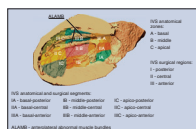


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UNDERSTANDING SEPTAL MORPHOLOGY IN HYPERTROPHIC CARDIOMYOPATHY—ALTERNATIVE VISION



To the Editor:

We really appreciate the effort of the authors¹ to propose the nomenclature of the interventricular septum (IVS) morphology to be used in the surgical treatment of hypertrophic obstructive cardiomyopathy (HOCM), both for the purpose of training and for uniformity in expert assessment of various HOCM phenotypes. At the same time, we would like to comment on several key points outlined in the article.

In HOCM nomenclature, it is generally agreed to divide left ventricle (LV) in 3 zones across its long axis. The proposed margins of the zones are questioned. The length of zone 1 is correlated to the length of the anterior mitral valve leaflet, which varies largely across its segments. The length of zone 2 is described as equal to the length of the chords. In HOCM, however, chords are often fibrotic and shortened,² which exacerbates systolic anterior motion and contributes to the left ventricular outflow tract obstruction. Moreover, length of the chords varies significantly depending on papillary muscles anatomy and positioning. Zone 3 corresponds to the rest of IVS, again depending on papillary muscle length. According to this nomenclature, cases of HOCM with isolated LV narrowing at the level of papillary muscles, which are often associated with apical aneurysms, fall into the apical category; however, actually they are midventricular. Another consideration is that the area of zone 3 is unproportionally bigger than corresponding areas of zones 1 and 2.

In HOCM nomenclature, we would emphasize the prevalence of combined basal–midventricular form, which accounted for 60.2% cases in our register.³ The proposed anatomical topography from the surgeon's view with clock orientation lacks accuracy in providing mapping across the entire IVS length, being limited to the immediate subaortic area.

In our practice, we routinely use the anatomical and surgical classification of the IVS.⁴ It divides IVS across its long

axis into 3 anatomical zones of equal length (basal, midventricular, and apical) (**Figure 1**). Each zone is in turn divided into 3 further segments across the IVS short axis by lines originating from the commissure between the aortic valve right and noncoronary cusps, the nadir of the right coronary cusp, the commissure between the right and left coronary cusps, and going toward the LV apex.

Simple and clear division of the IVS into 9 segments that are nearly equal in size is invaluable in the precise assessment of the IVS, and abnormal muscle bundle (AMB) morphology aids in the classification of various HOCM phenotypes during septal myectomy planning. Having had an extensive experience in HOCM surgery using 3D modeling,³⁻⁵ we deem it appropriate to include LV AMBs into the HOCM nomenclature. A total of 81.6% of patients in our series had AMBs that contributed to the obstruction. The majority of them were fused with IVS and originated from the basal zone.³

We believe that 3D modeling is highly beneficial in HOCM surgery, especially in the mapping of IVS and AMBs excision zone, as it provides a personalized approach with surgery planning based on thorough analysis of IVS spatial morphology and facilitates the assessment of HOCM phenotypes.³⁻⁵

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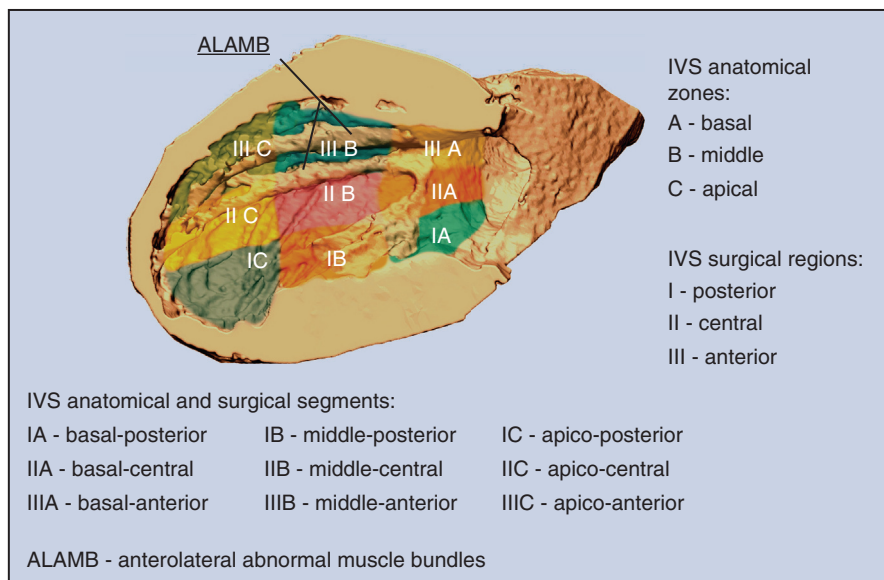


FIGURE 1. Anatomical and surgical topography of interventricular septum (IVS) with abnormal muscle bundles. *ALAMB*, Anterolateral abnormal muscle bundles.

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