ORIGINAL RESEARCH PAPER

Oncology

KEY WORDS: Salivary gland, Advanced stage, Recurrence

ADENOID CYSTIC CARCINOMA OF HEAD AND NECK REGION- AN INSTITUTIONAL ANALYSIS

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ABSTRACT

Introduction : Adenoid cystic carcinoma constitutes around 1% of all head and neck malignancies. Although commonly found in salivary glands, it can occur at other sites in head and neck region like nose and paranasal sinus, larynx, oropharynx. Here, we sought to present our experience with adenoid cystic carcinoma of head and neck region.

Methods and Materials : A retrospective analysis was conducted from 2011-2015 on adenoid cystic carcinoma cases in head and neck region from a prospectively maintained Institutional database. Only the cases who took treatment at our Institute were taken for analysis. The cases were analysed on the basis of demographic profile, tumor site, stage, treatment modalities and survival outcome.

Results: A total of 30 cases were included in this study. 46.7% cases were from salivary gland, followed by maxilla. 80% presented in T3 and T4 stage. 13.3% had distant metastases at presentation. Recurrence rate was 22.7%. 5 years Overall Survival (OS) and 5 years Disease Free survival (DFS) were 45.3% and 71.7% respectively.

Conclusion : The clinical behaviour of this tumor and its propensity for recurrence makes it necessary for a long term periodic follow up. Advanced stage of the disease calls for morbid treatment and impacts survival functions.

INTRODUCTION –

Adenoid cystic carcinoma is an uncommon tumor in head and neck region and constitutes 1-5% of all head and neck malignancies. It is commonly seen to arise in salivary glands (parotid, submandibular) but can be seen in other head and neck sites like nose and paranasal sinus, larynx, palate, trachea etc. The clinical pattern of this tumor is characterised by slow growth, multiple recurrences and distant metastases. Perineural invasion may be seen in 22-46% cases [1]. Although slow growing, but majority of the cases present at an advanced stage. This tumor was first described by Robin and Lorain in 1853 as an epithelial tumor in nasal cavity but later named as 'Adenoid cystic carcinoma' by Spies in 1930 [2].

METHODS AND MATERIALS –

A retrospective study was conducted among the Adenoid cystic carcinoma cases of Head and Neck region from a prospectively maintained institutional database. The study period was 2011 – 2015. Only the cases who took treatment at our Institute were included in our study. After excluding the cases with missing data or those who were lost to follow up, a total of 30 cases were included in the study. The cases were then analysed according to demographic profile, tumor site, recurrence pattern, treatment modalities and survival functions. Statistical analysis was done using SPSS version 20.0.

RESULTS –

A total of 30 cases were taken for analysis. Mean age group was 47 years, with male - female ratio being 2 : 3. The most common primary site was parotid gland, followed by submandibular gland, maxilla, nasal cavity.

Table 1

PRIMARY SITE	NUMBER	PERCENTAGE
Parotid	09	30%
Submandibular	05	16.7%
Maxilla	04	13.3%
BOT	03	10%
Nasal cavity	02	6.7%
Buccal mucosa	02	6.7%
Palate	02	6.7%
Thyroid	02	6.7%
Tongue	01	3.3%

Majority of the cases presented at an advanced stage. 80% had T3 and T4 disease at presentation. Around 20% had nodal disease and 13.3% had distant metastases.

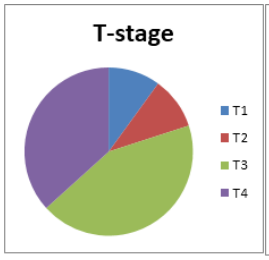

Figure 1

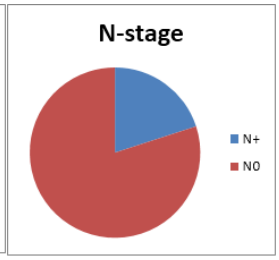

Figure 2

Surgery was the main treatment modality adopted with 66.6% (20/30) undergoing some form of surgery depending on the site and extension. Adjuvant radiotherapy was given depending on the post-operative histology. 5 cases received only Radiation due to unresectable disease. 5 cases received Palliative care. Among the surgical cases, Perineural invasion was seen in 22.2%. Recurrence was seen in 22.7% cases. 5 years Overall Survival (OS) and 5 years Disease Free survival (DFS) were 45.3% and 71.7% respectively.

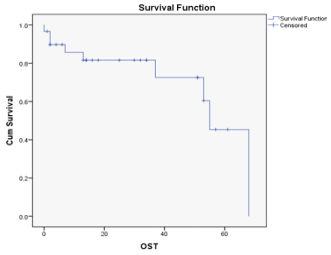

Figure 3

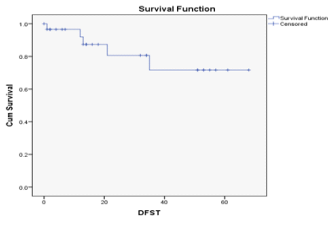

Figure 4

DISCUSSION –

Adenoid cystic carcinoma usually presents as a slow growing tumor. Its main landmark is its propensity for perineural invasion and multiple recurrences. Lymph node involvement is not common, but hematogenous spread to distant sites can occur in upto 40% cases [3]. Three distinct architectural patterns have been found – tubular, cribriform, solid; out of which solid component is the most aggressive and associated with the worst prognosis. Ko et al stated that the tumors found in minor salivary glands have a poor prognosis and is associated with bad prognosis [4].

Some immunohistochemical (IHC) markers have been used to diagnose this as they are seen to express characteristic IHC pattern. Chen et al has found positivity of these tumors with Carcinoembryonic antigen (CEA) and Epithelial Membrane Antigen (EMA) which corresponded to luminal cells [5] and also to Cytokeratin (CK) and S-100 which represented myoepithelial cells [6]. Expression of c-kit was found to be associated with high grade and solid pattern and may predict local recurrence and distant metastases [7].

Radical surgeries with adequate margins represent the treatment of choice. Shah et al have demonstrated excellent results in local control with radical surgery followed by adjuvant radiation [8,9]. However, there are other studies which did not find any benefit in adding adjuvant radiation. Katz et al stated that post-operative radiation tends to delay, rather than prevent, local recurrences [10]. Nevertheless, post operative radiation is commonly given in cases with skull base disease, perineural invasion, lymph node metastases, recurrent tumors, aggressive histological subtype etc [11,12]. Role of systemic chemotherapy is controversial, other than in palliative settings. Recently, some trials are going on to look for targeted therapies in these tumors which later could be an useful alternative [13,14].

Prognosis of the cases are seen to depend on various factors like positive surgical margins, perineural invasion, clinical stage of the disease, lymph node metastases, treatment modality. But the most important was found to be the histological grade of the tumor. Gandhi et al found 2 years 4 years DFS to be 75% and 71% respectively [15].

In our study, females had a slight higher preponderance. Majority of the cases presented an advanced disease with 13% having distant metastases. Although commonly found in salivary glands, they were also seen in various other head and neck sites. Most of our surgical cases received post operative radiation. Perineural invasion was seen in 22% cases. 5 years DFS was 71.7%.

CONCLUSION –

The propensity of these tumors for recurrences makes it obligatory for long term follow-up. Early diagnosis can reduce extensive morbidity and mortality. Newer treatment trials may promise a better outcome in future.However to the rarity of these tumors, a multi-institutional study might help to understand their behaviour properly for better management.

Conflict of interest – The authors disclose no conflict of interest.

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