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Two cases of laparoscopic simultaneous resection of colorectal cancer and synchronous liver metastases in elderly patients

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ABSTRACT

INTRODUCTION: The laparoscopic resection of colorectal cancer and laparoscopic liver surgery are widely considered to be safe. Recently, it has been reported that the simultaneous laparoscopic resection of primary colorectal cancer and liver metastasis is technically feasible and safe when it is performed at experienced centers. However, the feasibility of simultaneous laparoscopic procedures for colorectal cancer and synchronous colorectal liver metastases in elderly patients has not been studied sufficiently. In this study, two cases in which elderly patients with colorectal cancer and synchronous liver metastases were treated with simultaneous laparoscopic resection are reported.

PRESENTATION OF CASES: An 83-year-old female was diagnosed with ascending colon cancer and synchronous hepatic metastases. Simultaneous laparoscopic resection of the primary colon cancer and the liver metastasis was performed. Another tiny hepatic metastasis was subsequently detected in the right hepatic lobe. It was treated with hand-assisted radiofrequency ablation (RFA). The total operative time was 470 min, and 340 g of intraoperative blood loss occurred. The other case involved a 78-year-old male who was diagnosed with ascending colon cancer and synchronous hepatic metastasis in the right hepatic lobe. Simultaneous laparoscopic resection of the primary colon tumor and liver metastasis was performed. The total operative time was 471 min, and 240 g of intraoperative blood loss occurred. The postoperative courses of both patients were uneventful.

DISCUSSION AND CONCLUSION: Our results indicate that simultaneous laparoscopic resection of colorectal cancer and synchronous liver metastases is feasible and safe in elderly patients.

1. Introduction

Colorectal cancer (CRC) is the fourth most common type of cancer worldwide [1], and metastases from CRC most frequently occur in the liver. Fourteen to twenty percent of CRC patients develop synchronous liver metastases (SLM), and approximately 25% of CRC patients have metachronous hepatic metastases [2–4]. However, it has been reported that curative resection aids long-term survival in CRC patients with liver metastases [5]. Recently, laparoscopic surgery has been performed as a minimally invasive treatment for various cancers including CRC around the world. Several randomized controlled trials comparing laparoscopic colectomy with open surgery have demonstrated that laparoscopic surgery is a safe and more effective treatment for colon cancer than open surgery [6–9]. In addition, laparoscopic liver surgery is also widely recognized to be safe [10,11]. In 2015, it was reported that the simultaneous laparoscopic resection of CRC and SLM is technically feasible and safe [12]. However, the feasibility of simultaneous laparoscopic procedures for CRC and SLM in cases involving elderly patients has not been studied sufficiently. In this study, two cases in which elderly patients with CRC and SLM were treated with simultaneous laparoscopic resection are reported.

2. Presentation of case 1

An 83-year-old female had an operation for a trigger finger. She presented with right hypochondrial pain during hospitalization. Hepatic tumors were detected during abdominal ultrasonography and computed tomography. The patient had a history of bronchial asthma. A physical examination demonstrated the following characteristics: height, 129.3 cm; weight, 39.4 kg; blood pressure, 124/56 mmHg; and pulse rate, 66 beats/min. Her performance status (PS) was 0. The liver was palpable in the epigastric region. A laboratory examination detected anemia (RBC: $336 \times 10^4/\mu l$,

Abbreviations: CA19-9, carbohydrate antigen 19-9; CEA, carcinoembryonic antigen; CRC, colorectal cancer; Hb, hemoglobin; Ht, hematocrit; PS, performance status; RBC, red blood cell count; RFA, radiofrequency ablation; SLM, synchronous liver metastases.

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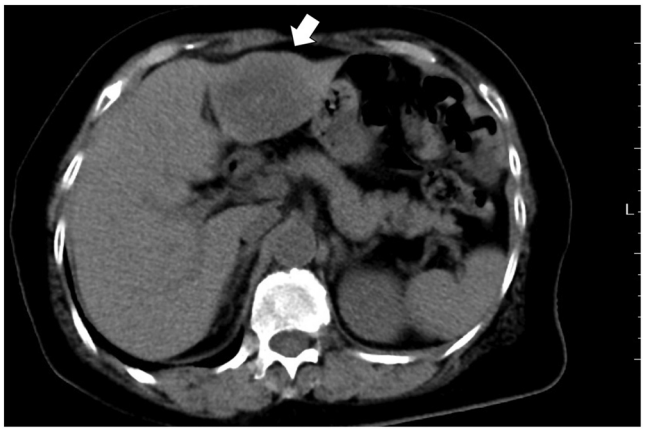

Fig. 1. An abdominal computed tomography scan showed a hepatic metastasis measuring 45 mm in the left hepatic lobe (segments 2/3).

