Case Report

Metastatic Pleural Effusion: A Rare Presentation of Salivary Gland Adenoid Cystic Carcinoma

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ABSTRACT

Adenoid cystic carcinoma, an uncommon malignant salivary gland neoplasm, is known for its long clinical course, indolent growth, local recurrence and late distant metastasis. We report an unusual case of adenoid cystic carcinoma of the palate in a 64-year-old woman, undiagnosed for more than 15 years, who presented as malignant pleural effusion.
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Key words: Adenoid cystic carcinoma, Carcinoma of palate, Pleural metastasis, Pleural malignancy.

INTRODUCTION

Adenoid cystic carcinoma, first described as "cylindroma" by Billroth in 1859, accounts for about 10% of all salivary neoplasms[1] and for about 40% of all malignancies of the major and minor salivary glands, palate being its most common location in the oral cavity.[2,3] These tumours are well known for their slow growth with an encouraging five-year survival rate but late distant metastasis together with local recurrence accounts for a rather low long-term survival.[2,3] Adenoid cystic carcinoma is unique for two reasons: first, its protracted natural history even when local recurrence or distant metastases have occurred[4] — patients have been known to survive for 10 to 15 years despite pulmonary metastases; and secondly, its propensity to spread along peri-neural lymphatics[5] frustrating attempts at local control.

We report a case of a 64-year-old woman who presented with a recent-onset left-sided pleural effusion and an undiagnosed ulcerated mass lesion of the palate that had been present for 15 years.

CASE REPORT

A 64-year-old housewife presented with gradually progressive shortness of breath on exertion and cough with mucoid expectoration for the last two months. She denied any history of fever, chest pain, or haemoptysis, tobacco use or any other addiction. There was no past history of, or history of contact with, tuberculosis.

On examination, the patient was moderately built with slight pallor. Examination of the oral cavity revealed a firm, friable, non-tender, reddish lesion (3cm x 3cm) with well-defined margins. Areas of ulceration were noted on the lateral aspect of the soft and posterior portion of the hard palate, mainly on the left side (Figure 1). On further questioning, she reported having noticed two small growths on her palate 15 years ago, from which small tissue fragments were occasionally shed, accompanied by episodes of streaky haemorrhage. The growths eventually coalesced and had slowly grown in size. Five years ago, she underwent a biopsy of the palatal mass which was reported as "a chronic non-specific inflammatory lesion''.

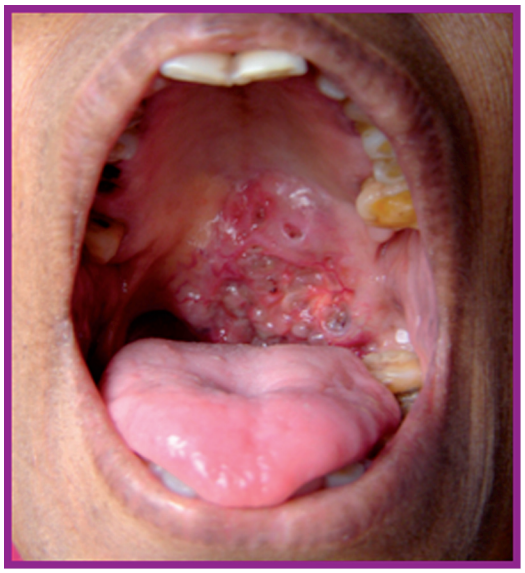

Figure 1. Photograph of the oral cavity of the patient showing the palatal mass with ulceration.

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Respiratory examination showed tracheal deviation to the right, stony dullness on percussion on the left side with absent breath sounds on auscultation over corresponding areas. There was no clubbing, lymphadenopathy or hepatosplenomegaly. Examination of other systems was unremarkable.

Haemogram and routine biochemical tests were normal except for moderate anaemia. Sputum for acid-fast bacilli (AFB) and enzyme-linked immunosorbent assay (ELISA) for human immunodeficiency virus (HIV) were both negative. Plain radiographs and computed tomography (CT) of the chest revealed a left-sided pleural effusion (Figure 2). An underlying parenchymal mass was also seen on CT of the chest (Figure 3). Pleural aspirations revealed haemorrhagic fluid with evidence of mesothelial proliferation without any malignant cells in three samples and adenosine deaminase (ADA) level was 21.2U/L (negative < 30). Ultrasound of the whole abdomen was normal. She underwent a pleural biopsy followed by palatal biopsy the next day.

