Carcinoma of the Ear

—Report of 6 Cases—

SHIGEJIRO KURITA, KAZUTO NAGATA, SHIGENOBU MIHASHI,
TAKAO KASUYA AND TOSHIO ITO

*Department of Otolaryngology, Kurume University, School of Medicine,
Kurume, 830 Japan*

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Summary: Six cases of carcinoma of the external auditory canal, which were curatively treated in Kurume University Hospital, were reported. Five of these cases were squamous cell carcinoma and the other one was basal cell carcinoma. Three cases were female and the other 3, male. The age ranged 25 to 77 years. Curative treatment were done for 5 cases. Of these 5 cases, 3 cases were treated chiefly with surgical operation. Two of them are currently alive without tumor, while the other one died from gastric cancer 2 years and 9 months after the initial treatment, being free of the tumor present. Two cases were initially treated chiefly by radiotherapy. One of them is currently tumor-free and alive 1 year and 7 months after the treatment. In the other, recurrence of the primary lesion occurred 4 months later. Salvage operation was done and the recurrence was controlled. But the patient died from unknown etiology 2 years and 6 months after the initial treatment. The 6th patient was an inoperable case and palliative radiotherapy was done. The patient died from tumor 1 year and 1 month later.

Key words: carcinoma—ear—carcinoma of ear—external auditory canal

Introduction

Carcinoma of the external auditory canal is not a common pathology among head and neck malignancies. Six cases of carcinoma of the external auditory canal were curatively treated in Kurume University Hospital from 1971 to 1980. This paper presents a report of these cases.

Case Report

Case 1: J. S.

A 66-year-old female was operated under a diagnosis of carcinoma of the right external auditory meatus in another private clinic in February 1971. A recurrent tumor

was pointed out early in December 1974. The patient was referred to our hospital on March 28, 1975, because right facial palsy occurred.

On physical examination, the right external auditory meatus was filled with tumor. The tumor looked polypous and granulomatous. An incomplete right facial palsy was observed. Cervical lymphnodes were not palpable. Audiometry demonstrated a hearing loss (65 dB) on the right side. The threshold for bone conduction was 16.25 dB. The histological diagnosis of a biopsy specimen was basal cell carcinoma.

Extirpation of the tumor was performed under general anesthesia on April 14, 1975. There was destruction of the posterior wall of the external auditory meatus. The mas-

toid and tympanic cavity were filled with tumor. The tumor extended to the dura mater of the middle cranial fossa. The facial nerve was involved and, therefore, was resected at the horizontal portion. The capitulum of the mandible was amputated. Bleomycin (315 mg in total) was administered after the surgery.

The patient was discharged on August 1, 1975 and is currently alive 6 years and 3 months after the operation with no evidence of any recurrent tumor.

Case 2: Y.K.

A 26-year-old female noticed otorrhea without pain on the left side early in May 1977. She visited another otolaryngologic clinic and was noted to have cholesteatoma. She had conservative treatments for a month but otorrhea did not decrease. The patient was referred to our hospital for surgical treatment and admitted on June 17, 1977.

On physical examination, a tumor formation was observed on the lower and posterior walls of the left external auditory meatus. Only the upper part of the tympanic membrane was visible. A node of peanut-size was palpated in the left jugulodigastric region. Air conduction threshold of the left ear was 15.0 dB. Biopsy revealed that the lesion was well differentiated squamous cell carcinoma.

Surgical extirpation of the tumor was performed on June 27, 1977. The entire skin of the external auditory meatus, including the tumor, was completely removed. The meatal bone and the mastoid cavity were not involved, and therefore, were not operated. Free skin graft taken from the thigh was implanted to the external auditory meatus. Radical neck dissection was done on July 21, 1977. Histologic examination revealed no metastasis.

The patient was discharged on August 31, 1977 and is currently alive for 4 years and 1 month after the operation with no evidence of recurrent tumor.

Case 3: F.M.

A 57-year-old male, who had suffered from bilateral chronic otitis media since his childhood, visited another otolaryngologic clinic for otalgia and increased otorrhea of the right ear. A tumor of the right external auditory meatus was noted and the patient was referred to our hospital on September 2, 1977.

On physical examination, a mass was found on the anterior wall of the right external auditory meatus. Biopsy demonstrated squamous cell carcinoma. Cervical lymphnodes were not palpable.

Preoperative radiation (3000 rad in total) was done in combination with Bleomycin (150 mg in total) and Mitomycin (40 mg) from September 7 to September 30. Metastasis to the right jugulodigastric node, 2.5 cm × 2.5 cm in size, was noted on December 22, 1977. On March 6, 1978 the patient underwent surgical extirpation of the ear cancer and radical neck dissection. The anterior wall of the external auditory meatus was destroyed by tumor, but the mastoid and tympanic cavities were intact. He was discharged on June 7, 1978 without tumor. He died from gastric cancer in June 1980, 2 years and 9 months after the initial treatment for carcinoma of the ear. No clinical evidence of recurrence of the ear lesion was reported.

Case 4: T.U.

A 60-year-old female noticed right ear obstruction and hearing loss in the middle of June 1978. Early in July, she developed otalgia and bleeding from the right ear. On August 26, she visited another otolaryngologic clinic and was referred to our hospital on the 29 th.

