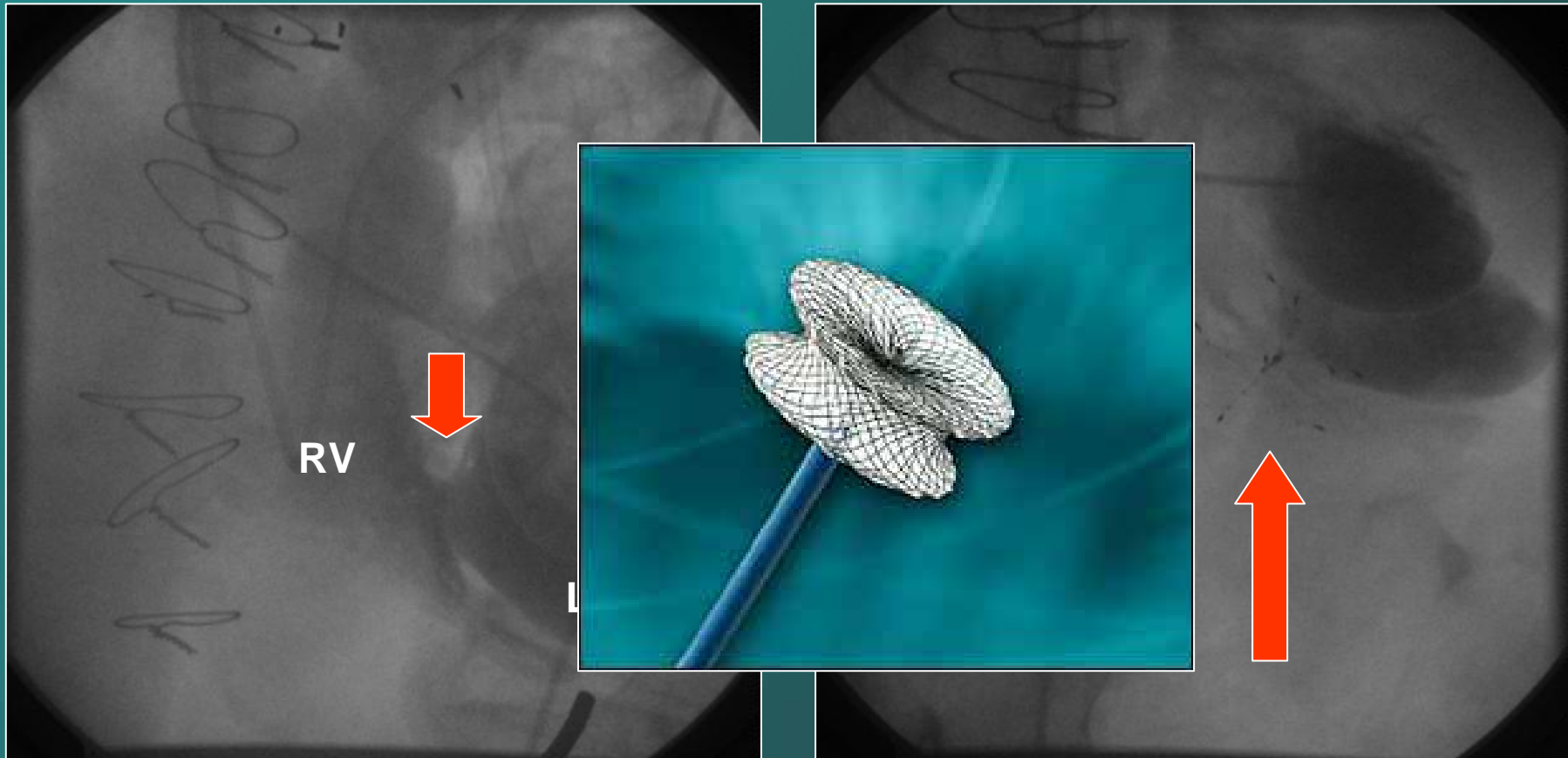
Congenital Muscular VSD

Post-MI Muscular VSD

Membranous VSD

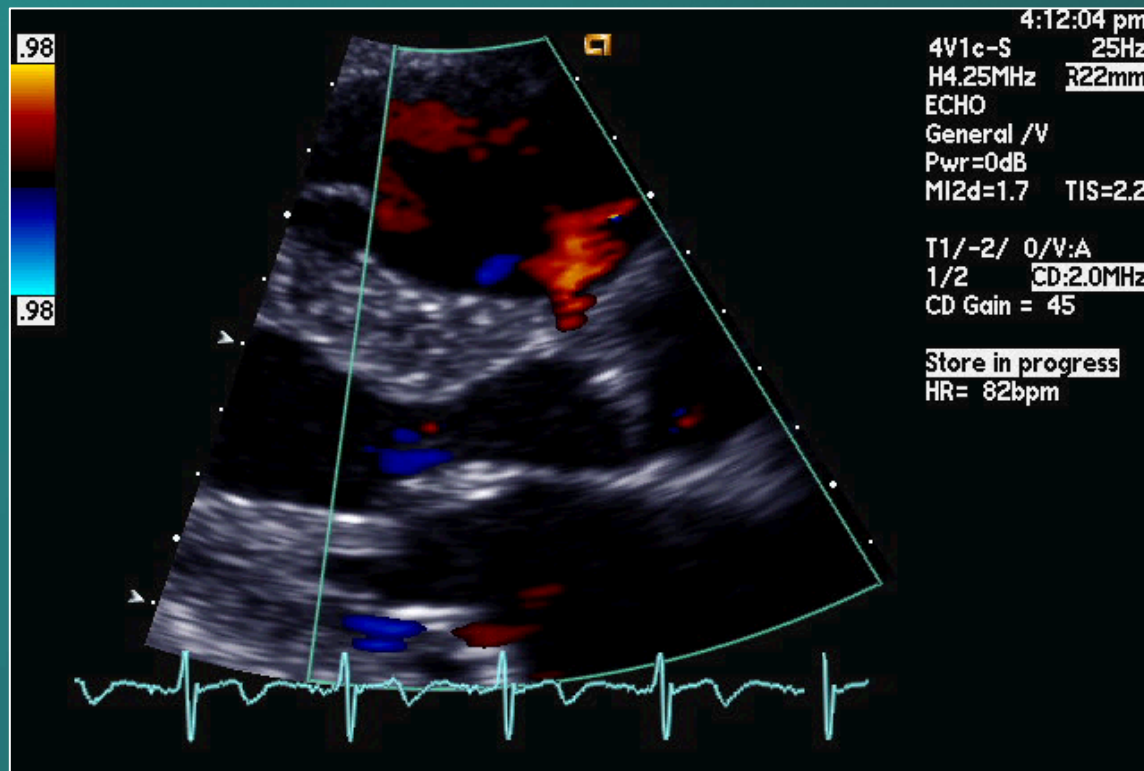


Ventricular Septal Defect



