Optimal minimally invasive surgery for gastric cancer: Robotic versus laparoscopic techniques

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Gastric cancer ranks as the fourth leading cause of cancer-related deaths worldwide and the third in China. The overall five-year survival rate

stands at approximately 20%. Radical gastrectomy has emerged as a prominent approach in the comprehensive treatment of gastric cancer, aiming to achieve a cure. Over time, advancements in clinical research have led to the evolution of gastric cancer surgery, transitioning from open surgery to laparoscopic surgery and subsequently to robotic surgery.

Laparoscopic gastrectomy has gained widespread utilization in clinical practice and has demonstrated favorable therapeutic outcomes. Numerous studies have assessed the safety and feasibility of robotic gastrectomy, further expanding the surgical options available. Nevertheless, the selection between robotic and laparoscopic surgery remains a topic of debate and contention.

In an expert perspective published in *Intelligent Surgery*, a trio of researchers from the Department of General Surgery at the Chinese PLA General Hospital First Medical Center, extensively reviewed the existing research on laparoscopic surgery and robotic surgery. They thoroughly examined the safety aspects of robotic surgery and conducted a comparative analysis between robotic and laparoscopic approaches.

"We identified the superiority of robotic surgery in terms of short-term outcomes, including reduced blood loss volume, drain amylase content, and increased retrieval of lymph nodes," says corresponding author Professor Lin Chen. "Additionally, we highlighted comparable long-term outcomes, extended operation duration, and the higher cost of robotic surgery as significant concerns."

It is worth noting that there remains a scarcity of high-quality research establishing deterministic survival benefits for robotic gastrectomy. Furthermore, the authors emphasized the advantages of 3D/4K displays over traditional 2D displays. They suggested that clinical centers not equipped with robotic surgery capabilities may consider utilizing 3D and

4K laparoscopy as a more favorable alternative.

According to Chen, the advent of robotic surgery and laparoscopic surgery has undeniably propelled the development of gastric cancer surgery. In his view, the selection of appropriate surgical strategies holds greater significance than solely concentrating on enhancing surgical skills. He emphasizes the pursuit of standardized and high-quality surgery as a means to improve survival rates through radical gastrectomy with minimal trauma.

"By appropriately utilizing these technologies, we can achieve better function preservation, reduce postoperative complications, and ultimately enhance patients' quality of life," Chen says.

More information: Shuo Li et al, Minimally invasive surgery for gastric cancer: Robotic or laparoscopic?, *Intelligent Surgery* (2023). DOI: 10.1016/j.isurg.2023.04.001

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