On physical examination, the right external auditory meatus was filled with hemorrhagic tumor. No facial palsy and cervical lymphnode swelling were noted. The mastoid cavity and internal auditory canal were intact on X-ray examinations.

Biopsy and tumor vaporization with la-

ser were done on September 4, 1978. The tumor arised from the antero-interior wall of the external auditory meatus and it was almost completely vaporized. After the vaporization, the tympanic membrane was exposed, being intact. Histological examination of the surgical specimen presented well differntiated squamous cell carcinoma. Postoperative radiation was given 2250 rad with a telecobalt unit and 1250 rad with a Ra needle. She was discharged on October 27, 1978, being free of tumor.

On routine follow up examinations, a local recurrence was suspected on January 9, 1979. The right external auditory meatus was filled with white-coated tumor. Recurrence was confirmed by biopsy. The patient was admitted to our hospital again on January 26, 1979. On February 8, 1979, an extensive surgical removal for the recurrent tumor was performed. The entire external ear, a part of the temporal bone including the middle ear, and the parotid gland were included in the surgical specimen.

She was discharged on April 10, 1979, being free of tumor. She died from unknown etiology 2 years and 6 months after the initial treatment. No clinical evidence of recurrent tumor was reported.

Case 5: S. M.

A 77-year-old male, who had been treated for chronic otitis media at another clinic since March 1977, developed a swelling in the left external auditory meatus in March 1979. In August 1979, a biopsy was done but the diagnosis was inflammatory granulation tissue. The swelling of the external auditory meatus enlarged and biopsy was repeated on November 20. The diagnosis was well-differentiated squamous cell carcinoma. The patient was referred to and admitted to our hospital on December 4, 1979.

On physical examination, the antero-inferior wall of the external auditory meatus was markedly swollen and, consequently,

the tympanic membrane was invisible. Audiometry showed bilateral perceptive deafness. Plain X-ray film and tomogram of the left ear showed no bone destruction of the external auditory meatus. The tumor did not invade the tympanic membrane and middle ear. Cervical lymph node was not palpable.

A combination therapy consisting of radiation, local and systemic application of anti-cancer drugs, and necrotomy was indicated. A total of 6000 rad ^{60}Co radiation was given in association with daily local application of 5-Fu salve and necrotomy. 5-Fu dry syrup, 3000 mg in total, was given. The tumor began to regress when 1000 rad was irradiated and clinically disappeared when 3500 rad was irradiated.

The patient was discharged on February 19, 1979 and is currently doing well 1 year and 7 months after the initial treatment with no evidence of recurrent tumor.

Case 6: T. T.

A 69-year-old male complained of otalgia and a swelling of preauricular region on the right side in the middle of May 1979. On May 25, a tumor formation of the external auditory meatus was pointed out at another clinic. Biopsy presented squamous cell carcinoma. The patient was referred to our clinic on June 13, 1979. The right external auditory meatus was filled with ear discharge and a tumor formation was observed on the posterior wall. A mass was palpated at the right superior deep cervical node and measured 5 cm $\times$ 10 cm. Plain X-ray film and tomogram revealed bone destruction of the anterior wall of the external auditory meatus. The mastoid region was cloudy.

Preoperative radiation followed by a surgical eradication was planned. Preoperative radiation (3000 rad in total) was given to the primary lesion and metastatic node. At the end of the preoperative radiation, the neck mass appeared to be fixed to the carotid artery. A carotid angiography re-

Fig. 1. Outline of 6 cases

Op: operation, BLM: Bleomycin, RND: radical neck dissection

5FU-DS: 5-FU dry syrup, Ra: radiation

vealed a stenosis of the internal carotid artery, which appeared to be caused by the metastatic cervical node. Surgical eradication of the metastatic mass appeared to be impossible. A palliative radiation (3000 rad in total) was added. The primary tumor became smaller after the irradiation. Metastatic cervical node also became smaller to 1.5 cm × 2.0 cm in size. The patient was discharged on September 4, 1979. Nine months later, an evidence of lung metastasis was noted on X-ray examination. The patient died 1 year and 1 month after the onset of initial treatment.

Fig. 1 summarized the outline of the 6 cases.

Discussion

Generally speaking, the incidence of carcinoma of the external auditory canal is low (Yuge et al. 1977). There is no marked difference in the incidence between male and female. For example, in 105 cases reported by Lewis (1973), 40 occurred in males and 65 in females. In our series, 3 cases were female and 3, male. The age of our

cases ranged from 25 to 77 years with a mean age of 59 years. This figure was not much different from the age reported by Lewis.

Batsakis (1979) and Conley (1966) reported the most common malignant tumor arising from the external auditory canal was squamous cell carcinoma. Primary adenoid cystic carcinoma and basal cell carcinoma are rare. In our cases, five were squamous cell carcinoma and one, basal cell carcinoma.

The clinical symptoms of carcinoma of the external auditory canal are similar to those of otitis externa or otitis media (Batsakis, 1979). No universal principle appears to have been established for the selection of therapeutic modalities. There seems to be a tendency, however, that, for squamous cell carcinoma, early cases are treated chiefly with radiotherapy whereas extensive cases chiefly with surgery. Our cases were treated along this line and the choice of the initial treatment proved to be adequate in most cases. However, it should be noted that in Case 4, an early case, radiotherapy failed to control the lesion.

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