Ventricular Septal Defect

✓ Membranous Ventricular Septal Defect

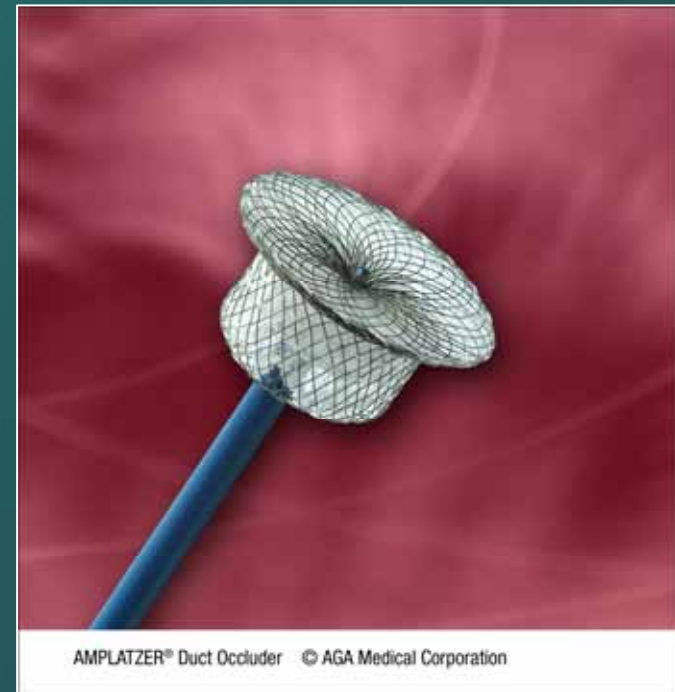
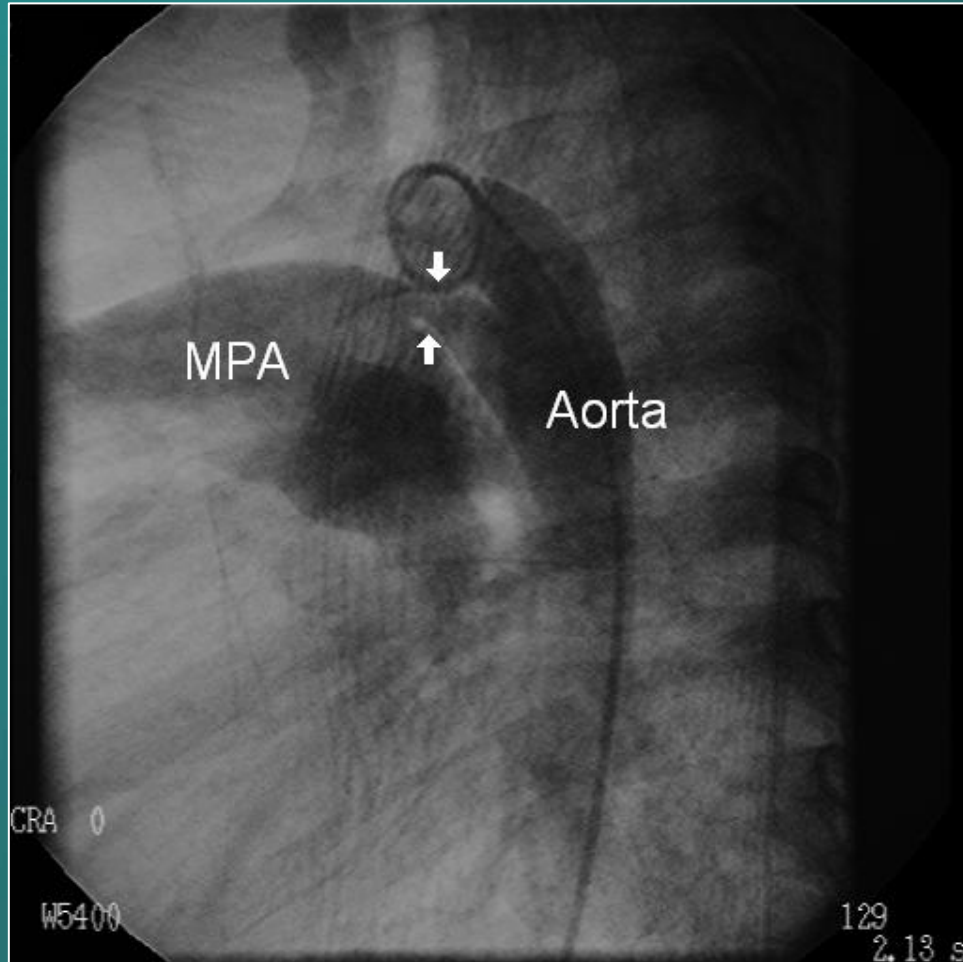


