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Comparison study on ascending aortic and arch characteristics in patients with degenerative arch aneurysms and type B aortic dissection with aneurysmal changes

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Introduction: The aim of this study is to examine the ascending aortic and arch characteristics in a cohort of Chinese patients who had arch and descending aortic pathology and to compare with a control group of patients who had abdominal aortic pathology without thoracic aortic pathology.

Method: Prospectively collected computerized database on 3 groups of patients: Degenerative arch aneurysms; chronic type B thoracic aortic dissection with aneurysmal changes; patients with infrarenal aortic aneurysms. Their computed tomography images were analyzed using Aquarius workstation (TeraRecon, San Mateo, USA) and measurements of aortic diameter was measured at intervals from the root, ascending, arch to just proximally to the left subclavian artery. Comparisons were made and statistical analysis was with ANOVA, with a p-value of ≤ 0.05 taken as statistical significant.

Result: There were 30 patients in each group. Patient in group 1 were older than group 2 (age 771.1±8.6 versus 61.9 ± 14.5 , group 3 73.7±10; p<0.001). Maximum sac sizes were larger in group 1 than group 2 (71.7±2.84cm versus 57.7±1.96; p=0.001). Regarding mean diameters at various levels, group 1 were statistically larger than groups 2 and 3, whilst there was no statistical difference between group 2 and 3. For maximum aortic dimensions, the group 1 diameters were near or more than 40 mm, whilst group 2 mean diameters were less than 40 mm (p<0.01 at all levels). Having an arch aneurysm was the only significant predictor of having a mid- or distal-ascending diameter of \geq 40mm (Odds ratio 4.57; p=0.007).

Conclusion: This study showed that ascending aortic diameters are often dilated and unhealthy in patients with degenerative arch aneurysms, compared with those with chronic dissections with aneurysmal changes or with infrarenal aortic aneurysms. Such unfavorable anatomical criteria may prevent the applicability of pure endovascular arch repair.

Biography

Yiu Che Chan has graduated from Charing Cross and Westminster Medical School, London University and trained at St. Mary's Hospital, Guy's and St. Thomas' Hospital. He is working as an Associate Professor in Division of Vascular Surgery at the University of Hong Kong. He was UCLA Travelling Scholarship Recipient to University of California, Los Angeles in 2012 and he is the Director of Surgical Admissions at University of Hong Kong and the Secretary General for the Asian Surgical Association. He is a Vascular Surgeon specializing in open and minimally invasive endovascular surgery involving the aorta, peripheral arteries and veins. He has multiple international and local research grants and has published over 100 papers.

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