



# Less can sometimes be more: minimally invasive esophagectomy for esophageal cancer

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Esophageal cancer (EC) remains one of the most lethal cancers affecting more than 45k people worldwide and shows trend of increasing incidence the last few decades (1,2). Despite advances in the oncological sphere, both surgical and medical (3,4), EC prognosis remains dismal with 5-year survival rates hardly reaching 20% (5). When resectable, surgery remains the treatment of choice for EC (6).

Minimally invasive esophagectomy (MIE) is gradually gaining popularity since currently almost half of the esophagectomies worldwide are performed laparoscopically or robotically. The effectiveness of MIE is supported by a single randomized control trial and multiple single series cohorts (7). These emerging data clearly support the superiority of MIE or hybrid approaches (HE) over open esophagectomy (OE) in patients with EC. More specifically, data from the Japanese National Clinical Database demonstrated that MIE was non-inferior (superior or equivalent) to OE in terms of postoperative morbidity and surgery-related mortality (8,9). More importantly, hospital case volume was an independent risk factor of mortality, especially in programs with low annual volume (8).

Recently, Mariette *et al.* released the data from a multi-institutional trial comparing HE with OE for patients with EC. The striking finding of the trial was that HE was correlated with lower perioperative major morbidity compared to OE, as well as it was non inferior in terms of long-term survival and oncologic outcomes (10). As a caveat of the trial, we found that almost 50% of the patients enrolled in the trial (102 of 207) were treated at a single center with high volume and well-established experience

on MIE (11). It was also unclear whether the under-representation of lower volume centers, including whether an individual surgeon's experience and technique was factored into consideration.

It is now well-presented in the literature that treating EC in high volume, specialist centers is related with significantly better outcomes compared with lower-volume centers (12). This is of paramount clinical importance since most likely low volume and experience centers most preferably treat their EC patient with OE. That should be taken into consideration when evaluating results from studies including patients from centers with variable expertise and case volume.

These results clearly bring the concept of EC centralization of care in the center of the scientific discussion (13). Even if generating and applying a policy of directing EC patients to specialized centers is complex, due to many issues related to specialty certification, practice habits, access to healthcare, and cost of care delivery, the successful examples from Europe clearly show the way to go in this matter (14).

Minimally invasive surgery has established its position in the therapeutic armamentarium of patients with EC. As in every case of surgical innovation, individual and institutional expertise should be taken into consideration from the level of study design and interpretation of published results to application in clinical practice that will include learning curve, case volume, preoperative planning, surgical expertise and postoperative management including management of complications and resources.

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