Interventional Catheterization for CHD: 2006

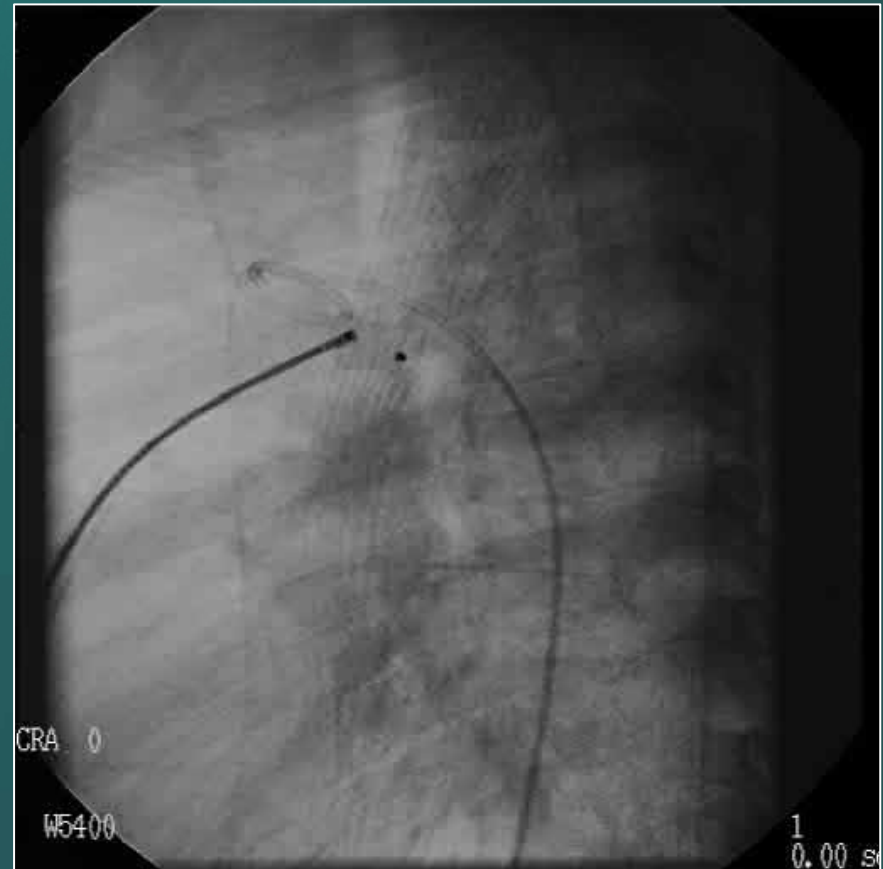
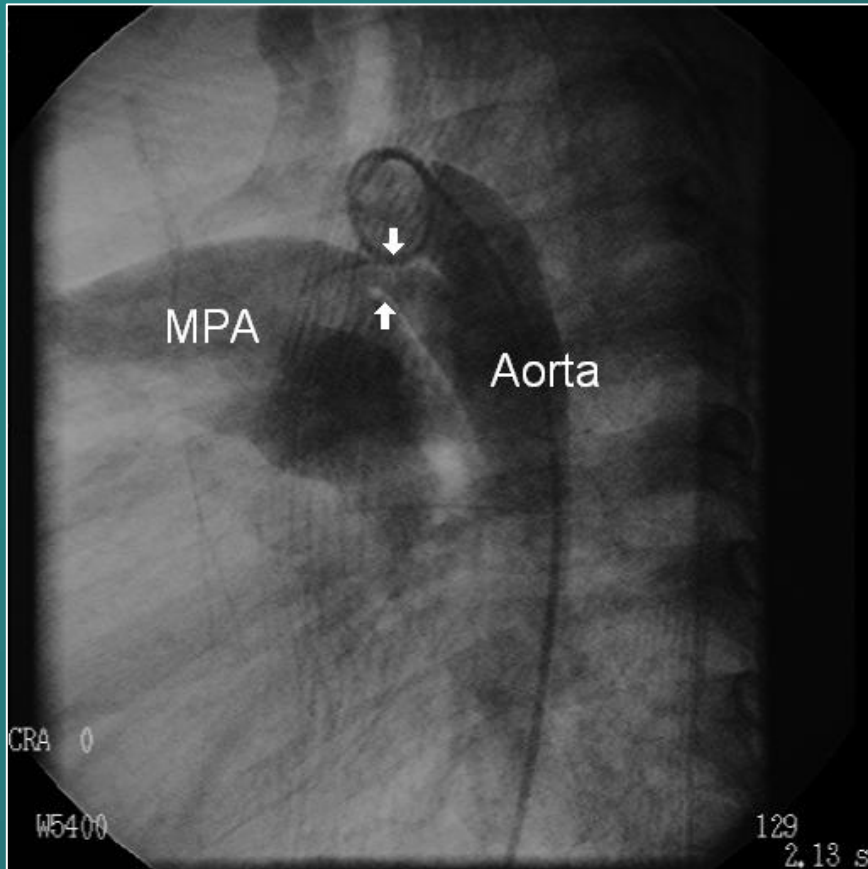
✓ Closure of Extracardiac Shunts:

