

Observation of electrogastrography and gastroduodenojejunal motility after abdominal surgery

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Abstract

AIM: The pathophysiological changes and mechanism of postoperative gastrointestinal dysfunction was not yet clear. The aim of this study was to investigate the effects of abdominal surgery on gastrointestinal activity.

METHODS: Twenty patients, 12 male, 8 female with a mean age of 47.5 ± 10.6 (range 31-66), EGG was done in all patients with abdominal surgery in preoperative day, operative day and the first, second and third postoperative day for at least one hour. Gastrointestinal manometry was done in 8 patients in the preoperative day and 1-3 d after operation. Recording and analysis of EGG and manometry were done by computer system.

RESULTS: Compared with preoperative day, percentage of EGG normal wave in the operative day was obviously lower ($P < 0.001$), but bradygastria and tachygastria was remarkably higher ($P < 0.01$). From the first postoperative day, EGG frequency became normal.

The EGG power was low till the third postoperative day. MMC in the upper jejunum was rarely recorded after operation, MMC was most often recorded in the distal part of duodenum. In gastric antrum, duodenum and upper jejunum, the duration of phase III MMC ranged 4-7 min. Four days after operation, contractility power and area of phase III of MMC in the distal duodenum changed obviously ($P < 0.01$), but those of antrum and proximal duodenum had no changes. In gastric antrum, amplitude of MMC phase III was larger than that of other phases.

CONCLUSION: Gastric slow waves were recovered in the first postoperative day, while rapid wave did not recover, therefore, postoperative gastric dysfunction may mainly caused by decrease or absence of fast wave. Gastroduodenojejunal MMC changed greatly after surgery, its number decreased, duration shortened and amplitude decreased, which suggested abnormal MMC was another reason for postoperative gastrointestinal dysfunction. We concluded that EGG and gastric manometry were consistent with each other, they reflected gastrointestinal motility function status, and were non invasive, and easy to operate, these methods should be used widely in clinic and research work.

Key words: Electrogastrography; Gastroduodenojejunal motility; Abdominal surgery

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