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**Laparoscopic radical gastrectomy
for advanced gastric neoplasms: Quo vadis?**
Лапароскопска радикална гастректомија
код узнапредовалог карцинома желуца: Quo vadis?

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Laparoscopic radical gastrectomy for advanced gastric neoplasms: Quo vadis?

Лапароскопска радикална гастректомија
код узнапредовалог карцинома желуца: Quo vadis?

Reading the article by Bjelovic and all [1], with their short-term results of laparoscopic radical gastrectomy for advanced gastric neoplasms, took my memories 30 years back. Then, as a young surgeon, trying to improve my knowledge and skills in treatment of gastric cancer (GC), I was the guest of Prof Zoran Gerzic, at 1st Surgical Clinic in Belgrade. I knew that Prof Gerzic has accepted total gastrectomy, omentectomy and systematic D2 lymphadenectomy as standard procedure since 1985 [2].

And, since that time, surgery has remained the only curative treatment, either for early or advanced nonmetastatic GC. The concept of adequacy of surgical resection has changed over years. Intention to have better survival led the surgeons to more radical surgery and lymphadenectomy, but high complication and mortality rate without influence to long term survival, especially in West countries, brought us back. At present, definitive agreement has been reached about the resection and lymphadenectomy extension in relation to the position of the tumor and its pattern. After numerous randomized controlled trials and cohort studies in Europe these days the state-of-the-art in curative-intent surgery for GC is gastrectomy with a R0 resection associated with a D2 lymphadenectomy and omentectomy [3]. Now it is clear how far Prof Gerzic was looking in 1985.

New technology improvements with minimally invasive surgical techniques gave us possibility to additional reduction of complication and mortality rates. Pioneer laparoscopic surgeons tried to perform exactly the same laparoscopic gastrectomy (LG) as open gastrectomy (OG), without any idea of performing oncologically better surgery. The main advantage of LG over OG is the small access that incurs less damage to the abdominal wall and hence less pain and faster recovery, which is especially appreciated in patients with extremely poor respiratory function. But there are some constraints of LG compared with OG. Endoscopic views are inferior to human vision because of two-dimensional imaging, the narrow field of endoscopic view and the dissociation between the sensory (visual) and motor (hand) fields. Mechanical constraints in LG include the limited number of degrees of freedom of endoscopic instruments compared to human hand, diminished indirect tactile feedback through long endoscopic instruments and the fulcrum effect through abdominal wall. The limited intra-abdominal space during LG makes the handling of large gastric tumors by long thin instruments very difficult and occasionally traumatic, it is sometimes unavoidable to pinch or stick or at least touch primary tumors by metal graspers, which may cause cancer cell spillage and increase potential risk of peritoneal metastasis. Due to limited access of straight instruments and relative difficulty of suturing, reconstruction methods are often compromised, especially in laparoscopic total gastrectomy

(LTG), with potential worsening of results in long-term. Although technological innovations, like 3D imaging in laparoscopy and robotic surgery, try to overcome the above constraints, the performance in LG is still inherently more difficult than OG.

Since the first laparoscopic gastrectomy for gastric cancer was performed by Japanese surgeons in 1991, laparoscopic distal gastrectomy (LDG) for early gastric cancer has gained wide acceptance for its minimal invasion compared with open distal gastrectomy (ODG). In the 2014 version of the guidelines by the Japan Society for Endoscopic Surgery [4], LDG was recommended for cStage I cancer (rated recommendation B). These decisions reflect the fact that the safety of the laparoscopic approach was proven in a prospective phase II study (JCOG0703) that involved only certified surgeons with sufficient experience and that superiority in terms of short-term outcome has been reported through small-scale randomized trials and meta-analyses. Data regarding the long-term outcome are yet to be available, and results of pivotal phase III studies conducted in Japan (JCOG0912) and Korea (KLASS01) are awaited for.

Since now there was no evidence to widely recommend the laparoscopic approach for more advanced GC, since randomized trials to look at safety and long-term outcome are currently ongoing (JLSSG0901, KLASS02). But there is some good news published recently in a meta-analysis by Wang et al including 17 studies considered a total of 2313 patients (955 undergone to LTG and 1358 to open total gastrectomy-OTG) [5]. LTG had the benefits of less blood loss, less postoperative pain, quicker bowel function recovery, shorter hospital stay and reduced postoperative morbidity, at the price of longer operative time. There were no statistical differences in number of harvested lymph nodes, resection margins, hospital mortality, and long-term outcomes, which indicated the similar oncological safety.

Famous Japanese surgeon Sasako says: "Primary surgery for GC is once in a life occasion for each patient. It's not a computer game in which we can easily reset for next challenge. Before starting surgery I always pray God "Assist me to recognize the nature and spread of the cancer and conform the procedure accordingly and achieve best cure for the patient", since it's the only one chance for him or her" [6].

In GC surgery, quality of the first operation decides the fate of patients, whether they will be cured or not. As surgical perfection cannot be compensated by radiotherapy or chemotherapy in GC, surgeons should perform sufficient surgery, safely and with maximum probability of cure. Now it looks that it is possible to reach the same good result with both techniques, when only certified surgeons are involved with excellent knowledge and a lot of experience. However, surgeons will have to be aware that the learning-curve issue exists in laparoscopic surgery, and the indication for this approach should be decided at discretion of each institution based on the expertise of the staff members that participate in this type of surgery. The priority for surgery for advanced gastric cancer should remain the long-term cure; otherwise laparoscopic surgeons can take the laparoscopic surgery into the wrong direction.

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