Patent Ductus Arteriosus
Pulmonary AV Malformation
Coronary AV Fistula

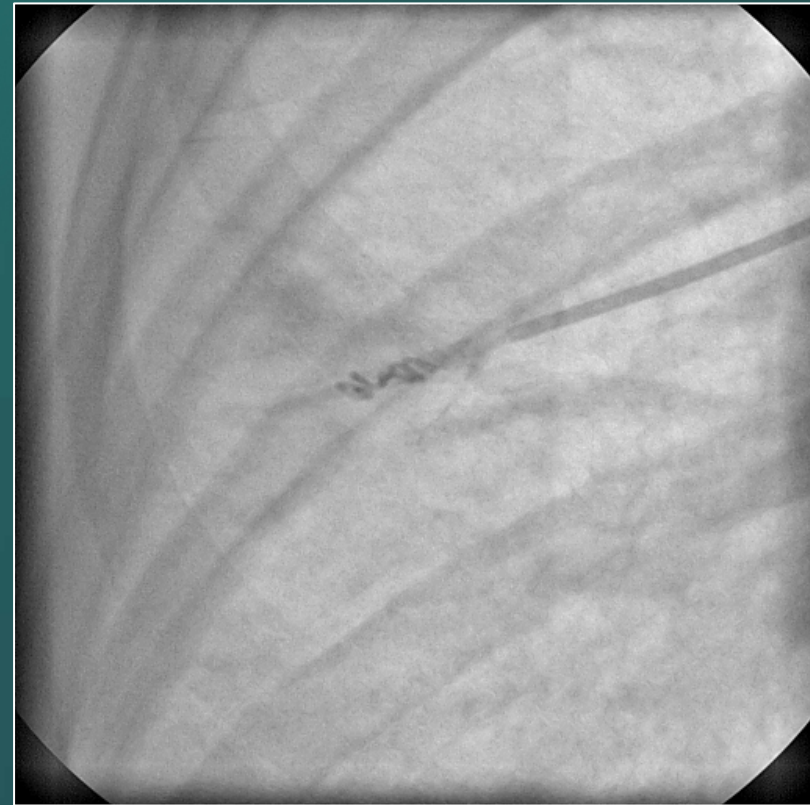
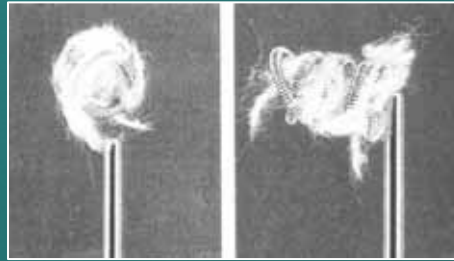
Patent Ductus Arteriosus



