

〈Case Report〉

Laparoscopic gastrectomy in the Republic of the Union of Myanmar: my experience

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ABSTRACT In Myanmar, laparoscopic gastrectomy is still uncommon. The first author demonstrated laparoscopic gastrectomy in response to a request from Myanmar surgeons.

The patient was a 62-year-old male with gastric outlet obstruction. He had been unable to eat solid food for a month. Esophagogastroduodenoscopy revealed a type 2 tumor in the antrum, and the biopsy revealed adenocarcinoma. Laparoscopic distal gastrectomy with Roux-en-Y reconstruction was performed by the author with the assistance of Myanmar surgeons thanks to donated devices. The postoperative course was uneventful.

As laparoscopic gastrectomy requires more equipment, is more expensive, requires more time than open surgery, and requires training, there are several obstacles to its widespread adoption in Myanmar.

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Key words : Myanmar, Stomach neoplasms, Laparoscopic gastrectomy

INTRODUCTION

The incidence rate of gastric cancer is high in East Asia¹⁾, and highest in Japan; the numbers of new patients and deaths due to gastric cancer were estimated in 2018 to be 115,546 (9.08/10,000 population) per year and 48,535 (3.82/10,000) per year, respectively²⁾. In contrast, the incidence of gastric cancer in South Central and South East Asia varies. In Myanmar, gastric cancer is the second most common cause of cancer death, after lung cancer³⁾. The number of new patients was estimated in 2018 to be 6,623 (1.23/10,000) per year, and the number of gastric cancer deaths was 5,465 (1.01/10,000) per year.

In Myanmar, laparoscopic gastrectomy is still

uncommon, whereas laparoscopic cholecystectomy and laparoscopic colectomy are performed. The first author visited Myanmar to demonstrate laparoscopic gastrectomy in response to a request from Myanmar surgeons. Here I present my experience.

CASE REPORT

The patient was a 62-year-old male with gastric outlet obstruction. He had been unable to eat solid food for a month. His body weight was 39 kg as parenteral nutrition was not available. His hemoglobin level was 7.1 g/dl at admission. Four units of blood, donated by his acquaintances, were transfused. Esophagogastroduodenoscopy

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revealed a type 2 tumor in the antrum, and the biopsy revealed well-differentiated adenocarcinoma. Enhanced abdominal computed tomography (CT) (1-cm slices) scan revealed wall thickening of the antrum and gastric dilatation. No obvious lymph node enlargement, free fluid, or distant metastasis was seen. The preoperative diagnosis was T3N0M0 Clinical Stage IIB according to the TNM Classification of Malignant Tumours by the Union for the International Cancer Control⁴⁾.

The operation was performed by the first author with the assistance of two Myanmar surgeons. The operating theatre was filled with local doctors and students (Fig. 1). We used reusable four metal ports of 5 mm and 10 mm, and a donated disposable port of 12 mm for a linear stapler. Ultrasonic coagulating shears were available thanks to a donation from a Myanmar company. The clip applier was a reusable one. We performed laparoscopic distal gastrectomy with Roux-en-Y reconstruction. Since small nodules were detected in the lesser omentum, the extent of lymph node dissection was limited to D1+

according to the Japanese gastric cancer guideline⁵⁾. Gastric resection and intracorporeal gastrojejunal anastomosis were performed using five pairs of donated linear staplers. Barbed sutures were not available to close the mesenteric defects. The procedure took nine hours because lymph node No. 8a, which was not detected by the 1cm-slice CT, was strongly adhered to the common hepatic artery, some devices (reusable ports, etc.) were difficult to use, detailed communication in English was sometimes difficult, and there were electrical blackouts. The estimated blood loss was 500 g.

The tumor was classified as T4aN2M0 Pathological Stage IIIB according to the TNM classification.

The postoperative course was uneventful. He started oral intake on the 2nd postoperative day, and was discharged from the hospital on the 8th day.