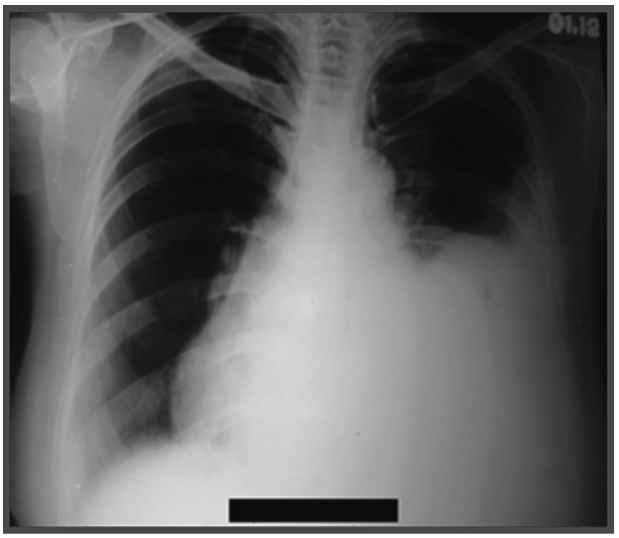

Figure 2. Chest radiograph (postero-anterior view) showing moderate left sided pleural effusion with a somewhat upward covexity.

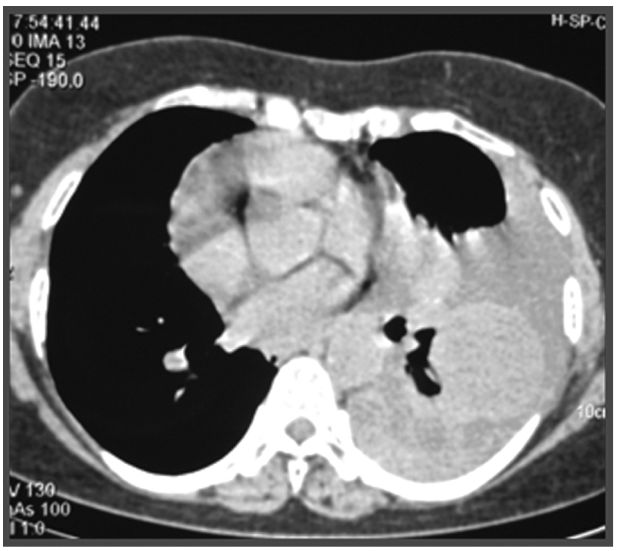

Figure 3. Computed tomography of the chest showing left pleural effusion with an underlying lung mass.

Palatal growth biopsy showed a tumour arranged in both tubular and cribriform patterns (Figure 4). Pseudocysts containing basophilic material were noticed. The tumour cell nuclei were small and hyperchromatic. The histological features were typical of adenoid cystic carcinoma. Pleural biopsy (Figure 5) showed a tumour with similar morphology as described for the palatal growth. Considering the clinical presentation and histological characteristics of the tumour, it was evident that the palatal growth was the primary lesion and pleural growth was the secondary deposit.

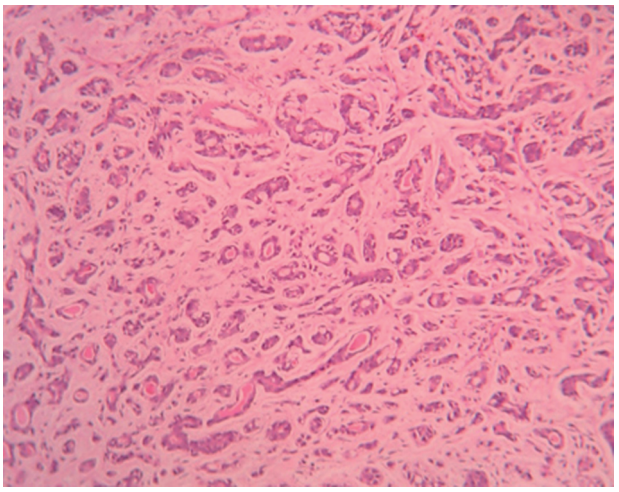

Figure 4. The biopsy of palatal lesion shows tumour having predominately tubular arrangement. The lumen contains pale basophilic material (Haematoxylin and Eosin×10).

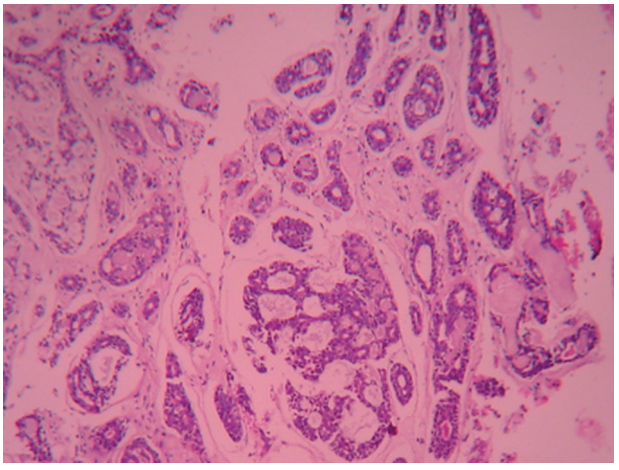

Figure 5. The biopsy of pleural mass shows tumour having both cribriform and tubular pattern. Cystic spaces containing basophilic material are seen (Haematoxylin and Eosin×10).

