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MAST CELLS IN CALCIFIC AORTIC STENOSIS

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Abstract

In developed countries, calcific aortic stenosis (CAS) has become the most common acquired valvular disease and reason for aortic valve replacement. It is considered a form of atherosclerosis and, like the latter, of inflammatory origin, with presence in the calcified aortic valves of blood vessels, lymphatics, lymphocytes, plasma cells, histiocytes, and sometimes also of metaplastic bone tissue. This study is aimed at examining the presence of CD117 - positive mast cells in CAS. In 56 examined calcified aortic valves excised by cardiac surgery, mast cells were constantly present as a part of the polymorphous cellular infiltrate; in individual cases, their numbers were 1 – 90 (median 24). The numbers were significantly higher in the congenitally malformed / bicuspid valves (median 40) than in the tricuspid ones (median 20). In valves with presence of metaplastic bone, mast cells were significantly more numerous (median 42) than in those without metaplasia (median 20). In 12 normal aortic valves obtained at autopsies, the numbers of mast cells were 4 – 21 (median 11). Discussed is a possible role of mast cells in pathogenesis of CAS.

Abbreviations: F=female, M=male, n=number, y=years

Keywords : Calcific aortic stenosis · Mast cells · CD117 · Pathogenesis

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Introduction

In developed countries, calcific aortic stenosis (CAS) has become the most common acquired valvular disease and reason for aortic valve replacement. The prevalence of the disease increases with age, reaching 5% of persons over 75 years of age.

In the past, calcific aortic valve disease was thought to be due to degenerative, time-dependent, wear-and-tear of the leaflets, with passive dystrophic calcium deposition. Now,