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Editorial

The spirit of minimally invasive therapy

Surgical techniques have progressed slowly since surgeons first performed abdominal hysterectomy in 1863. In 1989, Dr Harry Reich reported the first case of laparoscopic hysterectomy. In 2003, Lee and his colleagues reported on the first laparoscopic radical trachelectomy. In 2012, Lee and his colleagues announced natural orifice adnexal surgery.[1–3] Because of the few small abdominal wounds even in natural orifice (0–1 cm in diameter), patients feel less pain, have shorter hospitalization stay, and recover faster. With such few wounds, it is definitely considered as minimal access surgery. This is the age of minimally access therapy. However, is "minimal access therapy" equal to "minimal invasive therapy (MIT)"? Should traditional laparotomy be abandoned? Or are there still some other advantages? In addition, does MIT mean that the wounds should be limited to several portal sites?

As a matter of fact, minimal access therapy does not mean MIT. In a previous study, Walker et al compared laparoscopy with laparotomy for comprehensive surgical staging of uterine cancer.[4] This prospective randomized study included 2616 participants and the study results suggested that laparoscopic surgical staging is feasible and safe in terms of short-term outcomes, and results in fewer complications and shorter hospital stay. Although both groups in the study had 89.8% 5 years' survival rate, what is worth noting is the conversion rate (25.8%) from laparoscopy to laparotomy in 434 patients. The reasons for conversion were poor exposure (n = 246; 56.7%), requiring laparotomy for resection (n = 69; 15.9%), excessive bleeding (n = 49; 11.3%), equipment failure (n = 10; 2.3%), and other causes (n = 70; 16.1%). Although both procedures have the same survival rate, nearly one fourth of the patients who receive laparoscopy require an additional 20-cm laparotomy wound. This brings us to the question: "Whether it matches the spirit of MIT?" Data[5] from a longitudinal study of 105 patients with a mean follow up 55.3 months showed a 5-year survival rate of 98%. Moreover, none of the patients in our study required conversion from laparoscopy to laparotomy. We found that this procedure is not only a minimal access therapy, but also an MIT.

However, cannot bigger surgical wounds be considered as MIT? In a study by Suh et al,[6] a laparoscope was used to free the left side of the liver and then a mini-laparotomy was performed. The graft was extracted through the site of the hand port device or the mini-laparoscope. There were no open conversions, and the graft was transplanted without any problem in all the cases. None of the donors required transfusion or reoperation, and all were discharged on postoperative days 8–14 with normal liver function. Therefore, the authors concluded that laparoscopy-assisted donor right hepatectomy is technically feasible. From this result, we can understand that even though there was a 5-cm mini-laparotomy wound, it successfully decreased the damage to the patient. More importantly, through a laparoscope, the right liver can be preserved and liver transplantation can be successfully performed. Although it is not a minimal access, it is surely an MIT.

Because it is difficult to distinguish minimal access therapy from MIT, we established the following four criteria for classifying whether a procedure is minimal access therapy or MIT:

- Steep learning curve
- Easy accessibility
- Good surgical outcome
- Less invasiveness

The steep learning curve enables more patients to be benefited from this procedure. Easy access can make the surgery more efficient, decreasing the cost and the risk of anesthesia. Good surgical outcome will attract more doctors and patients to use this procedure. Less invasiveness can reduce the damage for the patient. If a procedure meets all these four criteria, then it is MIT. We should not focus on the minimal access of the patient, but rather on their well-being. This is what we call MIT.

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