

Bicuspid Aortic Valve in Patients with Kommerell Diverticulum and Aneurysm: A Case Series

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Introduction

Data on the association of bicuspid aortic valve (BAV) with Kommerell diverticulum (KD) and Kommerell aneurysm (KA) is scarce. We aim to study the association of BAV with KD and KA and present 5 cases with BAV and KD or KA.

Methods:

The Mayo Clinic radiology database was retrospectively analyzed to identify patients with aberrant subclavian artery from 1990-2014. Images were analyzed by two independent blinded reviewers to determine presence of KD and KA. Clinical and echocardiographic data at the time of diagnosis was reviewed.

Results:

Overall, 863 pts with right or left aberrant subclavian artery were identified, of whom 121 had KD and 28 patients with KD developed a KA. The incidence of BAV in patients with KD was 5/121 (4%) while incidence in KA was 2/28 (7%). The 2 patients with KA and BAV also had a thoracic aortic aneurysm (TAA). In univariate analysis, presence of BAV with KD is a risk factor for development of TAA in patients with KD (odds ratio OR=3, 95% CI 2.99-210, P=0.03). The details of the 5 patients with BAV and KD or KA are mentioned in the Table.

Conclusion:

Presence of a BAV in patients with KD is a potential risk factor for development of TAA. Most of these patients also develop KA. Therefore these patients should be followed very closely for aneurysm development.

Subjects	KD/KA	Indication for imaging	Anatomy	Surgery for KD/KA
Subject A	KD	Cough, dysphagia	Right aortic arch with aberrant left subclavian	Vascular ring resection with KD repair
Subject B	KD	Incidental finding in chest pain evaluation	Right aortic arch with aberrant left subclavian	None
Subject C	KD	Incidental finding in chest pain evaluation	Left aortic arch with aberrant right subclavian	None
Subject D	KA	Cough, dyspnea, hoarseness, chest pain	Left aortic arch with aberrant right subclavian	Left subclavian to carotid transposition
Subject E	KA	Pulsatile neck mass	Left aortic arch with aberrant right subclavian	Left subclavian to carotid transposition and KA repair

KD, Kommerell Diverticulum; KA, Kommerell Aneurysm