Radial Pseudoaneurysm Following Trans-Radial Coronary Angiography

SR Mittal

Abstract
A case of pseudoaneurysm of right radial artery following transradial coronary angiography is reported. Adequate hemostasis is the key to prevention. Prolonged ultrasonography guided compression of neck of pseudoaneurysm or injection of procoagulants in the cavity of pseudoaneurysm can help non surgical closure.

Case Report
A 57 yrs old female presented with multiple echymotic patches and bleeding from gums. She was a known case of hypertension with triple vessel disease and was receiving warfarin, clopidogrel, Aspirin, Nicorandil, Frusemide and Nebivolol. INR was 2.8 and platelet count was 2.3 lakhs / cu mm. She responded to discontinuation of warfarin and intravenous injection of vitamin K.

During routine examination she had a pulsatile swelling (3cm X 2cm) at the lower end of right radial artery (Figure 1). She had transradial coronary angiography 12 days back. As per patient’s version, procedure was followed by profuse bleeding and appearance of the swelling. Patient felt that the swelling was less than it’s original size. Colour Doppler evaluation of distal right radial artery showed a hematoma communicating with the radial artery via a narrow neck (Figure 2). Doppler evaluation showed bidirection flow in the neck of the pseudoaneurysm-systolic forward flow and diastolic backward flow (Figure 3).

Discussion
Pseudoaneurysms are hematomas in continuity with the arterial lumen. Hematoma cavity contains no normal arterial wall structures (i.e. media or adventitia). A true aneurysm is outlined by normal arterial wall structures. Blood flowing in and out of the arterial puncture site expands the hematoma cavity during systole and allows its decompression back into the arterial lumen in diastole. Presence of pulsations and an audible bruit over the swelling differentiate a pseudoaneurysm from simple hematoma. Pseudoaneurysm larger than 2 cm in diameter may enlarge progressively and ultimately rupture. Such expanding pseudoaneurysms need intervention. Ultrasound-guided compression of the narrow neck for 30-60 minutes can permanently close the track in some patients. Injection of procoagulant solutions in the cavity of the aneurysm is another option. Patients not responding to these less invasive measures may need surgical correction. Such pseudoaneurysms are usually seen after femoral puncture but are not reported in trans radial procedures because of effective compression against underlying bone. Effective initial control of bleeding after sheath removal is the key to prevent pseudoaneurysm formation.

Conclusion
Pseudoaneurysm can form following transradial approach if proper hemostasis is not achieved. Hypertension and over
doses of anticoagulants and antiplatelets prior to procedure can increase the risk.

References

Fig. 3: Pulsed Doppler imaging in the neck of pseudoaneurysm showing forward systolic and backward diastolic flow.