The Journal of Laryngology and Otology
June 1997, Vol. **111**, pp. 575–577

An unusual case of laryngeal carcinoma metastasizing to the small intestine

Toshio Yoshihara, Yukie Yamamura

Abstract
An unusual case of laryngeal carcinoma metastasizing to the small intestine is reported. The patient was admitted to our hospital due to hoarseness, sore throat and dyspnoea. Pathological examination on the laryngeal mass revealed it to be moderately differentiated squamous cell carcinoma, staged as $T_4N_0M_0$. A total laryngectomy and right modified neck dissection were performed. Over two years after the operation a small intestinal tumour was found, with a resultant resection of the ileum and sigmoid colon. An infiltration of the cell nests of squamous cell carcinoma were present at the submucosal regions of the ileum. These findings indicated that the laryngeal cancer had already metastasized to the small intestine at the time of the initial treatment.

Key words: Carcinoma, squamous cell; Laryngeal neoplasms; Neoplasm metastasis; Ileum

Introduction

The most frequent metastatic site for squamous cell carcinoma of the head and neck is the lung, followed by mediastinal nodes, liver and bone (Kotwell *et al.*, 1987), while metastases to the gastrointestinal tract are rare. Because of its rarity, there have been very few reports of metastatic carcinoma of the small intestine from the head and neck region. It has been reported that the primary tumours which metastasize most frequently to the small intestine are cervix uteri, ovary, lung, testis and malignant melanoma (deCastro *et al.*, 1957; Farmer and Hawk, 1964). In this report we present an unusual case of small intestine metastasis from squamous cell carcinoma of the larynx.

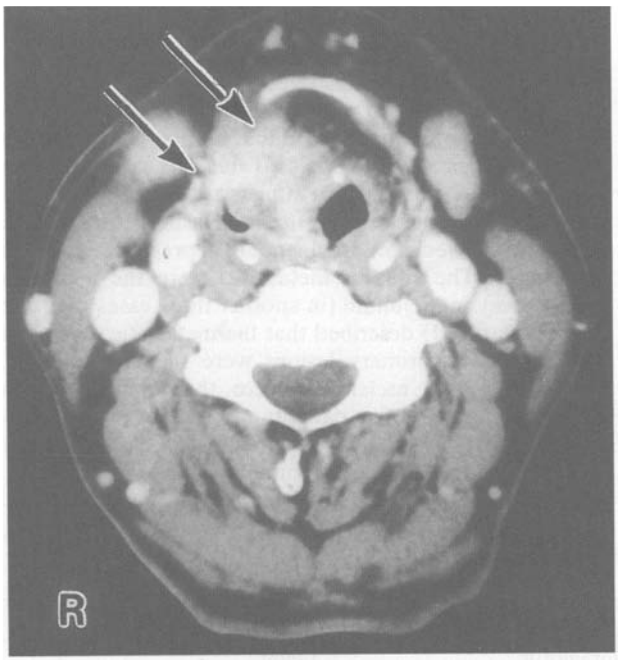

Fig. 1
Pre-operative CT scan showing tumour mass in the larynx (arrows).

Case report

The patient was a 71-year-old man who developed hoarseness, sore throat and dyspnoea in January of 1993. He was admitted to our department on March 11, 1993. Endoscopic examination and computed tomography (CT) scan of the larynx showed an irregular mass at the right false vocal fold, arytenoid area and vocal fold (Figure 1). The right vocal fold was completely fixed. The neck was free of lymphadenopathy. Chest X-ray was normal. Endoscopic biopsy revealed it to be moderately differentiated squamous cell carcinoma (Figure 2), staged as $T_4N_0M_0$ (supraglottic type). On March 18, 1993 a total laryngectomy and right modified neck dissection were

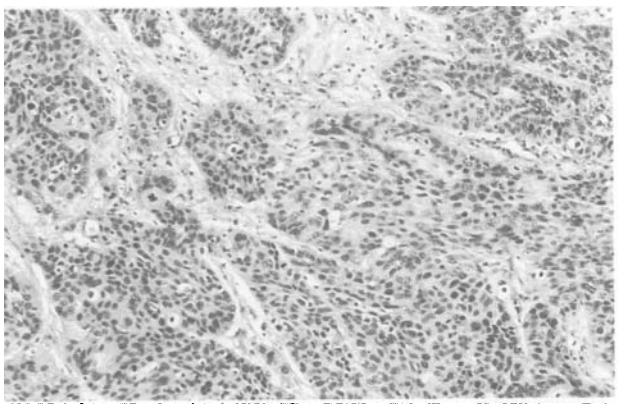

Fig. 2
Laryngeal tumour histology, showing moderately differentiated squamous cell carcinoma. (H & E; × 180).

From the Department of Otolaryngology, Tokyo Women's Medical College, 8–1 Kawada-cho, Shinjuku-ku, Tokyo 162, Japan.
Accepted for publication: 25 February 1997.

