Reviewer's report

Title: Bilaterally Symmetrical Congenital Absence of Radial Artery: A Case Report

Version: 2 Date: 15 December 2013

Reviewer: Sean Galvin

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Zheng et al. present a case report of bilateral absence of the radial arteries with a presumed dominant anterior interosseous artery as the primary vascular supply of the hand. As the authors indicate anatomical variation of the radial artery is common but radial aplasia is rare (estimated 0.03 - 0.1% of the population) and as indicated I was unable to find any other reported cases of true bilateral radial aplasia in the available literature. When the radial artery is absent its usual vascular territory is most commonly supplied by the anterior interosseous (as is suggested by the authors for this case) or the median artery. (J. Anat. 2001: 199; 547–566)

An important point to consider is that Modified Allen’s testing may be positive (i.e. normal reperfusion of the hand) in the presence of an occluded or in this case absent radial artery and the clinical finding of a normal Allen’s test does not indicate normal vascular anatomy of the radial artery (for example following radial access angiography the radial artery may be occluded with clinical finding of a Positive Modified Allen’s test).

Compulsory Revision

1. With the identification of anatomical abnormalities in the radial arteries on distal diagnostic angiography (via the RA) was it wise to continue to PCI via the brachial approach. Did the authors consider converting to a transfemoral approach for the coronary intervention? The authors should include in the discussion the alternative options for angiography when significant anatomical variations of the radial artery are encountered. Some authors have suggested significant risk of complication with brachial angiography in centers not used to this approach (for example Catheter Cardiovasc Interv. 2002 Oct;57(2):161-5) whilst in high volume centre’s the brachial approach may have similar results to the transfemoral approach (for example Ann Acad Med Singapore. 2010 May;39(5):368-73).

2. I am unclear from statement in the conclusion “Arterial angiography should be performed before cardiac catheterization or reconstructive surgery in particular”. Are the authors suggesting that (a) all patients having radial access coronary angiography should have a retrograde radial angiogram performed prior to wire insertion and (B) are they suggesting that all patients should have angiography prior to use of the radial artery at the time of coronary artery bypass surgery?
term reconstructive surgery is ambiguous and needs to be clarified.

3. The angiography images provided are from a retrograde trans-radial approach on both the left and the right side. I am not clear from the available images if the authors have actually demonstrated the anatomical ulnar artery and absence of a proximal radial artery. Antegrade angiography performed proximally from the brachial approach would have better identified the vascular anatomy of the forearm and confirmed or excluded the presence of a proximal radial artery. The references quoted in the text all confirm the anatomical pattern of the forearm by antegrade angiography or anatomical cadaveric dissection. In this case was an angiogram via the brachial approach performed? If so could this supplementary file be included?

Minor changes

Page 5 Line 1 “Caucasian female specimen” the word specimen is not needed

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests