Commentary: A paradigm change in surgical management of the apical hypertrophic cardiomyopathy to avoid heart transplantation.

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Commentary: A paradigm change in surgical management of the apical hypertrophic cardiomyopathy to avoid heart transplantation.

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CENTRAL MESSAGE: Apical myectomy allows extensive resection in long-segment and apical hypertrophic cardiomyopathy and to avoid heart transplantation in patients with heart failure.

CENTRAL PICTURE LEGEND: Long-segment subaortic and apical hypertrophic cardiomyopathy.
The technique for transaortic septal myectomy (1) as well as the way to prevent incomplete resection in *classical* septal obstructive hypertrophic cardiomyopathy (HCM) *(2, 3)* have been well described. However, the approach to two other distinct phenotypes of hypertrophic cardiomyopathies, - *long-segment* subaortic variant of HCM with intracavitary obstruction and *apical* variant of HCM (ApHCM) with reduced left ventricular cavity volume is not well defined. The ApHCM is an uncommon type, which may cause severe symptoms due to diastolic dysfunction and has been, historically, treated with heart transplantation. While subaortic obstruction is resected via a transaortic approach, the mid-cavitary obstruction and apical hypertrophy are surgically managed via a trans-ventricular approach, whereas a long-segment subaortic obstruction could be managed with a combination of transaortic and trans-apical approach (Figure 1). With advanced imaging to delineate the exact phenotype (4) and colossal experience, the Mayo Clinic group leads the world in the surgical management of HCM *(3, 5-7)*.

The Mayo Clinic group has previously described their large experience of surgical management of all types of hypertrophic cardiomyopathy in over 3000 patients *(3)*. Moreover, they demonstrated that apical myectomy is beneficial in severely symptomatic patients with ApHCM and advanced heart failure. Long-term survival after myectomy appeared better than for patients listed for heart transplantation *(6)*. In this issue of the *Journal*, the Mayo Clinic group exemplifies the impact of the transventricular apical myectomy in a 22-year-old patient with advanced heart failure referred for heart transplantation *(5)*. The patient avoided heart transplantation and remained asymptomatic after 12 years of postoperative follow-up *(5)*.

Furthermore, in their publications the authors clearly demonstrated that transapical approach is safe and does not negatively impact ventricular function *(5, 6)*.
This is a valuable approach that could be used for various conditions and gives good access to entire ventricular septum (8), subaortic and submitral area (9). Thus, transapical approach can also be used in other pathologies, for example, closure of multiple muscular ventricular septal defects (8) or resection of endocardial fibroelastosis.

REFERENCES


Figure legend

Central Picture. Long-segment subaortic and apical hypertrophic cardiomyopathy.

Figure 1. Resection of long-segmental subaortic muscular obstruction with a combined transaortic-transapical approach.

A standard transaortic approach to septal myectomy (A) in a patient with long-segment subaortic hypertrophy (B) could be facilitated by transapical incision (C) to partially resect hypertrophied septum, so that aortic and mitral valve can be visualised (D). Transventricular approach permits extensive resection, so that an appropriate size of ventricular cavity can be created (E). Visualization of the papillary and additional subaortic resection through aorta can be done, if required (F).