Research

Characteristics of mastoid carcinoma patients in Otorhinolaryngology-HNS Department Zainoel Abidin General Hospital Banda Aceh

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ABSTRACT

Background: Mastoid carcinoma is a rare case of an aggressive tumor with a poor prognosis. **Purpose:** To identify the characteristics of mastoid carcinoma patients in Otorhinolaryngology Head and Neck Surgery Department of dr. Zainoel Abidin General Hospital, Banda Aceh. **Method:** This was a descriptive study using medical records data from January 2012 to July 2019, and from the histopathological data as a confirmation. **Result:** There were 9 cases consisted of 4 male and 5 female patients with the ratio 1:1.2, between the age of 12-72 years old, and the majority was in 41-60 years group of age. Clinical symptoms obtained are otalgia (100%), otorrhea (100%),facial paresis (100%), hearing loss (100%), ear canal mass (100%) and retroauricular mass (44.4%). The histopathological type of all cases was squamous cell carcinoma (100%). Based on CT scan examination results, there were 55.6% cases in stage IV and 44.4% in stage III. Chemotherapy was given to 89% of patients, and 11% received radiotherapy. **Conclusion:** Mastoid carcinoma is a rare case. In our study, there were 4 male and 5 female patients with mastoid carcinoma. The histopathological type of all patients was squamous cell carcinoma, in stage III and IV. Chemotherapy was given to 9 patients, and 1 patient received radiotherapy.

Keywords: mastoid carcinoma, characteristic, clinical symptoms, histopathology, therapy

ABSTRAK

Latar belakang: *Karsinoma mastoid merupakan kasus yang jarang namun serta bersifat agresif dan memiliki prognosis buruk.* ***Tujuan:*** *Mengetahui karakteristik pasien karsinoma mastoid di Bagian Telinga Hidung Tenggorok Bedah Kepala Leher, Rumah Sakit Umum Daerah dr. Zainoel Abidin Banda Aceh.* ***Metode:*** *Penelitian deskriptif dengan menggunakan data rekam medik RSUD dr. Zainoel Abidin Banda Aceh periode Januari 2012 sampai Juli 2019 dan data hasil pemeriksaan histopatologi sebagai konfirmasi.* ***Hasil:*** *Didapatkan 9 kasus terdiri dari 4 pria dan 5 wanita dengan perbandingan 1:1,2. Sebaran usia pasien dari 12 sampai 72 tahun dengan insiden puncak usia 41-60 tahun. Gejala klinis yang didapatkan adalah otalgia (100%), sekret telinga (100%), paresis fasialis (100%), penurunan pendengaran (100%), massa di liang telinga (100%) dan massa retroaurikular (44,4%). Tipe histopatologi seluruh kasus adalah Squamous Cell Carcinoma (100%). Stadium IV sebesar 55,6% dan stadium III sebesar 44,4% ditentukan berdasarkan CT Scan. Dilakukan kemoterapi pada 89% pasien dan radioterapi pada 11% pasien.* ***Kesimpulan:*** *Karsinoma mastoid merupakan kasus yang jarang. Pada penelitian kami didapati 4 pasien laki-laki dan 5 pasien perempuan penderita karsinoma mastoid dengan usia terbanyak pada 41-60 tahun. Histopatologi seluruh pasien merupakan karsinoma sel skuamosa stadium III dan stadium IV. Kemoterapi diberikan kepada 9 pasien, dan 1 pasien mendapat radioterapi.*

Kata kunci: *karsinoma mastoid, karakteristik, gejala klinis, histopatologi, terapi*

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INTRODUCTION

Mastoid carcinoma is a rare and aggressive case with a poor prognosis. Politzer in 1883 first described the mastoid carcinoma. Diagnosis is often delayed because initial symptoms are similar to those of common external and medial ear infections. This delay could affect the outcome of the provided therapy.[1] The incidence of mastoid carcinoma accounts for <0.2% of all cases of head and neck malignancies.[2] *Squamous Cell Carcinoma* (SCC) is the most common neoplasm, followed by *Basal Cell Carcinoma* (BCC), *Adenoid Cystic Carcinoma* (ACC) and *Adenocarcinoma*.[3]

Symptoms and clinical signs that are often found in mastoid carcinoma include discharge or blood from the ear canal, otalgia, headache, trismus and hearing loss with or without facial paralysis.[1,2] Mastoid carcinoma was confirmed by histopathological examination. *Computed Tomography (CT) Scan* and *Magnetic Resonance Imaging* (MRI) are commonly used radiological examinations. Staging was determined using *The Pittsburgh Radioclinical Classification of Carcinoma of the External Ear Canal*.[4]

Surgery and radiotherapy are the therapy of choice in the management of mastoid carcinoma. Chemotherapy is considered in patients with T4 tumors, residual disease after surgery, or metastatic disease. Cisplatin is the preferred chemotherapy agent.[5]

The purpose of this study was to describe the characteristics of mastoid carcinoma cases in Departement of Otorhinolaryngology Head and Neck Surgery of dr. Zainoel Abidin General Hospital Banda Aceh.

METHOD

The research was conducted in a descriptive manner using medical record data in dr. Zainoel Abidin General Hospital Banda Aceh from the period January 2012 to July 2019. The sample of study was data from all patients with a final diagnosis of mastoid carcinoma at the Otorhinolaryngology Head and Neck Surgery Polyclinic of dr. Zainoel Abidin Banda Aceh from January 2012 to July 2019 in the form of patient identity, medical record, histopathology and diagnostic examinations. The data obtained were processed and grouped manually and computerized in the form of a frequency distribution table.

