

The left atrial Dimension Changes insufficiently reflect interatrial conduction Disorders in elderly Population.

Introduction

The progressive damage of the interatrial conduction system, which eventually leads to a Bachmann's-bundle block is facilitated by functional & structural alterations to the atria, including the Bachmann's-bundle. These changes are linked to an increased chance of developing atrial fibrillation. Conduction disturbances, such as Bachmann's-bundle block's, often precede atrial dilation, and thus might be a better predictive indicator for the future development of atrial fibrillation.

Methods

The study included 210 patients (170 women (79.1%), aged 65 to 94 years (M = 78 years, SD = 7 years). We compared and analyzed the echocardiographic measurements of the atria - LA dimensions with the respective ECG's (paper speed 50mm/s, amplitude of 1 mv/1cm) to assess the different stages of the Bachmann's-bundle (BB) block and evaluate if they matched the expected changes in dimension or if there was a more suitable indicative value.

Our assessment was based on the P-wave duration and morphology: Stage 1- physiologic interatrial conduction, Stage 2- partial Bachmann's bundle block (P-wave duration >120ms & notched morphology in lead II), Stage 3- total Bachmann's bundle block (P-wave duration >120ms & biphasic morphology in lead II).

Results

The interatrial conduction delay is related more prominently to an increased P-wave duration and altered morphology than to the increase of the left atrial diameter. With more subtle changes of the atrial dimensions in the complete block and more pronounced dimensional changes in patients with incomplete blocks.

Conclusion

The P-wave duration was a more sensitive indicator than the left atrial diameter for interatrial conduction disturbances.

Interatrial conduction disturbances might precede the structural changes such as dilation of the atria & can thus be used as a better diagnostic value, to predict sequential conditions, than echocardiographic measurements of the atria.