Proširenі sažetak / Extended abstract

Frequency of anatomic variations of radial artery in patients undergoing transradial heart catheterisation

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Over the last ten years, transradial cardiac catheterisation has been increasingly applied, primarily because of its lower incidence of complications compared to the femoral approach. However, one of the greatest flaws of the transradial approach is a relatively high incidence of catheterisation failure (1-5%). Anatomic variations of the radial artery are ranked second among the reasons for this. Previous studies have not provided unambiguous data on the frequency of them. It is therefore the aim of this study to determine the frequency of anatomic variations using routine angiographies of the radial artery (RA) during the left heart catheterisation at the Interventional Cardiology Unit of the University Hospital Centre Zagreb in 2013. Seven hundred and forty-nine such cardiac catheterisations were carried out during the studied period. All the images were examined and, after selection, 602 remained for further research. The process of selection required all patients to be of age and to have an accurate image of radial artery angiography. Correctly performed radial artery imaging involved the imaging of the division of the brachial artery into the ulnar and radial arteries. It also implied the visibility of at least half of the radial and half of the brachial artery. Anatomic variations are classified in accordance with the classification provided by Burzotta et al. Of the total of 602 patients, 414 (68.8%) were men and 188 were women. The youngest patient was 18 and the oldest one was 87 (mean±SD; 64±10.78), with a normal distribution of subjects across the age groups. In 538 (89.4%) of patients, cardiac catheterisation was performed through the right arm. The frequency of anatomic variations of RA was 8.8%, exclusive of tortuosities whose frequency was 12.7%. The most frequent anatomic variation was the high origin of the radial artery, found in a total of 31 (5.1%) subjects. Radioulnar loops, being one of potential contraindications for the procedure, were reported in 2% of the cases. Regression analysis revealed that age ($p<0.001$), female sex ($p=0.015$) and high origin ($p=0.034$) statistically significantly contributed to the development of tortuosity. The results indicate that the incidence of tortuosity increases linearly with age. Although this is not a contraindication for continuing with the procedure, we recommend that elderly patients should have angiography performed at the beginning of the procedure due to a higher frequency of tortuosity.

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