

Left atrial appendage: structure, function, and role in thromboembolism

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<http://hinari-gw.who.int/whalecomwww.ncbi.nlm.nih.gov/whalecom0/pubmed/10525506>

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Abstract:

The left atrial appendage (LAA) is derived from the left wall of the primary atrium, which forms during the fourth week of embryonic development. It has developmental, ultrastructural, and physiological characteristics distinct from the left atrium proper. The LAA lies within the confines of the pericardium in close relation to the free wall of the left ventricle and thus its emptying and filling may be significantly affected by left ventricular function. The physiological properties and anatomical relations of the LAA render it ideally suited to function as a decompression chamber during left ventricular systole and during other periods when left atrial pressure is high. These properties include the position of the LAA high in the body of the left atrium; the increased distensibility of the LAA compared with the left atrium proper; the high concentration of atrial natriuretic factor (ANF) granules contained within the LAA; and the neuronal configuration of the LAA. Thrombus has a predilection to form in the LAA in patients with atrial fibrillation, mitral valve disease, and other conditions. The pathogenesis has not been fully elucidated; however, relative stasis which occurs in the appendage owing to its shape and the trabeculations within it is thought to play a major role. Obliteration or amputation of the LAA may help to reduce the risk of thromboembolism, but this may result in undesirable physiological sequelae such as reduced atrial compliance and a reduced capacity for ANF secretion in response to pressure and volume overload.