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Esophageal Intramural Pseudodiverticulosis with Esophageal Cancer Improved by Target Rotation Irradiation: Case report

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Introduction

We report a case of a patient with extensive esophageal cancer and esophageal intramural pseudodiverticulosis which was disappeared following radiation therapy. In this case, whole esophagus was involved with cancer. Therefore radiation was applied to the entire esophagus by the target rotation method. This is the first report to the best of our knowledge that intramural pseudodiverticulosis with esophageal cancer was disappeared by radiation therapy.

Case report

A 78 years-old Japanese woman admitted with swallowing disturbance since a few months ago. She had no other major medical problem. Barium swallow revealed narrowing of cervical esophagus and multiple small outpouchings in the entire esophagus (Fig. 1 L side). Panendoscopy demonstrated small elevated leison in the cervical esophagus suggestive of esophageal cancer (Fig. 2). Biopsy specimen revealed squamous cell carcinoma in this lesion. After Lugol’s solution was applied to esophageal mucosa, multiple uncolored areas were appeared in entire esophagus. Biopsy specimen from these uncolored area revealed also squamous cell carcinoma.

Cetrotititation was performed by using CDDP and 5-FU. But intramural pseudodiverticula and narrowing were not improved after two courses of chemotherapy. One month after chemotherapy radiation therapy were performed by Linac system with multi leaf collimator using 10MV X-ray. Since esophageal cancer was spreaded to the entire esophagus and this patient was elderly person, irradiation technique of target rotation method was selected (Fig. 3). 60Gy was given in 30fraction/50days (2weeks split course). After irradiation, barium swallow showed improvement of narrowing of the esophagus and no intramural pseudodiverticula (Fig. 1 rtside). Biopsy specimen revealed no carcinoma cells. 6 months later, this patient has remained free of esophageal cancer and intramural pseudodiverticulosis.

Discussion

Since esophageal intramural pseudodiverticulosis (EPD) was first reported by Mendel in 1950 as an abnormality which had radiological
findings similar to those of Rokitansky-Ashoff sinuses of the gallbladder, some cases have been documented especially in Europe and America. Levine1 detected this abnormality in 0.15% of 1,350 cases of barium swallow. EIP, however, is very rare condition in Japan3, as there was a few case reports.

Unlike the usual diverticulum, the dilated esophageal glands were not covered with a muscular layer of mucosa, therefore this disease was designated pseudodiverticulosis. Although the causes of dilated esophageal glands remains unknown, two hypotheses have been proposed4. One suggests that the excretory duct of an esophageal gland is filled with, or obstructed by, ablated esophageal epithelia or some inflammatory substances, which then results in dilatation. The other theory suggests that, orifice of the excretory duct is compressed and contracted by fibrosis or secondary to chronic esphagitis. These hypotheses are supported by the fact of high incidences of intramural pseudodiverticulosis in patients with reflux esophagitis, and diabetes-related candidiasis, or alcoholics. Particularly, intramural pseudodiverticulosis is frequently complicated by esophageal hiatal hernia, and Che et al6 noticed the hernia in 18 of 45 patients with intramural pseudodiverticulosis.

On the other hand, this disease is also associated with herpete esophagitis, esophageal carcinoma, post-irradiation, Wegener's granulomatosis, steroid administration, esophageal web and AIDS7.

Radiological findings of barium meal study were characteristic enough to lead to definite diagnosis. The barium study reveals many microdiverticulum-like outpouchings 1 to 3 mm in diameter in the esophageal wall. Stenoses are observed in almost all cases, ranged from several centimeters to one-third of length of the esophagus. Many of the diverticulum-like outpouchings were segmental, and most frequently occurred in the lower esophagus2. In order to the dilated esophageal glands are filled with viscous mucus, EIP were shown on esopagogram after several or as many as 20 times or more barium swallowings in some cases3. This fact suggests that some cases may possibly be failed to be defined on the conventional barium meal study.

Endoscopic examination of EIP shows acute or chronic esophagitis with stenosis in the corresponding region of pseudodiverticulum in 50-60% of the cases. Clinicians should understand that some patients have no endoscopic abnormalities. Bruehlmann6 reported no anomalies in 5 of the 46 patients (13%) with intramural pseudodiverticulosis who were undergone endoscopy. Biopsy also reveals acute or chronic esophagitis in many of the cases, and it hardly demonstrated dilated gland5. Biopsy also reveals inflammatory change and fibrosis.

This case showed intramural pseudodiverticulum of the entire esophagus with diffuse intramural spreading from cervical esophageal cancer. In this case intramural pseudodiverticula were disappeared completely by external radiation therapy. This fact is suggestive of esophageal glands being obstructed by intramural spreading of esophageal cancer.

References