An intercostal tube was inserted followed by talc pleurodesis. The shortness of breath subsided. On her refusal of further therapy, she was subsequently discharged and is now on follow-up.

DISCUSSION

Adenoid cystic carcinoma is a slow-growing but highly malignant neoplasm of the salivary gland, usually involving the minor salivary glands of the head and neck.[1] Adenoid cystic carcinoma can arise in other sites, such as the trachea, lacrimal gland, breast, external auditory canal, cervix and vulva.

Most individuals are diagnosed with the disease in the fourth through the sixth decades of life, but a wide age range has been reported, including paediatric cases. The female and male ratio is approximately 3:2. Classic presentation is as an asymptomatic slow-growing mass, the absence of symptoms playing a key role in the delayed diagnosis.

The three major histological patterns of growth have been described: cribriform, tubular and solid. Combinations of the patterns are common. A pathological grading system has been developed based on the patterns of growth.[6] The prognosis of adenoid cystic carcinoma is greatly influenced by the pattern of growth. The tubular pattern is reported to have the best prognosis while the solid is associated with a more aggressive disease course.[3,6]

Adenoid cystic carcinoma has a relatively indolent course and infrequent lymph node metastases but is well-known for its tendency for neurotropic spread, late local recurrences and distant metastatic spread.[2] In a study of 160 patients of adenoid cystic carcinoma by Fordice *et al*,[3] disease-specific survival was 89% at five years but only 40% at 15 years. Distant metastasis was the most common type of treatment failure (in 22% patients), lungs being the most common site followed by liver. Spiro[2] in his retrospective study of 196 patients followed up for at least 10 years reported some form of treatment failure in 68%, distant metastasis in 38%, and lung involvement either alone or in addition to other sites in 34 percent. The time to metastasise has ranged from 13 to 77 months (mean: 31.7 months) in a study by Takagi *et al*.[7] Wal van der and others[8] have found that 54.9% of their 51 patients had distant metastasis, on an average of 36.8 months after diagnosis of the primary tumour. Disease-free interval varied from one month to as long as 19 years (median 36 months) in the study by Spiro.[2]

Our patient presented with pleuro-pulmonary metastasis 15 years after being symptomatic for the primary tumour for which she received no treatment. In a review of the literature, we came across only two other case reports describing presentation of salivary gland adenoid cystic carcinoma with metastatic pleural effusion.[9,10] In our patient, repeated pleural aspirations were negative, while pleural biopsy was positive for malignancy. This suggests that a high degree of suspicion for metastasis in such tumours, along with the need for a pleural biopsy rather than mere thoracocentesis, is not unwarranted. Survival with distant metastasis was less than three years in 54% patients, but more than 10 years in 10% patients in the study by Spiro,[2] while Wal van der and others[8] in their series found the average time between the occurrence of lung metastasis and death to be 32.3 months and between occurrence of metastasis elsewhere and death to be 20.6 months implying slow progress of pulmonary metastasis. These studies highlight the need for following these patients for decades.

Treatment of adenoid cystic carcinoma includes a complete excision of the local disease followed by post-operative radiotherapy.[1,3] Radiation therapy used alone has a high rate of local recurrence but may provide useful palliation in inoperable/disseminated disease.[11] Neutron radiotherapy has been studied in this disease with some authors suggesting a role for it.[12] Pulmonary metastasectomy for adenoid cystic carcinoma metastasis restricted to the lung does not seem to alter survival.[13] Chemotherapy using one or a combination of drugs (cyclophosphamide, 5-fluorouracil, doxorubicin, mitomycin-C and cisplatin) has been used with some success and remission. However, definitive role of chemotherapy in the management of adenoid cystic carcinoma is yet to be established.[14] The long natural history and indolent progression of adenoid cystic carcinoma make the status of therapeutic options less clear and "stationary disease" a poor criterion for treatment.[9,14] Our patient is on follow-up for the last six months and has had minimal symptoms following pleurodesis.

In conclusion, adenoid cystic carcinoma can rarely come to the clinical attention as a metastatic pleural effusion. The finding of an indolent palatal mass growing slowly for the last 15 years aroused suspicion of its possible relationship to the aetiology of pleural effusion and the diagnosis of adenoid cystic carcinoma of the palate with pleural involvement was confirmed by identical results of biopsies from the two sites.

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