DISCUSSION

The Republic of the Union of Myanmar, or Myanmar, is a country in Southeast Asia, formerly known as Burma. As of 2018, the population is



Fig. 1. Intraoperative view of the operating theatre. The central figure in the operation field is the first author.

about 53.9 million³). The general state of health care in Myanmar has not been satisfactory. The life expectancy at birth was 66.8 years in Myanmar in 2016, compared with 84.2 years in Japan⁶). The military government spent anywhere from 1.7% to 2.1% of the country's gross domestic product (GDP) on healthcare during 2000 and 2011⁷). In 2015, in congruence with a new democratic government, a series of healthcare reforms were enacted. In 2017, the reformed government spent 4.7% of GDP on healthcare expenditures, but this was still lower than those of Japan (10.9%) and the United States (17.1%)⁷). Although health care is nominally free, the reality is that patients have to pay for medicine and treatment, even at public clinics and hospitals. Public hospitals lack many basic facilities and equipment, and both public and private hospitals are understaffed due to a national shortage of doctors and nurses. The number of medical doctors in Myanmar was 46,110 (8.64/10,000) in 2017, compared with 308,105 (24.12/10,000) in Japan⁸).

This laparoscopic gastrectomy mission was planned by Japan Heart, an international health care organization. Japan Heart delivers medical support to Myanmar, Cambodia, and Laos in Southeast Asia for free⁹). Its activities are conducted by volunteers from Japan. The first author has participated in many surgical missions as a short-term volunteer¹⁰⁻¹²). At Japan Heart, we usually perform surgery for inguinal hernias, hydroceles, thyroid tumors, mammary tumors, skin tumors, etc. The first author contacted a Myanmar surgeon via Japan Heart and was informed that they were of great interest in Japanese laparoscopic gastrectomy. This mission was the first one to perform laparoscopic gastrectomy.

For this mission, I first had to prepare devices. At this institution, some laparoscopic devices, such as scopes, monitors, forceps, and ultrasonic coagulating shears, were available. As patients were charged for stapler cartridges, hand-suturing is

usually performed for anastomoses in cases of open gastrectomy. The leakage rate for esophagojejunal anastomoses is approximately 15% in this institution. Thanks to Japanese and Myanmar corporate donations, linear and circular staplers were available for this mission.

Second, Myanmar surgeons had to recruit suitable patients. The mission was planned for three days. Five patients were recruited from nearby hospitals. All of them were unable to eat solid food. For three of them, we performed open total gastrectomy because tumor invasion to the pancreas or bulky lymph node metastases were suspected. These surgeries were completed uneventfully using donated linear and circular staplers. The remaining one patient with esophagogastric junctional cancer was judged to be unresectable because of extensive swollen lymph nodes. In Japan, stent placement would have enabled him to take oral nutrition, and if effective chemotherapy treatment was available, radical resection would be possible. The standard chemotherapy regimen is fluorouracil and mitomycin C in this institution. Patients with advanced cancers seem to be common in Myanmar, while many cases of early gastric cancer are detected at routine endoscopic check-ups for asymptomatic patients in Japan.

The presented case of laparoscopic gastrectomy was a difficult one with advanced lymph node metastases, and the risk of complications was high due to malnutrition and anemia. Safe surgery was required despite limited medical resources. Fortunately, thanks to some donated devices, the mission was successful. However, as laparoscopic gastrectomy requires more equipment, is more expensive, requires more time than open surgery, and requires training, there are several obstacles to widespread adoption of this procedure in Myanmar. Securing a stable supply of inexpensive stapling devices, effective chemotherapy, stenting, and parenteral nutrition can and would improve the

quality of life and prolong the survival of gastric cancer patients in Myanmar.

In conclusion, the first author demonstrated laparoscopic gastrectomy in Myanmar. It was successfully performed though there were various obstacles. Laparoscopic gastrectomy has become one of the standard procedures for gastric cancer in Japan, but it seems premature to spread in Myanmar due to lack of medical expenditures, devices and staffs, and few early gastric cancers.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

CONSENT FOR PUBLICATION

Written informed consent was obtained from the patient for the publication of this case report.

FUNDING

None.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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