

Robotic surgery for gastric cancer

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Robotic surgery has been rapidly adopted to the field of laparoscopic surgery and it has already assumed an important position in the field of general surgery. It provides advanced technologies including superior three-dimensional views, improved dexterity with an internal articulated EndoWrist that allows seven degrees of freedom that truly mimic the movements made by a surgeon's hands, a lack of tremor, and far superior ergonomics compared with conventional laparoscopy.

In gastric cancer surgery, several retrospective reports have shown less blood loss, shorter hospital stay, and better lymph node retrieval for robotic gastrectomy than laparoscopic gastrectomy. However, meta-analyses and a prospective study of robotic gastrectomy did not show any significant differences in postoperative outcomes between robotic and laparoscopic gastrectomy. Moreover, robotic gastrectomy showed longer operation times and higher costs than laparoscopic gastrectomy; these are main disadvantages in all reports. In long-term outcomes, there might be no differences in overall survival or recurrence-free survival between robotic and laparoscopic gastrectomy.

Although robotic gastrectomy looks to have little benefit compared with laparoscopic surgery under the current indication of minimally invasive surgery for gastric cancer, we should focus on the benefits of the robotic system which can facilitate technically demanding operations and maximize the comfort of a surgeon. During robotic surgery, surgeons can operate with ergonomic posture. The advanced technology of the robotic system enables surgeons to provide higher quality surgery to patients and to perform complicated procedures more easily such as advanced gastric cancer surgery, total gastrectomy with or without splenectomy and function-preserving gastrectomy. Robotic systems can facilitate learning more rapidly and safely compared to laparoscopic surgery. Using a robot system, inexperienced surgeons would start the robotic procedures more easily and experienced surgeons would adapt the advanced and complicated procedures for gastric cancer surgery.

The surgical robot has expanded the range of minimally invasive surgery. Currently, robotic gastrectomy is a safe and feasible alternative and is gaining recognition in more difficult and complicated cases. To secure the position of robotic surgery as one of the standard operations, the real benefits with concrete evidence should be investigated.