Clinical Analysis of External Auditory Canal Cancer

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Abstract

Introduction

External auditory canal (EAC) cancer is rare, representing less than 0.2% of all head and neck cancer cases. Although total or subtotal temporal bone resection is one of the main surgery types used for advanced EAC cancer, the sequence of the surgery are severe, and prognosis for the patients undergoing this type of surgery is poor. At our institute, locally advanced EAC cancer patients have been treated with superselective intra-arterial chemotherapy + radiotherapy (RT) since 2003. The objective of this study was to evaluate tumor stage, sequence, and prognosis in patients with EAC cancer who received superselective intra-arterial chemotherapy + RT or surgery in our hospital.

Methods and Materials

Patients

The subjects were 32 patients (17 men and 15 women; mean age, 65.5 years (range 43-88 years)) who received initial treatment at the Department of Otolaryngology, Head and Neck Surgery, Hyogo College of Medicine between 1993 and 2014. The patients were followed up for at least 13 months or until their death, with a median follow-up period of 39 months.

We used the TNM-category classification as described in the staging classification system of the University of Pittsburgh. Eight of the patients were diagnosed with T1N0 (stage I); 5, with T2N0 (stage II); 10, with T3N0 (stage III); 6, with T4N0; 2, with T4N1; and 1, with T4N2b (stage IV) disease. No distant metastasis was observed in any cases at the initial treatment.

Methods

The treatments used were lateral temporal bone resection in 10 cases (T1:4, T2:3, T3:2, T4:1); external auditory canal resection in 3 cases (T1:3); superselective intra-arterial rapid infusion chemotherapy + radiotherapy in 16 cases (T1:1, T2:1, T3:7, T4:7); concurrent chemo-radiotherapy in 2 cases (T2:1, T3:1) and radiotherapy alone in 1 case (T4:1).

Statistical analysis

Survival rates were calculated by using the Kaplan-Meier method. Log rank test was applied to compare survival outcome.

Concurrent Superselective intra-arterial chemotherapy + RT

- CDOP Total 200-250 mg (50 mg/body/week x 4-5weeks)+ radiotherapy (RT) 60-66 Gy (2.0 Gy/day x 30-33 fr)

  • CDOP
  • RT: 20Gy/day

  - All catheterizations were performed via a transfemoral approach using the Seldinger method. The feeding arteries of the primary tumor were identified, and cisplatin (CDOP: 50 mg/body) was injected. Sodium thiosulfate, which acts as a systemic neutralizing agent for CDOP, was administered intravenously, and corticosteroids (20 mg of prednisolone) were simultaneously administered intra-arterially to prevent local toxicity.

  - The feeding artery was the posterior auricular artery and/or the superficial temporal artery. (Figure 2) Four, or five courses of arterial infusion were administered weekly.

Tables

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Table 1. TNM staging classification.

Results

The 5-year overall survival rate was 64.7% for all stages combined (stage I: 100%, stage II: 80%, stage III: 40.0%, and stage IV: 37.5%). The 5-year disease-specific survival rate was 70.0% for all stages combined (stage I: 100%, stage II: 80%, stage III: 44.4%, and stage IV: 42.9%). (Figure. 3)

Overall survival rate was lower advanced EAC cancer (stage III, IV) than early EAC cancer (stage I, II), but log rank test failed to show such association. The 5-year overall survival rate of EAC patients who received surgery was 91.7%, Intra-arterial chemotherapy (IAC) + RT was 50%, CRT was 33.3%. (Figure. 4)

No late-phase adverse effects due to superselective intra-arterial chemotherapy + RT and no adverse effects due to catheterization were observed.

Conclusion

Although advanced EAC cancer showed poor prognosis, superselective intra-arterial rapid infusion chemotherapy + radiotherapy could be served as a treatment choice for locally advanced carcinoma of the external auditory canal.

References


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