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POSSIBLE PREDICTORS OF AORTIC DISSECTION AT A DIAMETER LESS THAN 55 MM

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Introduction: Given the high mortality rate in patients with type A aortic dissection, predictive tools to identify patients at increased risk of aortic dissection, when the diameter of ascending aorta is still under the threshold of 55 mm, are needed to assist clinicians for optimal intervention and to help patients raise their alert.

Method: We evaluated 528 consecutive patients of acute type A aortic dissection (AAAD) admitted to Fuwai Hospital, Beijing, China between 2009 and 2013. Univariate testing followed by multivariate logistic regression analysis was performed to identify independent predictors of AAAD at a diameter less than 55 mm. A simplified scoring system for predicting aortic dissection at a smaller diameter was then established based on the results of the multivariate analysis.

Results: Of the 528 AAAD patients, 375 (71%) were with a diameter less than 55 mm at the level of ascending aorta. A total of 25 variables as regard with demographic characteristics, clinical features and imaging were investigated. Logistic regression identified the following presenting variables as predictors of AD at a diameter less than 55 mm: age \geq 50 years (OR, 0.41; 95% CI, 0.26 to 0.65; P<0.01), hypertension (OR, 2.02; 95% CI, 1.20 to 3.40; P=0.01), history of aortic valve replacement (OR, 0.05; 95% CI, 0.01 to 0.42; P=0.01), history of catheterization (OR, 7.45; 95% CI, 1.26 to 44.21; P=0.03), hepatic cyst (OR, 2.69; 95% CI, 1.30 to 5.60; P=0.01), renal cyst (OR, 3.62; 95% CI, 1.85 to 7.08; P<0.01), bovine arch (OR, 6.39; 95% CI, 1.47 to 27.90; P=0.02), BAV (OR, 0.19; 95% CI, 0.04 to 0.95; P=0.04). Area under the receiver operating curve (ROC) was 0.73. Hosmer-Lemeshow statistic, P=0.28.

Conclusion: Patients with age <50 years, hypertension, a history of catheterization, hepatic cyst, renal cyst, or bovine arch were more likely to develop aortic dissection at a smaller diameter.

Recent Publications

1. Cheng L, Huang F, Chang Q, Zhu J, Yu C, Liu Y, et al. (2010) Repair of extensive thoracoabdominal aortic aneurysm with a tetrafurcate graft: midterm results

of 63 cases. The Heart Surgery Forum 13(1):E1-6.

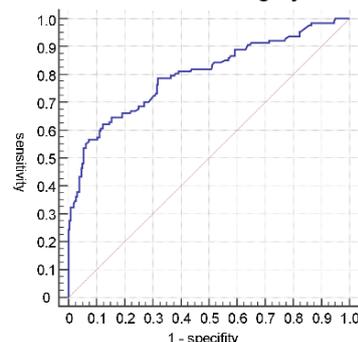


Figure 1: ROC curve to evaluate the predictive power of the multivariate analysis.

2. Sun X, Zhang L, Yu C, Qian X and Chang Q (2014) One-stage repair of extensive aortic aneurysms: mid-term results with total or subtotal aortic replacement. Interactive Cardiovascular & Thoracic Surgery 18(3):278-82.
3. Zhang L, Yu C, Qian C, Luo X, Qiu J and Liu S (2016) Comparison of gene expression profiles in aortic dissection and normal human aortic tissues. Biomedical Reports 5(4):421-7.
4. Liu P, Qian C, Qian X, Sun X, Yu C, Tian C, et al. (2016) Early and mid-term results after hybrid total arch repair of DeBakey type I dissection without deep hypothermic circulatory arrest. Interactive Cardiovascular & Thoracic Surgery 23(4):608.

Biography

Cun Tao Yu is one of the most famous cardiovascular surgeons in China. He is especially good at all kinds of operation of large vessels and has completed over 1500 operations such as total arch replacement and thoracoabdominal aortic replacement. Jin Lin Wu is his doctoral candidate.

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