Hb: 9.4 g/dl, Ht: 26.5%). The patient's serum levels of carcinoembryonic antigen (CEA) and carbohydrate antigen 19-9 (CA19-9), tumor markers, were elevated (63 ng/ml and 456 U/ml, respectively). Colonoscopy demonstrated a type 2 tumor in the ascending colon. An abdominal computed tomography scan showed a hepatic metastasis measuring 45 mm in segments 2/3 of the liver (Fig. 1), thickening of the ascending colonic wall and swelling of the regional lymph nodes. An ultrasound examination also detected a hepatic metastasis measuring 17 mm in segment 6 of the liver.

With the patient in the dorsosacral position, pneumoperitoneum was established at 10 mmHg. Trocars were inserted at the locations shown in Fig. 2A. There was no evidence of ascites or peritoneal dissemination. Laparoscopic ileocecal resection combined with D3 radical lymph node dissection was performed before the liver was resected. Laparoscopic ultrasonography revealed the presence of a hepatic metastasis measuring 5 mm in segment 7 of the liver. Laparoscopic left lateral segmentectomy was carried out for the hepatic metastasis in the left lobe of the liver, and partial resection of the liver was conducted for the hepatic metastasis in segment 6 of the liver (Fig. 2B). The remaining hepatic metastasis in segment 7 of the liver was treated with hand-assisted radiofrequency ablation (RFA) because the tumor was tiny, and it was difficult to approach it (Fig. 2B). The total operative time was 470 min, and 340 g of intraoperative blood loss occurred.

The patient's disease was classified as stage IV (pT4apN2apM1a) according to the TNM classification.

Fig. 3. Abdominal MRI detected a hepatic metastasis measuring 10 mm in the right lobe of the liver (segment 6) (arrow).

Her postoperative course was uneventful, and the postoperative hospital stay was 23 days.

3. Presentation of case 2

A 78-year-old male was diagnosed with hypertension, hyperlipidemia, and bronchial asthma at a local hospital. He saw a doctor regularly and was treated with oral drugs. He was subsequently diagnosed with anemia. A physical examination demonstrated the following characteristics: height, 166 cm; weight, 72.8 kg; blood pressure, 115/79 mmHg; and pulse rate, 65 beats/min. His PS was 0. No lymph nodes or tumors were palpable, nor was the liver. A laboratory examination detected anemia (RBC: $384 \times 10^4/\mu l$, Hb: 11.6 g/dl, Ht: 35.1%). The patient's serum CEA and CA19-9 levels were normal. A colonoscopy demonstrated a type 2 tumor in the ascending colon. An abdominal computed tomography scan showed thickening of the ascending colonic wall. Abdominal magnetic resonance imaging (MRI) detected a hepatic metastasis measuring 10 mm in segment 6 of the liver (Fig. 3).

With the patient in the dorsosacral position, pneumoperitoneum was established at 10 mmHg. Trocars were inserted at the locations shown in Fig. 4A. There was no evidence of ascites or peritoneal dissemination. Laparoscopic right colectomy combined with D3 radical lymph node dissection was performed. Then, laparoscopic partial resection of the liver was conducted for the hepatic metastasis in segment 6 of the liver (Fig. 4B). The total operative time was 471 min, and 240 g of intraoperative blood loss occurred.

The patient's disease was classified as stage IV (pT3pN0pM1a) according to the TNM classification.

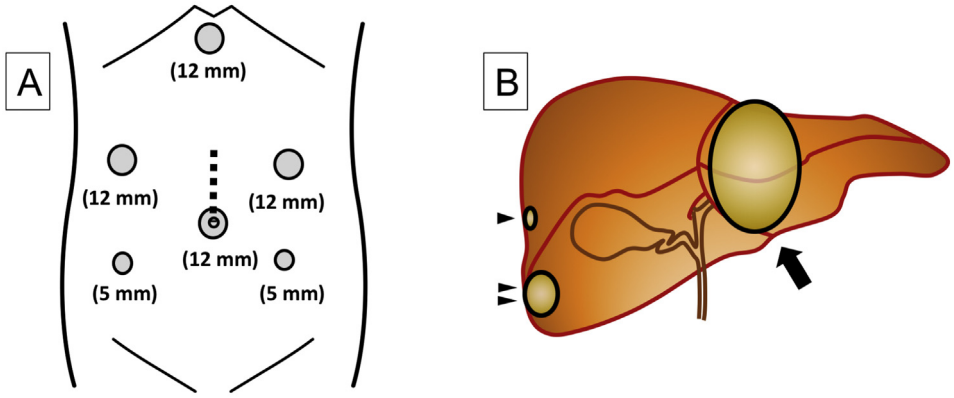

Fig. 2. (A) The surgical trocar sites. The dotted line indicates the incision line used for the hand-assisted laparoscopic procedure, which was 7-cm long. (B) Liver schema. Arrowhead, a tumor measuring 5 mm was found in the right hepatic lobe (segment 7); Double arrowhead, another tumor was detected in the right hepatic lobe (segment 6); Arrow, a third metastatic tumor was observed in the left hepatic lobe (segments 2/3).