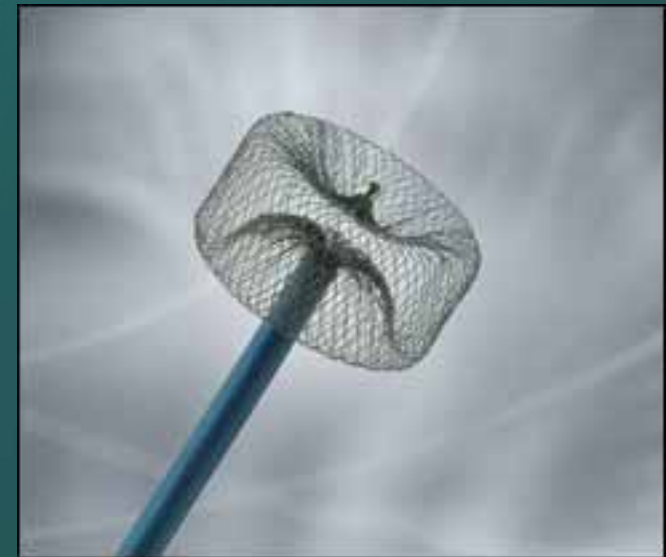
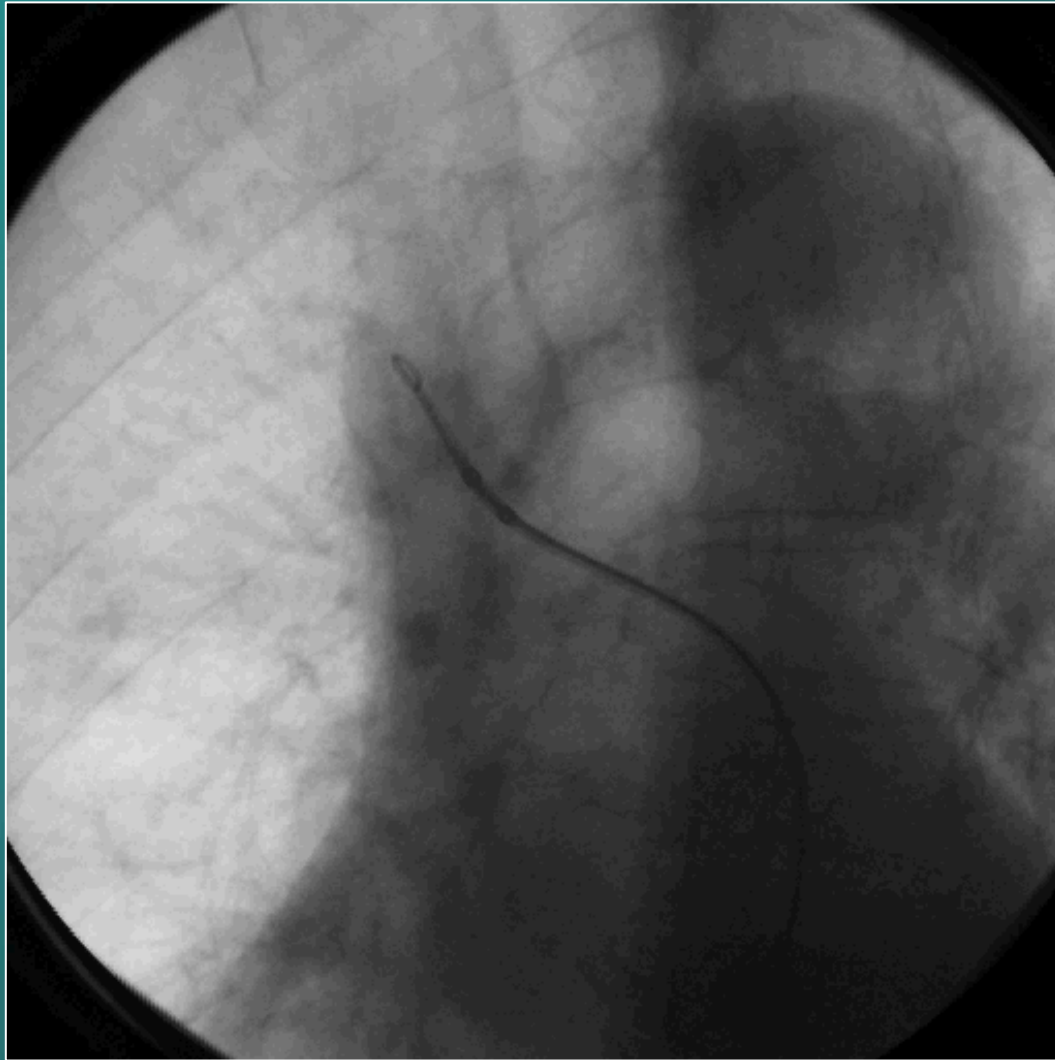
Patent Ductus Arteriosus



