

CTA Runoff Primer

KEY POINT: The most clinically relevant finding on a runoff CTA is often the number of tibial vessels that remain patent across the ankle (three-vessel, two-vessel, single-vessel, or no continuous runoff).

Purpose

The goal of a runoff CTA is to identify hemodynamically significant stenoses, occlusions, and the quality of distal runoff.

Systematic Approach

Inflow

- Abdominal aorta
- Common iliac arteries
- External iliac arteries
- Common femoral arteries

Femoropopliteal Segment

- Common femoral artery
- Profunda femoris
- Superficial femoral artery (SFA)
- Popliteal artery

Tibial Runoff

- Anterior tibial artery
- Posterior tibial artery
- Peroneal artery

Determine how many vessels remain patent across the ankle:

- Three-vessel runoff
- Two-vessel runoff
- Single-vessel runoff
- No continuous runoff

Stenosis Grading

- Mild: <50%
- Moderate: 50–69%
- Severe: ≥70%
- Occluded: 100%

Focus on moderate and severe stenoses, which are generally the most clinically significant.

Acute vs Chronic Disease

Acute

- Abrupt vessel cutoff
- Intraluminal thrombus
- Minimal collateralization

Chronic

- Long-segment narrowing or occlusion
- Dense calcification
- Well-developed collateral vessels

Impression Structure

1. Aorta and aortoiliac inflow disease.
2. Right lower extremity findings, including runoff.
3. Left lower extremity findings, including runoff.
4. Additional significant findings.

Example Impression

1. Moderate aortoiliac atherosclerotic disease without significant inflow stenosis.
2. Right lower extremity: Multifocal severe SFA stenoses with preserved two-vessel runoff across the ankle.
3. Left lower extremity: Chronic distal SFA occlusion with single-vessel runoff across the ankle.
4. No evidence of acute arterial occlusion.