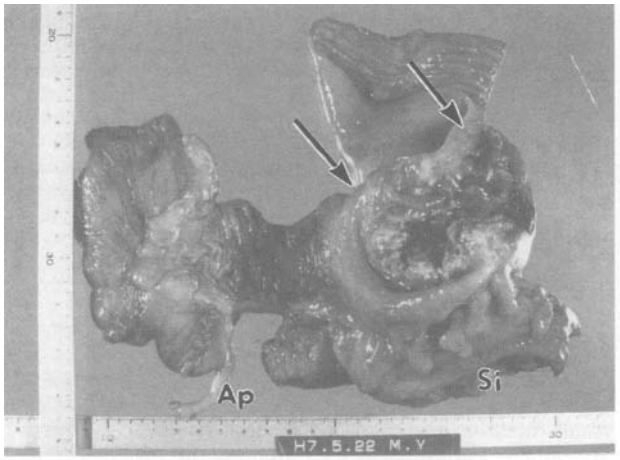

FIG. 3

Metastatic lesions of the small intestine (arrows). Sigmoid colon (Si) and appendix (Ap).

performed. No lymph node metastasis was found (0/18). Post-operative chemotherapy (one course of CBDCA 300 mg/m^2 and peplomycin 5 mg/day, five days) was administered. Although the post-operative course had been good, he was admitted to the Department of Surgery on May 13, 1995 due to acute abdominal pain. Several examinations revealed a small intestinal tumour, and a resection of the ileum and sigmoid colon was performed on May 22, 1995 (Figure 3). The specimen demonstrated an infiltration of the cell nests of squamous cell carcinoma. The tumour cells were present at the submucosal regions (Figure 4). The liver was free of metastases at the time of laparotomy and the chest was clear when a repeat X-ray was performed. Six months later the abdominal tumour recurred. The patient died on February 26, 1996. Neither recurrence in the neck region nor distant metastases was seen except in the small intestine.

Discussion

Metastasis to the gastrointestinal tract from head and neck cancer is unusual. Furthermore, small intestine metastasis is extremely rare. In cases of small intestine metastases, the most frequent sites of primary lesions are the cervix uteri and colon (deCastro *et al.*, 1957; Farmer and Hawk, 1964) which are the adjacent organs to the small intestine. The majority of patients with small intestine metastasis may present with abdominal pain, vomiting and weight loss. When the present case was admitted to the department of Surgery, he also complained of acute abdominal pain indicating obstruction of the small intestine. Before examination of the abdomen, it was difficult to relate metastasis of the gastrointestinal tract from laryngeal cancer to the abdominal signs because he had a long history of chronic constipation.

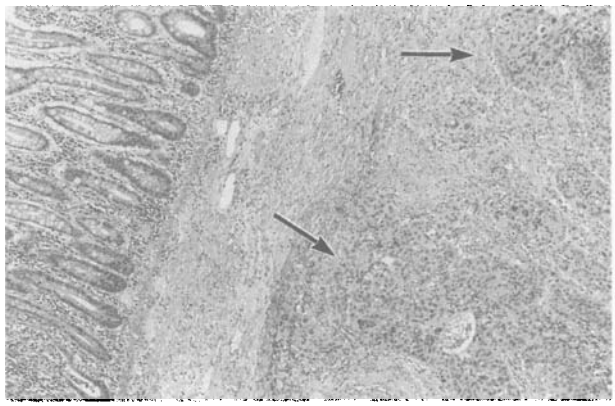

FIG. 4

Histology from small intestine metastasis, showing tumour cell infiltration at the submucosal regions (arrows). (H & E; × 70).

It has been reported that the incidence of distant metastases in squamous cell carcinoma of the head and neck range from 11 to 23 per cent (Arons and Smith, 1961; Rubenfeld *et al.*, 1962; Merino *et al.*, 1977; Vikram *et al.*, 1984) and the lung was the most common site (Kotwell *et al.*, 1987). Kotwell *et al.*, (1987) reviewed their 832 patients with head and neck squamous cell cancer, and described that the most frequent primary sites of distant metastases were the hypopharynx and base of tongue. Papac (1984) reported that 74 per cent had T_3 to T_4 lesions in 169 cases of head and neck cancer developing distant metastases, and the larynx and hypopharynx had the highest incidence of distant metastases. They also described that the supraglottic lesions showed a high potential for distant metastases in all cases of laryngeal cancer. Several authors (Probert *et al.*, 1974; Merino *et al.*, 1977; Papac, 1984) stated that true vocal fold lesions rarely developed distant metastases in contrast to supraglottic cancer.