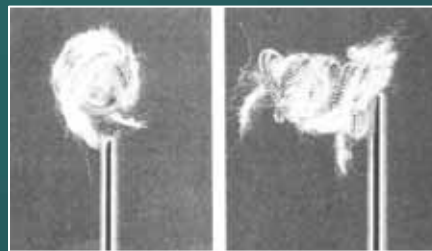
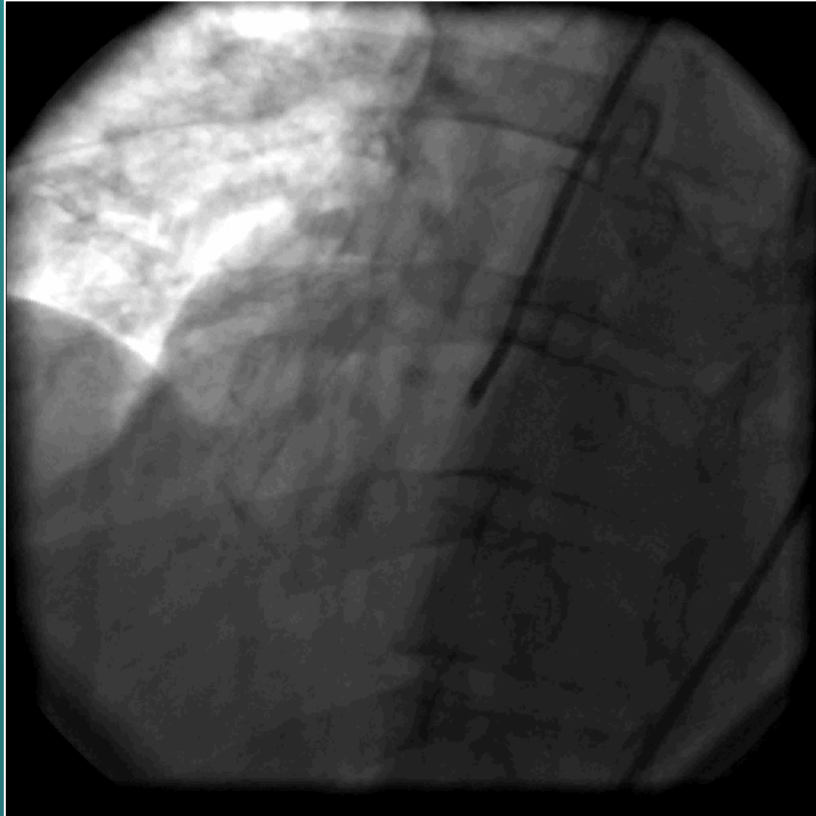
Pulmonary AV Malformation