RESULTS

There were 9 cases of mastoid carcinoma reviewed, consisting of 4 (44%) male patients and 5 (56%) female patients with a ratio of 1: 1.2 (Table 1). Most patients were found in the age range of 41-60 years old at 56%, followed by 21-40 years at 22% and ages 0-20 and >61 years respectively 11%. The clinical symptoms obtained were otalgia (100%), ear discharge (100%), facial paresis (100%), hearing loss (100%), ear canal mass (100%) and retroauricular mass (44,4%) (Table 2). The histopathological type obtained in all patients was *Squamous Cell Carcinoma* which consisted of *Keratinizing SCC* (56%), *Non Keratinizing SCC* (22%), *Well Differentiated SCC* (11%) and *Clear Cell Carcinoma* (11%) (Table 3). Staging was determined based on CT scan, and obtained 55.6 % stage IV and 44.4% stage III of mastoid carcinoma (Table 4). Out of 9 patients, 89% of patients were given chemotherapy and 11% radiotherapy. (Table 5).

Table 1. Characteristics of subjects

Characteristics	Total	
	F	%
Gender		
Male	4	44
Female	5	56
Age		
0-20 years	1	11
21-40 years	2	22
41-60 years	5	56
>61 years	1	11

Table 2. Distribution of clinical symptoms -

Clinical symptoms	Total	
	F	%
Otalgia	9	100
Ear discharge (otorrhea)	9	100
Hearing loss	9	100
CAE mass	9	100
Retroauricular mass	4	44.4
Facial nerve paresis	9	100

Table 3. Distribution of histopathology

Type of histopathology	Number	
	F	%
Squamous Cell Carcinoma		
Keratinizing Squamous Cell Carcinoma	5	56
Non Keratinizing Squamous Cell Carcinoma	2	22
Well Differentiated Squamous Cell Carcinoma	1	11
Clear Cell Carcinoma	1	11
Total	9	100

Table 4. Staging of mastoid carcinoma

The stage	Number	
	F	%
Stage I	-	-
Stage II	-	-
Stage III	4	44.4
Stage IV	5	55.6
Total	9	100

The staging of the patients was according to The Pittsburgh Radioclinical Classification of Carcinoma of the External Ear Canal.

Table 5. The management of mastoid carcinoma

Management	Number	
	F	%
Chemotherapy	8	89
Radiotherapy	1	11
Total	9	100

DISCUSSION

Mastoid carcinoma is a rare and aggressive case.[1] It affects mostly the age group of 40-60 years and it is more common in women.[6] Da Silva et al.[7] reported cases of mastoid carcinoma in 56.25% of men and 43.75% of women with a mean age of 58.7 years.[6] In this study, mastoid carcinoma was found in 44% men and 56% women or 1: 1.2 with the most ages ranging from 41-60 years.

Exposure to ultraviolet light is one of the etiologies of mastoid carcinoma. Malignant otitis externa, chronic otitis media and cholesteatoma were also associated with the development of mastoid carcinoma.[4] The incidence of carcinoma is increased in patients with a history of radiotherapy. Lo et al. quoted by Gidley[8] reported 0.15% (11 patients) of 7442 nasopharyngeal carcinoma patients who underwent radiotherapy developed mastoid carcinoma. Chronic discharge from CAE, bleeding, otalgia and hearing loss, with or without facial paralysis are common symptoms of malignancies involving CAE and mastoid. It is also often accompanied by otitis externa or otitis media.[3] The four most common presentations of complaints reported by mastoid carcinoma patients were otorrhea (62%), otalgia (52%), hearing loss (44%), and facial paralysis (15.5%).[1,8] Diagnosis is often delayed because of symptoms resembling external and medial ear infections.[9] In this study all patients had otalgia (100%), ear discharge (100%), facial paresis (100%), hearing loss (100%), ear canal mass (100%) and retroauricular mass (44.4%).

Biopsy is the standard procedure in establishing the type of tumor. *Squamous Cell Carcinoma* (SCC) is the most common neoplasm, followed by *Basal Cell Carcinoma* (BCC), and *Adenoid Cystic Carcinoma* (ACC).[3] The results of this study were in accordance with the literature where the histopathological result of all patients was *Squamous Cell Carcinoma*. CT Scan and MRI are radiological examinations commonly used to determine tumor extent and *The Pittsburgh Radioclinical Classification of Carcinoma of the External Ear Canal* to determine staging.[1]

Surgery and radiotherapy are the therapeutic options. Although still controversial, chemotherapy is used for T4 tumors, metastases and residues. Kunst et al. quoted by Zanoletti[10] reported better results with Cisplatin than Methotrexate and suggested a combination of Cisplatin with 5-Fluorouracil as an option. In this study, 89% of patients received chemotherapy with the Cisplatin regimen with Docetaxel and 11% received radiotherapy.

In our study, the ratio of men and women in cases of mastoid carcinoma was 1:1.2, mostly in the age range of 41-60 years. The whole histopathological type was *Squamous Cell Carcinoma.* All patients had clinical symptoms comprising of otalgia, ear discharge (otorrhea), facial paresis, hearing loss, and mass in the ear canal. The therapy of choice was chemotherapy.

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