

学位論文の要旨

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- 学位論文名 Circumferential Distribution and Clinical Characteristics of Esophageal Cancer in Lower Esophagus: Differences Related to Histological Subtype.
- 発表雑誌名 Esophagus
(巻, 初頁~終頁, 年) (in press)
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論文内容の要旨

INTRODUCTION

Esophageal cancer is the eighth most common type of cancer worldwide and shows highly lethal malignancy. Since the prognosis of patients with an advanced stage of esophageal cancer remains poor, the early detection of neoplastic lesions under effective endoscopic observation is recommended for subjects with high risk. The two main histological subtypes of esophageal cancer are esophageal adenocarcinoma (EAC) and squamous cell carcinoma (ESCC). Recent studies have revealed that EAC is frequently found on the right-anterior wall of the distal esophagus in short-segment Barrett's esophagus (SSBE) patients. The asymmetrical unique distribution of EAC in SSBE is thought to be associated with gastroesophageal reflux in the distal esophagus. However, the circumferential distribution of EAC in long-segment BE (LSBE) remains to be fully evaluated. In addition, the circumferential distribution of ESCC in the lower esophagus, which may be influenced by refluxed gastric contents, has not been evaluated. In the present study, we investigated the circumferential distribution and clinical characteristics of esophageal cancer in the lower esophagus based on histological subtype.

MATERIALS AND METHODS

We retrospectively reviewed the medical records of 150 patients with esophageal cancer diagnosed at our hospital or a related facility between January 2002 and June 2017, including information regarding endoscopic findings, etiology, and clinical parameters. The circumferential locations of esophageal cancer was evaluated based on the face of a clock, with the anterior wall of the esophagus always positioned at 0 o'clock.

For this study, we defined ESCC occurring in the lower thoracic esophagus and abdominal esophagus as ESCC in the lower esophagus. The presence of circular Barrett's mucosa extending longitudinally for 3cm or more was defined as LSBE, while that less than 3cm in length as well as non-circular Barrett's mucosa were defined as SSBE. Furthermore, EAC was divided into 2 groups according to location in relation to the esophagogastric junction (EGJ), and noted as "EAC at the EGJ" and "EAC distant from the EGJ". We defined EAC within 1 cm from the EGJ as EAC at the EGJ, while that occurring away from the EGJ more than 1 cm was defined as EAC distant from the EGJ. The circumferential location of esophageal cancer and background factors were compared between the groups.

The study protocol was approved by the ethics committee of Shimane University School of Medicine and performed in accordance with the principles of the Helsinki Declaration.

RESULTS AND DISCUSSION

We enrolled 150 patients diagnosed with esophageal cancer, of whom 100 had ESCC and 50 had EAC. Of the 100 patients with ESCC, 28 lesions were located in the lower esophagus, though characteristic circumferential distribution was not seen regardless of location. Those showed a greater frequency of smoking and drinking habit and gastric mucosal atrophy as compared to patients with EAC. While, patients with EAC showed a greater frequency of esophageal hiatal hernia as compared to those with ESCC in the lower esophagus.

Consistent with the previous reports, EAC in SSBE (n=41) was frequently located on the right-anterior wall, with 53% in the 0-3 o'clock quadrant. Likewise, EAC in LSBE (n=9) was frequently found at this location (41%). There was no significant difference regarding circumferential predilection between EAC in SSBE and LSBE. As for the circumferential distribution in relation to the EGJ, EAC at the EGJ (n=44) was frequently located on the right-anterior wall (55%), regardless of BE length. In contrast, EAC distant from the EGJ (n=6) showed no characteristic circumferential distribution, and the frequency of the lesion located on the right-anterior wall (34%) was significantly lower than EAC at the EGJ ($P < 0.05$).

The present results are the first to show that the circumferential distribution of EAC in LSBE is dependent on distance from the EGJ. We previously investigated the asymmetrical circumferential distribution of various esophagogastric lesions, including EAC arising from SSBE and reflux esophagitis cases, and reported a predominant right-anterior localization of

those lesions due to asymmetrical gastroesophageal acid reflux along with the functional structure of the lower esophageal sphincter. Consistently, EAC at the EGJ in both SSBE and LSBE patients was mainly located on the right-anterior wall of the esophagus, while EAC distant from the EGJ showed no characteristic circumferential distribution. Refluxed gastric contents are expected to be more uniformly distributed throughout all circumferential directions in the upper portion of the esophagus. Therefore, we consider that the distribution of dysplastic lesions in LSBE becomes more random with increasing distance from the EGJ.

CONCLUSION

Our results showed no circumferential predilection for ESCC in the lower esophagus, suggesting that development of this type of lesion may be less affected by gastroesophageal reflux. In addition, EAC at the EGJ was frequently found on the right-anterior wall irrespective of BE length.