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Cardiac prognosis of patients with subaortic membrane according to their morphology

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INTRODUCTION: Subaortic membrane is an entity which evolves during adulthood and can associate cardiac complications. Different morphologies have been described, although it is unknown if their prognosis varies according to these patterns. The aim of this study was to evaluate the cardiac prognosis of patients with subaortic membrane according to their morphological characteristics in adulthood.

METHODS: Forty-five patients diagnosed with subaortic membrane by imaging techniques were consecutively included (March 1999-August 2018). Three morphologies were described: fibromuscular ridge (FR), crescent-shaped (CS) and filamentous-shaped (FS). Cardiac complications were defined as mortality due to heart failure and/or necessity of aortic valve surgery and/or membrane resection.

RESULTS: Twenty-six cases (58%) had FR, 16 (35%) had CS and 3 (7%) presented FS (7%) (Fig.1). No differences were found in basal clinical parameters between groups. FR type was associated with the presence of dynamic gradient in baseline study (27% vs 0%, p = 0.014), but there were no differences in left ventricular ejection fraction (68 ± 8% vs 64 ± 8%; p = 0.092), nor in maximum thickness of basal interventricular septum (12.1 ± 3.9mm vs 11.7 ± 4.1mm, p = 0.699), nor in the presence of moderate/severe aortic stenosis (15% vs 11%, p > 0.999) with the other morphologies. During follow-up (mean ± SD= 5.8 ± 4.4years) 15 (33%) patients presented cardiac complications (2 deaths due to heart failure and 12 valvular interventions and/or membrane resection). FR type patients presented a higher cardiac complication rate (50% vs 11%, p = 0.006) and greater necessity of open-heart surgery (46% vs 11%, p = 0.011) than the other groups during follow-up.

CONCLUSIONS

FR type is associated with a higher rate of cardiac complications during follow-up than other subaortic membrane morphologies. Dynamic gradient associated to this pattern could be the basis of a possible pathophysiological mechanism related to the worst prognosis of these patients.

Figure 1. Different morphologies of subaortic membranes. (A) Fibromuscular ridge type; (B) Crescent-shaped type; (C) Filamentous-shaped type. aL: anterior leaflet of mitral valve ; Ao: aorta; LA: left atrium; LV: left ventricle; RV: right ventricle.

Abstract P1760 Figure.