

## In Response to: Unsolved Enigma of Atrial Myxoma with Biventricular Dysfunction

Dear Editor,

Thanks to Raut *et al.*[1] for appreciating our efforts in managing the case of atrial myxomas. A brief discussion is warranted here on the types, size of cardiac myxomas, interleukin 6 (IL-6) levels, left ventricle (LV) dysfunction, and their relation. IL-6 is a pleiotropic cytokine with a variety of biologic activities, including differentiation of B cell, thymocytes, and T cells; activation of macrophages; and stimulation of hepatocyte to produce acute-phase proteins such as C-reactive protein.<sup>[2,3]</sup> It is also said to have paracrine, endocrine, and autocrine growth functions.<sup>[3]</sup>

A correlation between tumor size and serum level of IL-6 has been found. Tumor size index was described by Soeparwata *et al.* with three dimensions of the tumor.<sup>[4]</sup> In a study, it was found that threshold of tumor size index for the development of asymptomatic immunologic abnormalities appeared to be 19 cm<sup>3</sup> and the threshold for constitutional symptoms appeared to be 143 cm<sup>3</sup>. After measuring serum IL-6 levels, it was proved that the greater the tumor size index, the higher the IL-6 serum level, probably due to more number of cells secreting the interleukin, accompanied with more intense constitutional symptoms.<sup>[5]</sup> Their relation to the amount of LV dysfunction has not been studied extensively, but there is an evidence that suggests that IL-6 depresses papillary muscle contraction and is negatively inotropic in cardiomyocyte cultures.<sup>[6]</sup> It may be involved in the progression of subclinical LV dysfunction to clinical congestive heart failure.<sup>[7]</sup> Hence, we may imply that the larger the tumor size, the more IL-6 will be secreted and greater can be the LV dysfunction.

Macroscopically, myxomas have been divided into type 1, ones with an irregular or villous surface and a soft consistency and type 2, ones with a smooth surface and a compact consistency.<sup>[8]</sup> Microscopically, myxomas consist of myxoid matrix composed of acid mucopolysaccharide within which polygonal cells resembling multipotential mesenchymal cells are present. These cells are found in all cardiac myxomas and are capable of secreting IL-6. It has not been studied yet if there is a difference in density of these cells among type 1 and 2 myxomas. If it were so, it would be easier to predict higher levels of IL-6 and greater amount of LV dysfunction in a patient by looking at tumor size and morphology. Further studies are needed in this field for better understanding of the pathology and exact management of such cases. Till then, myxomas, when they cause LV dysfunction, will remain a Gordian knot with only speculative theories circulating around them.

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### Conflicts of interest

There are no conflicts of interest.

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