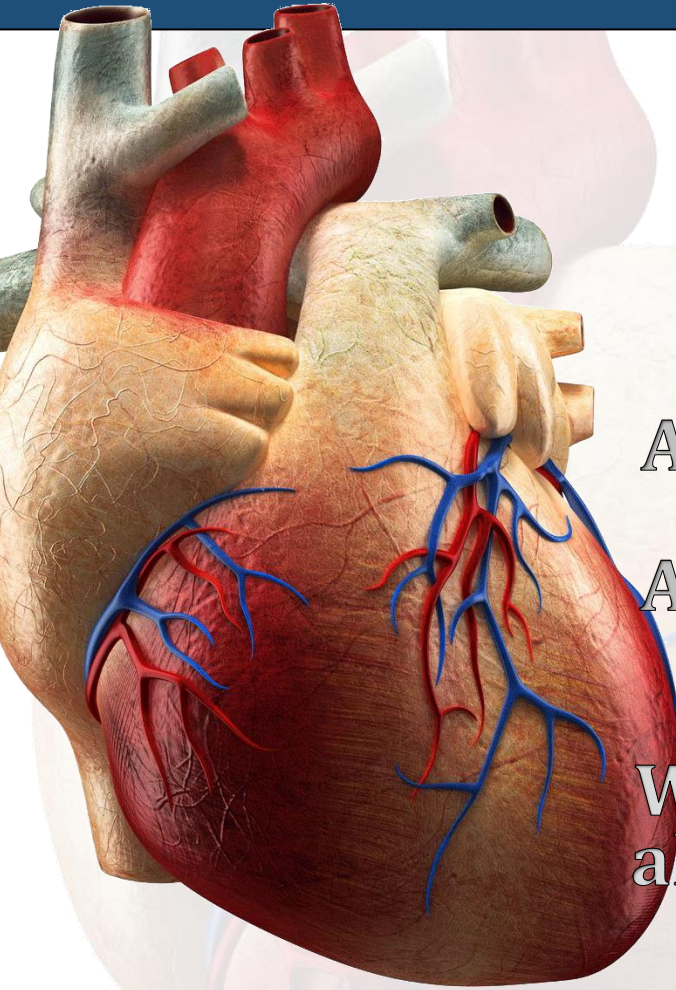


Coronary Angiography



How?

Why?

Angiography
Vs
Angioplasty?

What are the
alternatives?

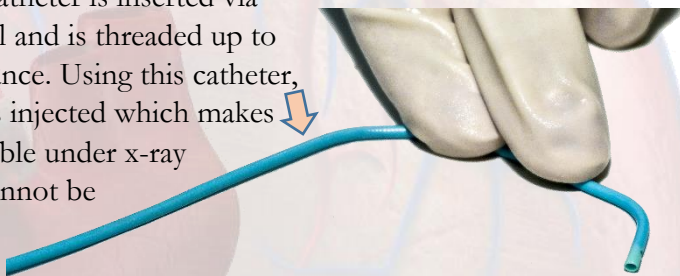
Patient Education Series
Cardiology clinic, 3rd Floor, B-wing
KIMS Hospital, Block III
Secunderabad

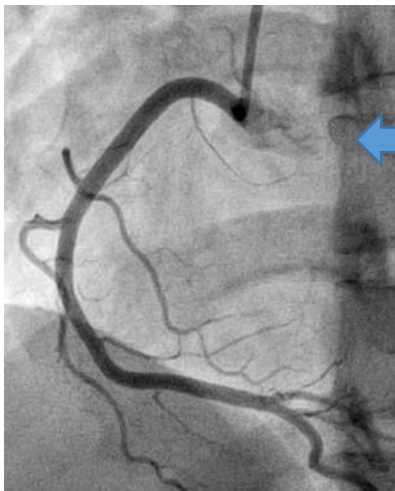
How is coronary angiography (CAG)

Conventional CAG is a daycare procedure. Total time commitment is 4-8 hours.

