A Case of Successful Treatment with Trastuzumab for Advanced Salivary Duct Carcinoma in the Accessory Parotid Gland with Multiple Bone Metastasis

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Salivary duct carcinoma (SDC) is a highly malignant salivary gland tumor. Because of its low incidence, it has been impossible to standardize the optimal treatment strategies for SDC including adjuvant systemic therapy. Recently, it has been reported that SDC resembles mammary ductal carcinoma (DC). Over-expression of human epidermal growth factor type-2 (HER-2) protein has been shown in SDC as in mammary DC. We report herein on a successful treatment experience for a patient with advanced SDC using trastuzumab, a humanized monoclonal antibody.

A 56-year-old male was hospitalized with lumbalgia. Radiological examination indicated a tumor in the right accessory parotid gland and multiple metastatic tumors in the left skull base, ribs, lumbar vertebrae and sacral bone. Incisional biopsy of the right accessory parotid gland revealed SDC. Immunostaining for HER-2 was highly positive. He underwent concurrent radiation- and chemoradiotherapy (intensity-modulated radiotherapy [IMRT 60 Gy], nedaplatin and docetaxel), which resulted in a poor response. Thereafter, trastuzumab was administered. He obtained a significantly effective response after 8 courses of treatment for the metastatic lesions.

In contrast to previous reports of a poor response to chemotherapy and poor survival rate of patients with SDC, our patient demonstrated that trastuzumab was a highly effective modality as a therapeutic choice for SDC.

Keywords : trastuzumab, salivary duct carcinoma, accessory parotid gland, HER-2 protein

References

- 1) Kleinsasser O, Klein HJ and Hübner G : Speicheldrüsenkarzinome. Eine den Milchgangcarcinomen der Brustdrüse analoge Gruppe von Speicheldrüsentumoren. Arch Klin Exp Ohren Nasen Kehlkopfheilkd **192**: 100–115, 1968.
- 2) Slamon DJ, Clark GM, Worg SG, et al. : Human breast cancer: correlation of relapse and survival with amplification of the HER-2/neu oncogene. Science **235**: 177–182, 1987.
- 3) Skálová A, Stárek I, Vanecek T, et al. : Expression of HER-2/neu gene and protein in salivary duct carcinomas of parotid gland as revealed by fluorescence in-situ hybridization and immunohistochemistry. Histopathology **42**: 348–356, 2003.
- 4) Lewis JE, McKinney BC, Weiland LH, et al. : Salivary duct carcinoma. Clinicopathologic and immunohistochemical review of 26 cases. Cancer **77**: 223–230, 1996.
- 5) Delgado R, Vuitch F and Albores-Saavedra J : Salivary duct carcinoma. Cancer **72**: 1503–1512, 1993.
- 6) Guzzo M, Di Palma S, Grandi C, et al. : Salivary duct carcinoma: clinical characteristics and treatment strategies. Head Neck **19**: 126–133, 1997.
- 7) Jaehne M, Roeser K, Jaekel T, et al. : Clinical and immunohistologic typing of salivary duct carcinoma: a report of 50 cases. Cancer **103**: 2526–2533, 2005.
- 8) Luna MA, Batsakis JG, Ordóñez NG, et al. : Salivary gland adenocarcinomas: a clinicopathologic analysis of three distinctive types. Semin Diagn Pathol **4**: 117–135, 1987.
- 9) Frommer J : The human accessory parotid gland: its incidence, nature, and significance. Oral Surg Oral Med Oral Pathol **43**: 671–676, 1977.
- 10) Stenner M, Preuss SF, Hüttenbrink KB, et al. : Accessory parotid gland lesions: case report and review of literature. Eur Arch Otorhinolaryngol **265**: 1135–1138, 2008.
- 11) 高橋光明, 高原 幹, 松井玲子, 他 : 副耳下腺腫瘍に対する手術法. 頭頸部外 **7**: 1–6, 1997.

- 12) 篠 美紀, 大氣誠道, 大池信之, 他 : 頬部に発生した粘表皮癌の1症例. 耳鼻・頭頸外科 **79**: 861–865, 2007.
- 13) Kurata N, Noguchi Y, Sugimoto T, et al. : Accessory parotid gland pleomorphic adenoma: a case report. Pract Otol (Kyoto) **102**: 121–125, 2009.
- 14) Johnson FE and Spiro RH : Tumors arising in accessory parotid tissue. Am J Surg **138**: 576–578, 1979.
- 15) 小野友道, 山本伸二, 荒尾龍喜, 他 : 唾液腺導管癌—Comedo Carcinoma—の1例. 日皮病理組織会誌 **6**: 74–77, 1990.
- 16) Yoshimura K, Imanaka M, Atago T, et al. : Salivary duct carcinoma in the accessory parotid gland; a case report. Pract Otol (Kyoto) **95**: 69–74, 2002.
- 17) 白土秀樹 : 比較的まれな腫瘍—副耳下腺腫瘍について—耳鼻と臨 **58**: 96–100, 2012.
- 18) 豊岡辰明, 内藤慎二 : HER-2 蛋白を発現した唾液導管癌 (Salivary duct carcinoma) の1例. 医療 **58**: 109–113, 2004.
- 19) Glisson B, Colevas AD, Haddad R, et al. : HER2 expression in salivary gland carcinomas: dependence on histological subtype. Clin Cancer Res **10**: 944–946, 2004.
- 20) 鈴木崇祥, 加納里志, 折館伸彦, 他 : 唾液導管癌における

HER2 の発現解析. 頭頸部外 **21**: 195–201, 2011.

- 21) Slamon DJ, Leyland-Jones B, Shak S, et al. : Use of chemotherapy plus a monoclonal antibody against HER2 for metastatic breast cancer that overexpresses HER2. N Engl J Med **344**: 783–792, 2001.
- 22) Seidman A, Hudis C, Pierri MK, et al. : Cardiac dysfunction in the trastuzumab clinical trials experience. J Clin Oncol **20**: 1215–1221, 2002.
- 23) Prat A, Parera M, Reyes V, et al. : Successful treatment of pulmonary metastatic salivary ductal carcinoma with trastuzumab-based therapy. Head Neck **30**: 680–683, 2008.
- 24) Kaidar-Person O, Billan S and Kuten A : Targeted therapy with trastuzumab for advanced salivary ductal carcinoma: case report and literature review. Med Oncol **29**: 704–706, 2012.
- 25) Haddad R, Colevas AD, Krane JF, et al. : Herceptin in patients with advanced or metastatic salivary gland carcinomas. A phase II study. Oral Oncol **39**: 724–727, 2003.
- 26) 蓮尾麻里, 南野雅之, 八木正夫, 他 : HER-2 蛋白を発現した Salivary Duct Carcinoma におけるトラスツマブ使用の検討. 頭頸部癌 **32**: 68–71, 2006.

Magnetic resonance imaging (MRI) findings in the head at the first visit

MRI demonstrated a tumor of 18 mm in diameter in the area anterior to the right ear as well as a tumor of 27 mm in diameter in the left side of the skull base. Both lesions demonstrated low intensity in T1-weighted images (a), high intensity in T2-weighted images (b), and marginal enhancement in Gd-enhanced T1-weighted images (c).

FDG-PET findings at the first visit

FDG accumulation was observed in multiple sites over the whole body (a). Strong accumulation was observed in particular in the area anterior to the right ear (arrow in (b)), the left side of the skull base (arrowhead in (b)), and in the vertebral body of the first lumbar vertebra (c).