Basic Angiographic Views & Interpretation

Noorhayati Hj Tik
Senior Manager
Department of Radiology IJN
CORONARY ANGIOGRAM

Definition:

An invasive examination involving injection of contrast media after selective cannulation of the coronary arteries with image acquisition in multiple projections.
The Coronary angiogram will identify the main coronary branches of both the Left and Right Coronaries and its side branches with the various different angiographic views typically used during coronary angiography.
In order to get the best coronary views we need:

- Good understanding about the coronary anatomy
- Understand the requirements of the Interventionist
- The power of imagination
- The drive to always produce the best
To provide optimized basic coronary views with limited movement i.e., panning of table especially in dilated heart and post CABGs where we are required to visualize the origin of graft to distal end of native vessels.
LEFT CORONARY ARTERY (LCA)
LEFT CORONARY ARTERY

1) The Left main coronary artery gives rise to the left anterior descending artery (LAD) and the left circumflex (LCx) coronary artery.

2) Often bifurcations and vessel foreshortening and overlap cause errors in stenosis estimation.

3) Generally, for circumflex and proximal - the caudal views are most useful. For LAD and LAD/diagonal bifurcation visualization the cranial views are most useful.

4) Overall, if there is not a significant limitation on contrast utilization, standard 'around the world' angiography using a selection of the following angiographic views will document left coronary anatomy.
Right Anterior Oblique (RAO)

- Image intensifier is angled above the right side of the patient’s chest, visualizing the heart from the right side.
Heart is on the right
Apex points to right
Ribs go down to the right
LAD on the right
Spine is on the left
Clues to RAO and Caudal Angulation

Catheter and Spine Found On Left Side of Image

No Diaphragmatic Shadow
**Left Anterior Oblique (LAO)**

- Image intensifier is angled above the left side of the patient’s chest, visualizing the heart from the left side.
LAO – LEFT CORONARY

Heart is on the left of the spine
LAD extends to the apex
Ribs go down to the left
“3-L” rule (in LAO, the LAD is on the Left)

Fig. 5-4, cont’d. B and C, Left coronary artery.
Clues to LAO angulation

Spine on the Right Side of The image
Anterior Posterior (AP)

- Image intensifier is angled directly above the patient’s mid-chest, visualizing the heart from front to back
*Lateral*

Image intensifier is angled at a 90° angle from the patient’s midline, visualizing the heart from the far left side.
On lateral, LAD is on the skyline and nearest to sternum
Cranial

Image intensifier is angled toward the patient’s head, visualizing the heart from above
• Tend to elongate LAD and shorten the LCx
• Optimize visualization of LAD, septals and diagonals
Caudal

Image intensifier is angled toward the patient’s feet, visualizing the heart from below

- Tend to foreshorten LAD and elongate the LCx
- Optimize visualization of LCx and OM
LCA - LAO CD (Spider view)

- Shows LM, bifurcation of LAD and LCx
- Excellent view for proximal and mid LCx
- Excellent view for origin of OM
- Poor view for LAD (considerably foreshortened)
RIGHT CORONARY ARTERY (RCA)
**Left Anterior Oblique (LAO)**

- Image intensifier is angled above the left side of the patient’s chest, visualizing the heart from the left side.
The Right coronary artery is engaged in the LAO position. Initial angiographic imaging of the RCA in this view (LAO 30) gives the best view of significant ostial and proximal RCA disease.
The RCA looks like the letter “C”
Spine is on the right
Ribs pointed down to the left
AP Cranial
Image intensifier is angled toward the patient’s head, visualizing the heart from above.
Right Anterior Oblique (RAO)

- Image intensifier is angled above the right side of the patient’s chest, visualizing the heart from the right side.
• The RCA looks like the letter “L”
• Ribs point down to the right
• Spine to the left
CORONARY ARTERY BYPASS GRAFTS

Grafts - SVG, LIMA, Radial artery
Radial Artery Graft
Thank You