Pulmonary AV Malformation



Coronary AV Malformation



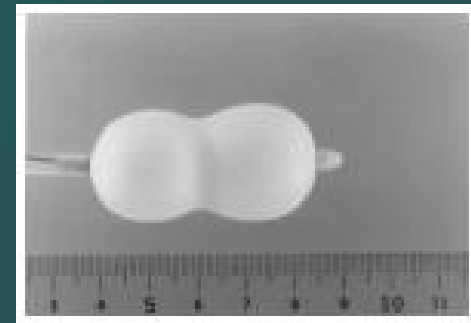
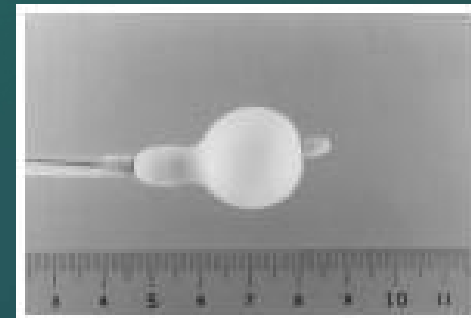
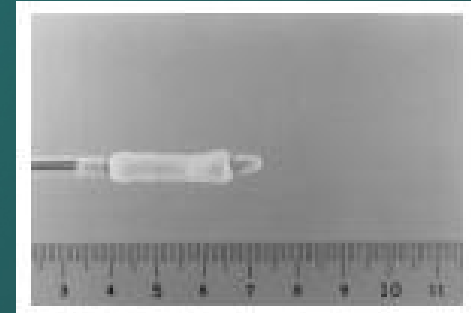
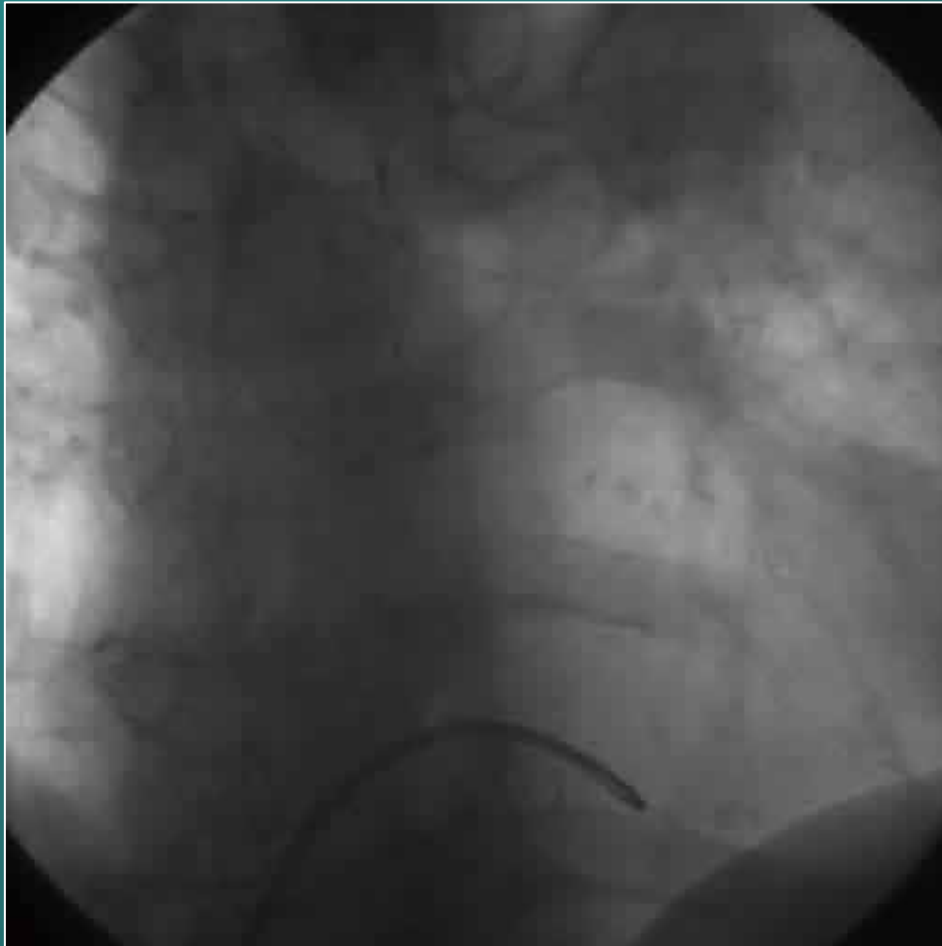
Interventional Catheterization for CHD: 2006

✓ Valvuloplasty:

