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Editorial

Robotic-assisted laparoscopy may not be a minimally invasive therapy

In the previous issue, the review of "Spirit of Minimally Invasive Therapy" has elicited fervid response, prompting further discussion of this topic. As we had mentioned in the journal, minimal access therapy is not equivalent to minimally invasive therapy (MIT).[1] In order to be considered as MIT, it needs to meet the following six criteria: (1) less invasiveness, (2) optimal management, (3) short learning curve, (4) easy accessibility, (5) better surgical outcome, (6) maximal function presentation.

According to a previous study[2] on the long-term outcome of laparoscopic staging surgery (LSS) for endometrial cancer, favorable results were obtained with a 5-year disease-free survival rate of 93.39% and an overall survival rate of 98.05%. For these data, LSS for endometrial cancer seems to be an ideal alternative to laparotomy, with the advantage of minimal invasiveness. Does LSS always qualify as MIT? A study by Walker et al[3] compared laparoscopy with laparotomy for comprehensive surgical staging of uterine cancer on 2616 participants. There were 434 participants (25.8%) randomly assigned to laparoscopy who required conversion to open laparotomy to complete the procedure.[3] Although the participants who underwent this conversion had the same survival rate as those who had undergone laparoscopy surgery, nearly one-fourth of these patients required an additional 20-cm laparotomy incision, not to say excessive blood loss.[1,3] Therefore, LSS, in this case, does not match the goal of MIT.

Treatments without incisions are not always MIT

However, there have been several nonsurgical approaches for gynecologic cancer treatment, which raised the discussion on whether treatments without abdominal incisions are regarded as MIT.

A study reported by Bansal et al[4] compared the outcomes and complication between radical surgery and primary radiation for patients with early-stage cervical cancer in 2009. The multivariate analysis showed that there was a 59% reduction in cancer-specific mortality with the performance of radical surgery and 52% reduction in overall mortality for radiotherapy.[4] Thus, radical hysterectomy was deemed superior to primary radiation because of higher survival rate and decreased morbidity. Despite its advantage (no abdominal incisions required) as well as attendant disadvantages (radiation-related complications and higher morbidity rate), primary radiation, in this case, does not necessarily qualify as MIT. Similarly, data from a longitudinal study of 139 patients with early-stage cervical cancers found an overall survival rate of 92.78% and disease-free survival rate of 91.01% after undergoing a laparoscopic approach in a span of 10 years.[5] These data were similar to those that had been reported and showed a lower morbidity rate than that of the traditional laparotomic approach, which offered an 80–85% 5-year overall survival rate for early cervical cancer.[5] Among patients with early-stage disease, there appeared to be a survival advantage in women who underwent surgery. Given the disparity in treatment-related morbidity, the staging surgery (either laparoscopic or traditional laparotomic surgery with abdominal wound) revealed a better surgical outcome than primary radiotherapy (without abdominal wound), which meets the goal of MIT.

Robotic-assisted laparoscopy may or may not be MIT

Based on the practice of gynecologic surgical techniques, hysterectomy procedures have progressed from conventional approach (open surgery) to smaller surgical incision approach (minimally access surgery).With the advent of robotic technology, the robotic-assisted procedure has emerged as one approach for surgeons to perform minimally invasive surgery in complex cases. However, the question arose as to whether the robotic-assisted approach is considered a spirit of MIT. Compared with laparoscopic surgery, robotic procedures seem to be associated with longer operative time, more abdominal wound, and higher cost.[6] Therefore, robotic approach, in this case, is inconsistent with MIT. As for those surgeons who used to perform traditional open surgeries, and then gradually crossed over and adapted their surgical techniques, thereby resulting in small incisions and less complication, it can be considered that they consistently meet the spirit of MIT. Thus, a comprehensive understanding of its (robotic surgery) value as an MIT for routine hysterectomies remains uncertain; however, it is relatively dependent on the institute itself to identify the level of MIT in their clinical setting. Moreover, robotic surgery is still evolving and resulting less invasiveness.

Conflicts of interest: The author declares no conflict of interest.

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Patient-centered outcome is the core value of MIT

In recent years, more innovative surgical methods have been developed.[7–12] While pursuing less invasive techniques, the surgeons should also look out for the postoperative outcomes and prevent further complications that may impact the result of the treatment—given that the primary objective of surgeons is not only to stay focused on surgical skills, but also to advocate patient-centered favorable outcome measures in the clinical setting.

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