Workflow for a routine angiography:

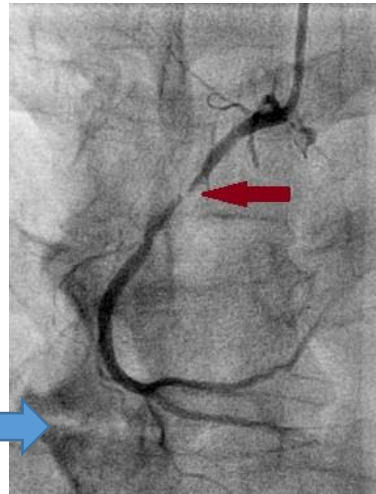
1. Pre-procedure investigations, preferably done 1-2 days prior, include blood tests, ECG/Echo, and COVID test if required.
2. Arrive at the cardiac catheterization (cath) lab at the designated time and day. Strict fasting is not required but avoid full meal prior.
3. If you take Metformin tablet, it is suggested to skip the dose on the day of angiography and the following day. If you take insulin glargine (Lantus), it is advised to take half dose the night before. Other medicines can be continued as scheduled, or as advised by your cardiologist.
4. Upon arrival, nurse will do the necessary formalities. Your wrist and groin area will be shaved. An intravenous cannula will be placed, and you will be attached to a heart monitor.
5. Once taken inside the cath lab, you will be draped with clean sterile covers (blue/green) from neck to feet to minimize infection.
6. Local anesthesia will be administered at the site of procedure (wrist or groin, will be decided by the performing doctor). The needle used for local anesthesia is thinner than the one used for blood testing. Patients typically don't feel any significant pain. Once local anesthesia is given, a tiny incision is made at the skin (patients don't feel pain at all).
7. A thin plastic tube called catheter is inserted via the underlying blood vessel and is threaded up to the heart under x-ray guidance. Using this catheter, contrast (a special liquid) is injected which makes the heart blood vessels visible under x-ray (normally, blood vessels cannot be seen on x-ray). By looking at the images, a cardiologist can instantly determine the degree of blockages and plan further treatment strategy. A typical angiography procedure takes less than 10 minutes.





Normal Angiogram showing a smooth outline of Right Coronary Artery

Angiogram showing stenosis (blockage) in mid-portion of Right Coronary Artery



8. After angiography, a bandage will be applied to the procedure site to prevent bleeding. This bandage can be removed after a few hours. The picture shows the right wrist of a patient who underwent angiography 2 hours back (access site circled).
9. Bed rest is advised for 2 hours (access site: wrist) or 6 hours (access site: groin) after which you can go home.
10. Normal activities can be resumed next day onwards. Patients who had angiography done via groin should take special precautions for 2 days.
11. Always remember to get the angiography CD after the procedure. This will be for your records and will be of tremendous help for future decision making.



Why is angiography done?

- ➔ Symptoms that are suggestive of blockages and/or heart attack
- ➔ Certain abnormalities on ECG, Echo, or stress test (like TMT, SPECT)
- ➔ Abnormal blood tests that suggest heart damage
- ➔ Routinely done prior to heart surgery (for example, before valve replacement)

Difference between Angiography and Angioplasty

Angiography (or Angiogram) is the procedure to **diagnose** blockages.

Angioplasty (or stenting, or PTCA, or PCI) is the procedure to **fix** the blockages. Angioplasty is done using specialized catheters, wires, balloons, and stents.

Essentially, both the procedures are performed in a similar fashion. For a patient, they both look the same. Because angioplasty involves putting a stent, it usually takes longer time to perform than an angiography.

Are there any alternatives to angiography?

Coronary angiography (CAG) is considered the best test to identify blockages. If CAG cannot be done for any reason, various alternatives are available like:

1. CT-coronary angiogram: It can visualize whether blockages are present or not but is not very accurate at defining the severity of the blockage (%).
2. Treadmill stress test (TMT): This is the most basic stress test where ECG is monitored while a person is made to walk/run on a treadmill.
3. SPECT stress scan: This test combines TMT with an advanced scan to increase the accuracy of TMT.
4. Stress echo (DSE): This test combines echocardiogram with a medicine that mimics exercise.

If any of the alternative test is abnormal, CAG should be done for further evaluation. Typically, an alternative test is done first if there is low suspicion for blockages. If a cardiologist is fairly certain that blockages will be present or if basics tests are abnormal, directly going for the CAG makes the most sense.



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