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Commentary: Extended resection for radical treatment of advanced-stage thymoma can result in resolution of severe myasthenia crisis refractory to medical therapy

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CENTRAL MESSAGE

Extended resections including surrounding organs are justified for radical treatment of invasive thymoma and may allow remission of myasthenia crisis refractory to maximal medical therapy.

In their article in this issue of the *Journal*, Iqbal and colleagues[1] report an interesting case documenting a challenging radical resection of advanced-stage thymoma allowing resolution of the associated myasthenia gravis (MG) crisis refractory to maximal medical therapy. Surgical operation included extrapleural pneumonectomy and partial-thickness resection of the left ventricle without cardiopulmonary bypass (CPBP). The authors are to be congratulated for their excellent surgical and clinical results, and the scientific message arising from this article is certainly of great interest.

The authors address some relevant issues in thymoma surgery. The first is that even extended and technically demanding operations can be justified for the treatment of advanced-stage large invasive thymic tumor. The biological behavior of this neoplasm, with long-term survival also in presence of recurrence, seems to support the rationale for such interventions. This is further confirmed by available results of surgery for advanced-stage thymic tumors that report survival rates comparable to those of patients with stage I and II disease when complete tumor removal is accomplished.[2-4] Completeness of resection has been reported as the main significant prognostic factor in many series.[2-4]

Extrapleural pneumonectomy has been proposed as a viable option in selected cases with extended disease involving the lung and pleura, and precluding gross tumor removal with lesser resections.[5] Surgical treatment performed in the present case also included a partial-thickness resection of the left ventricle involved by the tumor. This proves that, as reported in other recent experiences, the heart is no longer an "off-limits zone" for the thoracic surgeon when performing surgical treatment of both thymic and lung tumors invading the cardiac chambers, with or without CPBP. Radical resection can be possible for deeper infiltration of the heart by thoracic malignancies as well. In our surgical practice over the last several years at the Sant'Andrea Hospital of the Sapienza University of Rome, we have shown that extended and full-thickness resection with prosthetic reconstruction of both the atrium and the ventricle infiltrated by the tumor also can be performed safely under CPBP with uneventful postoperative outcomes.

Another interesting finding reported by Iqbal and colleagues is that complete removal of thymoma and thymic tissue can be the only effective therapeutic option in some cases of thymoma-associated MG crisis that have proven refractory to maximal medical therapy. However, it is well known that the efficacy of this surgical treatment for thymomatous myasthenia symptoms is not always assured, and that some

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patients do not achieve neurologic remission after thymoma resection.[6] Moreover, MG outcome after thymectomy and thymomectomy has been reported to be significantly correlated with World Health Organization classification histotypes in some series, so the probability to obtain effective control of the neurologic disease with radical tumor resection can be partially predicted according to the histological characteristics.[7] All these aspects should be noted and considered when planning such a high-risk operation.

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