Pulmonic Stenosis



Balloon Pulmonary Valvuloplasty

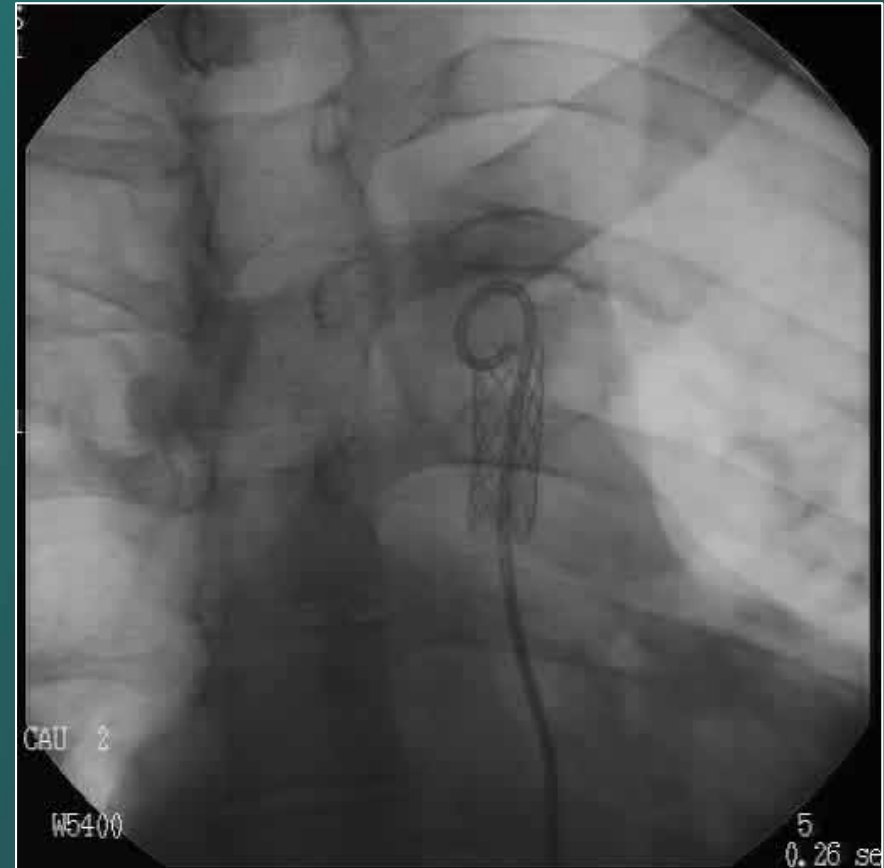
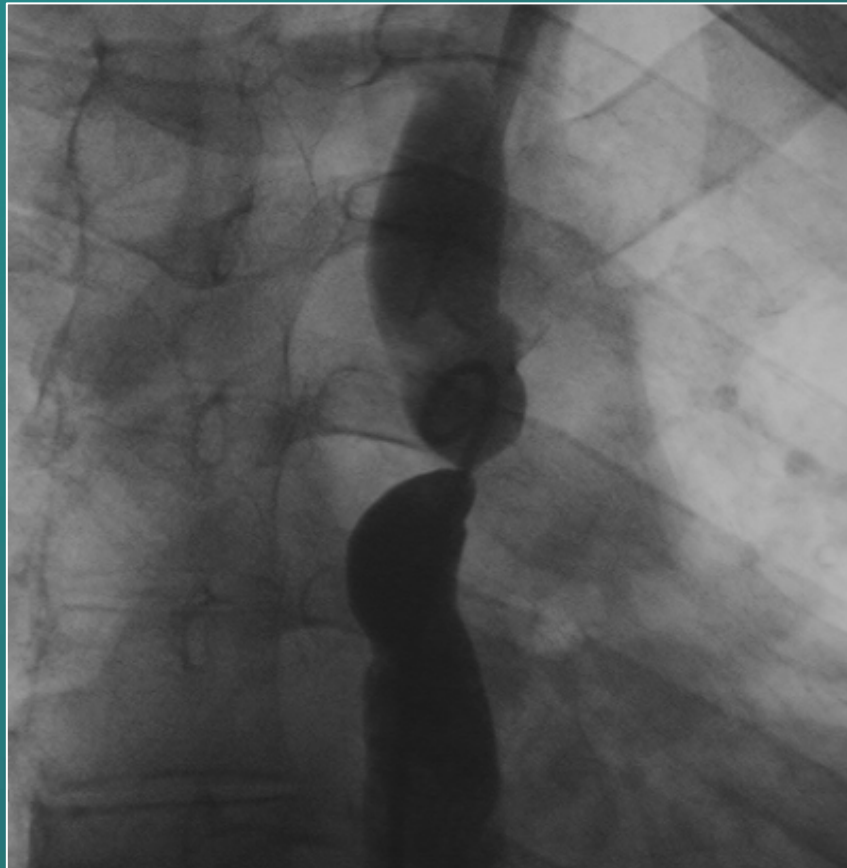


Interventional Catheterization for CHD: 2006

✓ Angioplasty for Congenital Obstruction

Coarctation of the Aorta

Coarctation of the Aorta



Conclusions

- ✓ **Small patient population**
- ✓ **Rare procedures**
- ✓ **Difficult to train large numbers of physicians**

Conclusions

- ✓ **Have good technology**
- ✓ **Technology getting better**
- ✓ **We need the data!!!!**

Conclusions

✓ We must establish:

- National Leadership
- Regional Centers of Excellence
- National Database Registries
- Establish criteria for procedures
- Standardize techniques and protocols
- Collect outcome data (prospectively)