

Antemortem Diagnosis of Cardiac Metastasis Available in a Patient with Primary Tongue Carcinoma

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We report a rare case of a patient suffering from cardiac metastasis with tongue carcinoma. A 71-year-old Japanese man was admitted to our clinic at Tottori University Hospital in June 1997. We diagnosed his disease as stage T2 N2 M0 squamous cell carcinoma of the tongue, and performed a partial resection of the tongue and a right-side radical neck dissection. The postoperative course was uneventful, and follow-up was continued. In March 1998, he visited us complaining of anorexia and constipation. On electrocardiogram (ECG), ST waves were elevated in leads I, aVL, V5 and V6, and depressed in lead aVF. Cardiac echogram revealed a shadow-like tumor in the lower portion at the lateral wall of the left ventricle. He had a sudden and serious arrhythmic attack on 12 March, and he died of cardiac insufficiency by arrhythmia on 22 March 1998. An autopsy showed that a cardiac tumor had invaded mainly into the anterior and lateral wall of the left ventricle, and had reached the septum. Microscopically, the tongue carcinoma had invaded the myocardium. With the uncommon ECG and cardiac-echographic findings, we could clinically make an antemortem diagnosis for the present patient. The paucity of antemortem diagnosis of cardiac metastasis in the literature emphasizes the uniqueness.

Key words: cardiac echography; cardiac metastasis; tongue carcinoma

Cardiac metastasis with tongue carcinoma is comparatively rare. Most reports on cardiac metastases have presented cases of invasion into the right atrium or ventricle, and metastasis to the left ventricle is quite uncommon. It is difficult to find a metastatic cardiac tumor in antemortem examinations because there are no characteristic findings in clinic or on electrocardiogram (ECG). The disease has been discovered at autopsy in most cases. When an antemortem diagnosis of cardiac metastasis of a malignant tumor is made, it is often difficult to apply a curative therapy because most cardiac metastases are spread by a systematic route, causing a critical status in general. But, if the cardiac metastasis is discovered early by ECG or cardiac echogram, apothanasia with chemotherapy or radiation therapy would be possible. There-

fore, antemortem diagnosis of cardiac metastasis is significant. We report a rare case of a patient with tongue carcinoma with cardiac metastasis in the left ventricle, in which antemortem diagnosis was available by ECG and echocardiography.

Patient Report

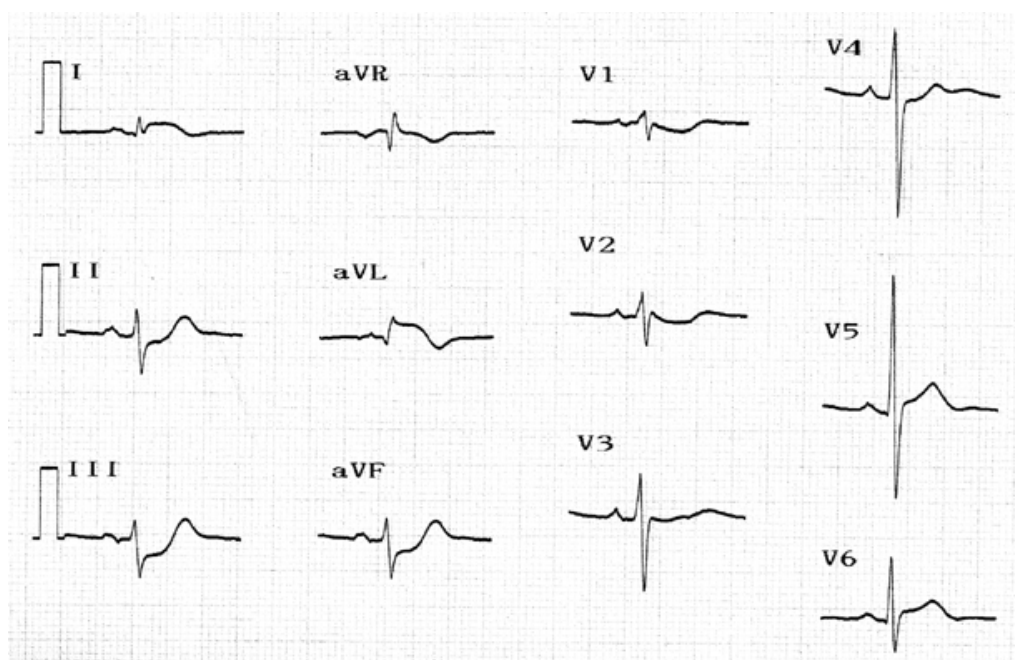
In June 1997, a 71-year-old Japanese man was admitted to our hospital with a swallowing disturbance due to an oral pain which had lasted for 2 months. In the right margin of the tongue, a tumor 25 mm in diameter was found, which we highly suspected to be tongue carcinoma. Two elastic hard masses 15 mm in diameter were identified by palpation in the right side of the

Table 1. Laboratory findings upon second admission

Laboratory findings	Measured values	Normal values
White blood cell count ($\times 10^3/\text{mm}^3$)	18.6	3.3 – 8.8
Red blood cell count ($\times 10^6/\text{mm}^3$)	3.20	4.00 – 5.70
Hemoglobin (g/dL)	10.6	12.0 – 17.0
Platelet count ($\times 10^3/\text{mm}^3$)	476	125 – 343
Total protein (g/dL)	7.1	6.0 – 8.0
Albumin (g/dL)	3.1	3.5 – 5.0
Total bilirubin (mg/dL)	1.0	0.2 – 1.2
Serum creatinine (mg/dL)	0.9	0.7 – 1.7
Serum sodium (mEq/L)	140	137 – 147
Serum potassium (mEq/L)	3.2	3.6 – 5.0
Serum calcium (mEq/L)	11.8	8.6 – 11.0
C-reacting protein (mEq/L, milliequivalent/liter)	15.21	< 0.2

neck. Pathology of the biopsy specimen of the tongue tumor revealed a low or moderately differentiated squamous cell carcinoma. By echography and computed tomography (CT), the 2 neck masses were suspected of being metastatic from the tongue carcinoma. Distant metastases into the chest, abdomen, pelvic cavity and limbs were not identified by CT and gadolinium scintigraphy. Diagnosed as stage T2 N2 M0 tongue

carcinoma, radiation therapy was applied by irradiating a 30-Gy dose, and then a partial resection of the tongue and a right-side radical neck dissection were performed in August 1997. Histological examination of the right margin of the tongue showed no cancer cells. The post-operative course was uneventful, and follow-up was carried out through periodical ambulatory examinations.

**Fig.1.** ECGs showing ST elevations in leads I, aVL, V5 and V6, and a ST depression in lead aVF.