There have been only a few reports on small intestine metastases from laryngeal cancer (Bresler *et al.*, 1988; Francois *et al.*, 1989; Hamdan *et al.*, 1991; Petiot *et al.*, 1991; Airoldi *et al.*, 1993; González *et al.*, 1994). In our case, laryngeal cancer was considered to be the primary lesion by pathologists due to the fact that no cancerous lesions were found in other organs and that both resected tumours were pathologically the same. In Table I six cases which we could review in past literature are summarized for comparison of the primary and metastatic sites. These cases also showed a predominance of supraglottic cancer in metastases. The sites of metastases were the ileum (in three cases) and jejunum (in another three cases). Farmer and Hawk (1964) described that the metastatic sites of 14 cases of which primary lesions were the cervix, colon, ovary, lung and melanoma were the ileum in seven patients, jejunum in five patients and both in two patients. There seems no tendency to metastatic sites, ileum or jejunum, of the secondary tumours of the small intestine. Although the incidence of metastasis to the gastrointestinal

TABLE I

SMALL INTESTINE METASTASIS FROM LARYNGEAL CARCINOMA

Author	Year	Primary site	Metastatic site
Bresler *et al.*	1988	Supraglottic	Ileum
Francois *et al.*	1989	?	Ileum
Hamdan *et al.*	1991	?	Jeunum
Petiot *et al.*	1991	Supraglottic	Duodenum, jejunum
Airoldi *et al.*	1993	Supraglottic	Ileum
González *et al.*	1994	Vocal fold	Jejunum
Present case	1996	Supraglottic	Ileum

https://doi.org/10.1017/S0022215100137958 Published online by Cambridge University Press

tract from laryngeal cancer is low, the examination of the abdomen in patients with T_3 to T_4 lesions should be kept in mind.

References

Airoldi, M., Gabriele, P., Succo, G., Valente, G., Brando, V. (1993) Small bowl metastasis from squamous cell carcinoma of the larynx. A case report. *Tumori* **79:** 286–287.

Arons, M. S., Smith, R. R. (1961) Distant metastases and local recurrence in head and neck cancer. *Annals of Surgery* **154:** 235–240.

Bresler, L., Corroy, J. S., Bruunet, A., Vidrequin, A., Aymard, B., Boissel, P., Grosdidier, J. (1988) Métastases iléales d'un carcinome épidermoïde de l'épiglotte. Une observation. *Presse Medicale* **17:** 536–537.

deCastro, C. A., Dockerty, M. B., Mayo, C. W. (1957) Metastatic tumours of the small intestines. *Surgery, Gynecology and Obstetrics* **105:** 159–165.

Farmer, R. G., Hawk, W. A. (1964) Metastatic tumours of the small bowel. *Gastroenterology* **47:** 496–504.

Francois, E., Santini, J., Macchiavello, J. C., Ferrero, J. M., Monticelli, J., Serra, C., Schneider, M. (1989) Métastases iléale d'un carcinome épidermoïde révélée par une hémorragie digestive. *Presse Medicale* **18:** 1209.

González, C. I., Garriga, S. J. L., Barbón, R. S., Girón, S. L., López, T. A., Alvarez, Y. V. A. (1994) Perforación yeyunal como manifestación metastásica inicial de carcinoma laríngeo. *Revista Espanola de Enfermedades Digestivas* **85:** 41–44.

Hamdan, M., Brunet, P. H., Wagner, J. (1991) Perforation jéjunale métastatique d'un cancer du larynx. *Journal de Chirurgie (Paris)* **128:** 332.

Kotwell, C., Sako, K., Razack, M. S., Rao, Uma, Bakamjian, V., Shedd, D. P. (1987) Metastatic patterns in squamous cell cancer of the head and neck. *American Journal of Surgery* **154:** 439–442.

Merino, O. R., Lindberg, R. D., Fletcher, G. H. (1977) An analysis of distant metastases from squamous cell carcinoma of the upper respiratory and digestive tracts. *Cancer* **40;** 145–151.

Papac, R. J. (1984) Distant metastases from head and neck cancer. *Cancer* **53:** 342–345.

Petiot, J. M., Lehur, P. A., Girard, J. Y., Cuilliere, P., Borgne, L. J. (1991) Double métastase duodénale et jéjunale d'un carcinome épidermoïde du larynx révélée par une double perforation. *Gastroenterologie Clinique et Biologique* **15:** 370–371.

Probert, J. C., Thompson, R. W., Bagshaw, M. A. (1974) Patterns of spread of distant metastases in head and neck cancer. *Cancer* **33:** 127–133.

Rubenfeld, S., Kaplan, G., Holder, A. A. (1962) Distant metastases from head and neck cancer. *American Journal of Roentgenology* **87:** 441–448.

Vikram, B., Strong, E. W., Shah, J. P., Spiro, R. (1984) Failure at distant sites following multimodality treatment for advanced head and neck cancer. *Head and Neck Cancer* **6:** 730–733.

Address for correspondence:
Toshio Yoshihara, M.D.,
Department of Otolaryngology,
Tokyo Women's Medical College,
8–1 Kawada-cho, Shinjuku-ku,
Tokyo 162,
Japan.

Fax: 03–5269–7351