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Bicuspid Aortic Valve In Qatar

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Abstract

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Objective
Bicuspid Aortic Valve (BAV) is the commonest congenital cardiac anomaly with about 1% of the population being affected and can be divided into different phenotypes. The majority of BAV patients will require valve replacement surgery in their lifetime. We aimed to assess the BAV patients in Qatar in terms of demographics, valve phenotype, associated valve dysfunction, ejection fractions and aortic dilatation.
Methods
BAV patients were identified from an existing echocardiography database. The patients' demographics were recorded. The echocardiograms were assessed for phenotype (figure 1), aortic dilatation, as well as ejection fraction and degree of valvular dysfunction. Associated conditions such as coarctation were also noted.
Results
128 BAV patients were identified over almost 3 years (September 2011 to August 2014). There were 108 males (84%) and 20 females (16%), with an age range of 16 to 74 years (median 47, mean 45), (figure 2). The phenotypes were evenly distributed with 64 horizontal (right-left) and 64 vertical (right-non coronary). Males had 50% horizontal and 50% vertical compared to females 40% horizontal and 60% vertical. Overall 25% had significant stenosis (moderate and above) and 50% had no evidence of stenosis. 21% had significant regurgitation (moderate and above) and 50% had no evidence of regurgitation. The left ventricular ejection fractions were 83% good, 14% moderate and 3% poor (figure 3). Overall 40% of the BAV patients had dilatation of the aorta, with a breakdown of vertical types - 44% dilated and 56% non-dilated and horizontal 37% dilated and 63% non-dilated. There were 8 coarctations in the group, 4 in the vertical group and 4 in the horizontal group.
Conclusions
There are more male BAV patients in Qatar than the normal 2-3:1 (male:female) quoted in the literature, but this may reflect the skewed population in Qatar. There are similar numbers of horizontal and vertical phenotypes, and similar degrees of stenosis and regurgitation. Overall 50% of patients had no vavular dysfuction demonstrated at this time. Poor left ventricular ejection fraction was rare at presentation. Aortic dilatation was slightly more common in the vertical group and 8 coarctations were seen giving an incidence of 8% in our BAV population.
BAV is a common cardiac anomaly that is likely to require cardiac surgery at some point for most patients, and study in an Asian population has not previously been performed. We will continue to expand our cohort with our main areas of interest being the associated aortic dilatation and the high incidence of coarctation in our population.