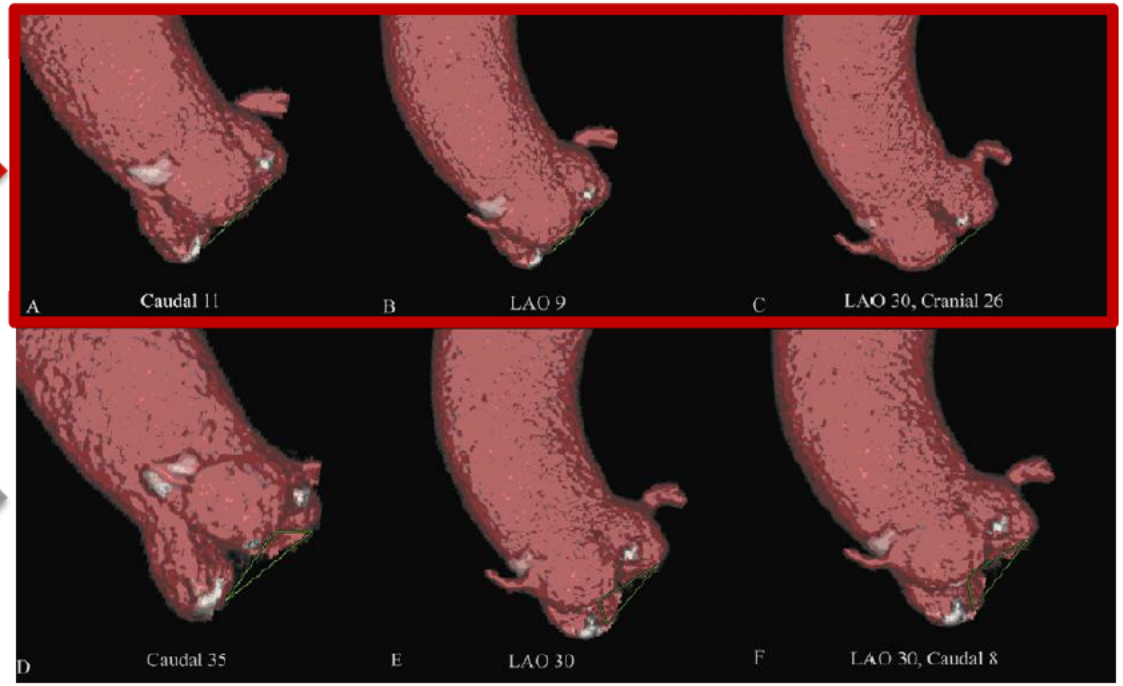
Finding a Coplanar View: CT

Prior to the procedure, CT can be used to identify the coplanar view by aligning the inferior aspects of each valve cusp in the same plane

Coplanar View

Non-coplanar View



NOTE:
Reconfirm the angle identified by CT during the procedure.
If patient is positioned differently, coplanar view may be different.

Finding a Coplanar View: CT

Why Use CT to Help Predict the Coplanar View

- CT may be particularly helpful in patients with unusual anatomy requiring steep projections that would be difficult to predict patients with:
  - Musculoskeletal abnormalities
  - Kyphoscoliosis
  - Markedly unfolded aortas
- Identifying potential angles will minimize contrast during the case
- A "**line of perpendicularity**" can be generated in each patient, where any point in the RAO to LAO spectrum can be utilized as long as the correct amount of caudal or cranial angulation is added

NOTE:
Reconfirm the angle identified by CT during the procedure. If patient is positioned differently, coplanar view may be different.

Procedural Plan Review

Patient Concerns	Intra-Procedural Plan	Contingency Planning
• Low EF? • Coronary disease? • RV / LV function • Intropes/pressors? • Small LV capacity? • Echo findings: – Annulus size? – STJ size? – Septal hypertrophy? • Heparin administered? – ACT level? • Renal issues? • Steroid dependent? • Pathological considerations?	• THV size confirmed? • Valvuloplasty (if performed): – Operators? – Balloon size? • Pacer checked and ready? • THV prepped and orientation confirmed? • Fluoroscopic angles (i.e. valve alignment, coplanar view, over arch) • Anatomical considerations? • Additional landmarks?	• Emergency cardiopulmonary bypass: – Cannula size? – Who will insert? – Long tubing? • Emergency IABP: – Size? – Right or left access? • Defibrillator: – Ready? – Who is responsible? • Sternotomy equipment available? • Blood available?

Vascular Access

Options for Vascular Access and Closure

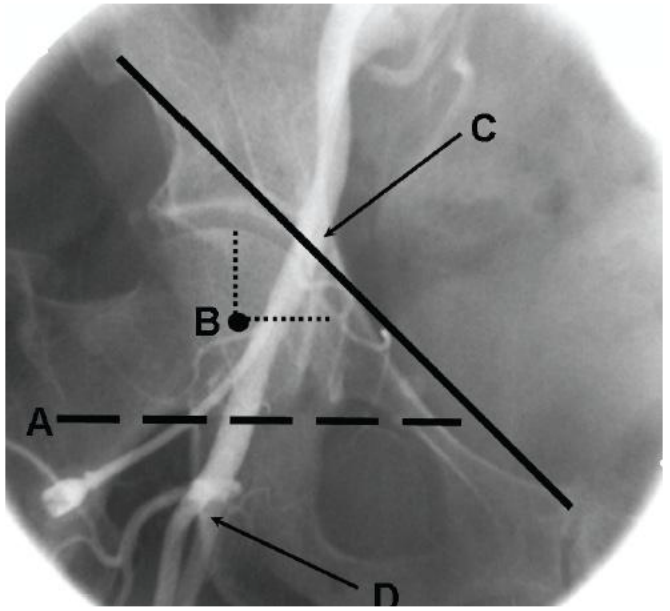
Surgical Cutdown and Repair	Percutaneous Access and Closure
+ Familiar to Surgeon	+ Avoids surgical incision
+ Direct visualization of puncture site	+ Allows for percutaneous closure
+ Tactile feel of calcium in artery	+ Tissue + tract provides support during sheath insertion
+ Simplified repair post THV implantation	
– No tissue tract to provide support	– Unable to visualize puncture site
– Possibly more trauma to vessel	– Repair post-procedure can be more difficult

NOTE:
Surgical cutdown and repair are recommended for the first few cases. Percutaneous access and closure may be considered by experienced users.

Vascular Access

Goals of Arterial Puncture

- Anterior wall stick
- Center of common femoral artery
- Below inguinal ligament
- Above any areas of calcification or plaque
- Avoid small branches
- Above femoral bifurcation



NOTE:
Too high puncture increases the risk of retroperitoneal bleeding

A. Bottom of the Femoral Head
B. Center of the Femoral Head
C. Approximately Location of the Inguinal Ligament
D. Femoral Bifurcation

Image courtesy or Zoltan Turi, MD and Cooper University Hospital.
Turi, Z., "Overview of Vascular Closure", Endovascular Today, April 2005

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