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EDITORIAL

The earlier the better?

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In the past, post-gastrectomy patients had to undergo fasting with a nasogastric tube for as long as 5–7 days. Then, patients would be started on a liquid diet and gradually transitioned to a soft diet, upon confirming that the esophagogastrogram detected no sign of leakage. Early oral feeding was avoided because it was believed to increase the risk of postoperative complications.

In the late 1990s, however, a combination of early oral feeding, early mobilization, and sufficient pain control using epidural analgesia reportedly improved the recovery of patients with colorectal cancer [1]. This protocol was further refined and integrated into a fast-track methodology or enhanced recovery after surgery (ERAS) [2], which rapidly spread throughout the world with the widespread acceptance of laparoscopic minimal invasive surgery. Several randomized controlled trials (RCTs) [3, 4] and meta-analyses [5, 6] revealed that ERAS reduced the length of hospital stay and morbidity after colorectal surgery without compromising patient safety. European guidelines strongly recommend postoperative early feeding and perioperative oral nutritional support, such as carbohydrate administration, along with preoperative education, adequate postoperative analgesia, and early mobilization [7, 8].

In gastric cancer, introduction of early oral feeding has been very limited, possibly because of the fear of increasing postoperative complications related to upper gastrointestinal anastomosis. Hirao et al. [9] evaluated the feasibility of early oral feeding in patients with gastric cancer. In that study, patients in the early oral feeding group were started on a liquid diet on the 2nd postoperative day (POD 2) and transitioned to a solid diet on POD 6, and their outcomes were compared with those of control patients undergoing the conventional regimen, i.e., initiation of a solid diet on the POD 10. A significant decrease in the length of postoperative hospital stay and higher daily oral intake of calories on POD 10 were observed in the early oral feeding group. Although this study was the first to demonstrate the feasibility of early oral feeding in patients with gastric cancer, the regimen was far from being "fast track," as the length of postoperative hospital stay was 18.5 days even in the early oral feeding group.

Implementation of various ERAS programs for gastric cancer has been reported since 2010. Grantcharov and Kehlet [10] evaluated the efficacy of an ERAS program in 32 patients with gastric cancer, gastrointestinal stromal tumor (GIST), and benign diseases, who, after undergoing laparoscopic gastrectomy, were started on oral feeding on POD 2 with planned discharge on POD 3. Two major complications were reported, but morbidity was sufficiently low, with no deaths within 30 days. Median length of hospital stay was only 4 days. Yamada et al. [11] also evaluated the feasibility and efficacy of an ERAS program, in which 91 post-gastrectomy patients were placed on oral nutritional supplementation on POD 2 and then transitioned to a soft diet on POD 3. Compared with 100 control patients, those in the ERAS group had a significantly earlier oral intake start day, oral intake recovery, flatus, and defecation, and also had significantly less postoperative pain.

Two RCTs on ERAS have been reported in Korea. The first trial was conducted at Catholic University [12], where 54 patients scheduled to undergo gastrectomy were randomly allocated into control and early feeding groups; the control group was started on a soft diet on POD 4, whereas

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the early feeding group was started on a liquid diet on POD 2 and transitioned to a soft diet on POD 3. The primary endpoint was the duration of hospital stay. The early oral feeding group had a significantly shorter duration of hospital stay and time of gas passage. The second RCT, reported by Yonsei University [13], included 47 patients who had undergone laparoscopic distal gastrectomy. The patients were randomly assigned to the fast-track or conventional pathway group. The fast-track protocol consisted of intensive preoperative education, short duration of fasting, preoperative carbohydrate load, early postoperative ambulation, early feeding, and sufficient pain control. In the fast-track and conventional groups, a liquid diet was started on POD 2 and POD 4, respectively, and a soft diet was started on POD 4 and POD 5, respectively. The possible and actual durations of postoperative hospital stay (primary endpoint) were significantly shorter in the fast-track group than in the conventional group. Moreover, the need for additional pain control was significantly less, and several QOL factors significantly improved, in the fast-track group.

In addition to these studies, the safety and efficacy of ERAS programs have been demonstrated even in gastric cancer surgery, albeit with delayed initiation of oral feeding. In ERAS programs for colorectal cancer, a normal diet is recommended as soon as patients become lucid after surgery. On the contrary, in most gastric cancer studies, a soft diet is started on POD 3 or POD 4 after safety is confirmed with a liquid diet on POD 2. It is speculated that surgeons might have concerns about anastomotic complications resulting from early oral feeding.

Jeong et al. [14] conducted a single-arm prospective trial to evaluate the feasibility of early oral feeding in patients with gastric cancer. In this trial, patients were started on a soft diet with lunch on POD 1, and their outcomes were compared with those of historical controls. In the early oral feeding group, the average diet start day was 1.8 days, and 39 % of patients were able to eat more than two-thirds of provided food on the 1st POD. There was no increase in postoperative complications. These observations led to the conclusion that postoperative oral nutrition is safe and feasible on POD 1 after gastrectomy. This report is meaningful in that the feasibility of early feeding in patients with gastric cancer was demonstrated. Yet, there were several limitations worth noting. First, the median age of this cohort was 59.9 years, which is about 10 years younger than those previously reported in studies targeting Japanese or Western patients. Furthermore, the authors indicated that compliance with early oral feeding was poor in patients aged 70 years or older. Thus, further confirmatory studies in other countries are required. Another major issue is the usefulness of the entire ERAS pathway. Despite the large difference in oral feeding start day, the difference in duration of hospital stay was only 1.5 days, suggesting that early oral feeding may not be the only factor affecting the duration of postoperative hospital stay.

Is it better to start a soft diet on POD 1 in patients with gastric cancer? The answer is both Yes and No. Caution is required when evaluating early oral feeding and ERAS programs. Previous ERAS studies are mostly single-institution studies with a small sample size. A comprehensive evaluation of ERAS programs, including early oral feeding, would require RCTs in a multi-institutional setting with a large sample size. Moreover, appropriate inclusion and exclusion criteria for each program, especially regarding age and comorbidities, are needed in future studies.

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