

Case Report

Cytological Diagnosis of Adenoid Cystic Carcinoma of the Parotid Metastatic to Kidney and Lung

Srivastava S*, Jaiswal R*, Agarwal A+, Singh PK+, Singh SN#

Abstract

Metastasis of adenoid cystic carcinoma to the kidney is rare. We present a case of a 50 year old male with complaints and radiological findings suggestive of renal cell carcinoma and lung deposits. However, fine needle aspiration was suggestive of adenoid cystic carcinoma metastatic deposits. It was later elicited that the patient had undergone surgery for parotid tumour seven years back which on histology was an adenoid cystic carcinoma. The case is being presented for its rarity.

Journal of Cytology 2007; 24 (3) : 201-202

Key Words : Adenoid cystic carcinoma, kidney, metastasis, FNAC.

Introduction

Adenoid cystic carcinoma is a rare tumour accounting for less than 1% of all head and neck malignancies and 10% of all salivary gland neoplasms. Majority of the tumours arise in the major salivary glands, minor salivary glands of the oral cavity and mucous glands of upper respiratory tract.¹ Other primary sites are breast, lacrimal glands, lung and prostate.

Lymph node metastases are unusual; hematogenous spread, often to the lungs² is quite characteristic, metastasis to kidney being extremely rare.³⁻⁷ We could come across only one case in the literature which was diagnosed on FNAC.⁷ We present another such case.

Case Report

A 50 year old male with history of chain smoking presented with a right renal lump, flank pain and weight loss of two months duration. Intravenous pyelography, ultrasonography (USG) and computed tomography (CT) revealed a right renal mass measuring 10 x 6 cm lying in the upper pole. No lymph nodes were identified. Clinico-radiological features suggested a diagnosis of renal cell carcinoma. Chest radiographs revealed multiple homogenous opacities (coin shadows) in lungs which were suspected to be metastatic renal cell carcinoma. The patient was referred to pathology department for USG guided fine needle aspiration cytology (FNAC) of the renal lump. Smears were wet fixed and

stained by haematoxylin and eosin (H&E) stain.

Pathological findings: Smears were cellular comprising of well delineated, tightly cohesive clusters of basaloid cells surrounding mucoid, hyaline globules or clear spaces also forming honey comb (cribriform) pattern. At places dense aggregates of monomorphic small cells with uniform round to oval hyperchromatic nuclei and scanty cytoplasm were seen. Smears also showed occasional singly lying tumour cells with high N:C ratio and nuclear moulding. FNA findings were suggestive of adenoid cystic carcinoma. FNA of the lung lesion was subsequently done and revealed similar findings.

On further interrogation for any complaints or surgical

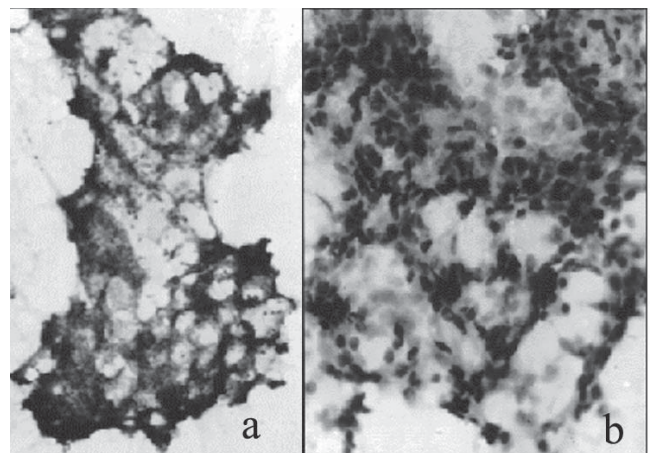


Fig. 1: a) Cytosmear showing tumour cells forming cribriform pattern (H&E, x 60). b) High power view showing basaloid cells surrounding clear spaces or hyaline globules (H&E, x 240).

*Junior Resident, +Associate Professor, #Professor and Head, Department of Pathology, GSVM Medical College, Kanpur-208002. Uttar Pradesh.

Received: 08.08.2006; **Accepted:** 30.01.2007

Corresponding Author: Dr. Shalini Srivastava, Department of Pathology, GSVM Medical College, Kanpur-208002. Uttar Pradesh.

E-mail: shalini1414@rediffmail.com

procedures in head and neck region, the patient gave previous history of a parotid mass 7 years back which was excised and reported as adenoid cystic carcinoma.

From all the above findings and investigations we concluded that it was a case of metastatic adenoid cystic carcinoma with primary in the parotid gland and widespread secondaries in the lungs and in the right kidney.

Discussion

Adenoid cystic carcinoma is a tumour accounting for 10% of the salivary gland tumours. Besides salivary gland it has also been reported to arise from breast, lacrimal glands, lung and prostate. It has not been known to arise from the kidney. The age of the patients at presentation, range from 20-84 years with median age of 52 years. Adenoid cystic carcinomas are characterized by slow growth, multiple recurrences, long clinical course, early perineural spread and late metastasis.⁸

The metastasis from adenoid cystic carcinomas is known to occur late, even many years after the primary tumour has been removed. Metastasis to the kidney is uncommon. Only few cases have been reported in the literature.³⁻⁷ Herzberg et al³ reported metastatic adenoid cystic carcinoma kidney after 12 years of mastectomy for adenoid cystic carcinoma breast. Awakura et al⁴ diagnosed metastatic adenoid cystic carcinoma kidney 5 years after parotidectomy for adenoid cystic carcinoma. Four years after left renal nephrectomy, multiple metastases were demonstrated in the other kidney, liver, lungs and brain by CT scan. Our patient presented with metastatic deposits in the kidney and lungs 7 years after the primary in the parotid had been excised.

Most of the cases reported in the literature were diagnosed on histology.³⁻⁶ We could establish the diagnosis on FNAC of the renal mass. The only other case that we came across where a pre operative

diagnosis by FNAC could be established was reported by Jiménez-Heffernan et al.⁷

Metastasis to the lung is hematogenous and has been reported frequently and the patients live almost in a symbiosis with the pulmonary metastatic nodules, which may remain stable for years.² In our case too, multiple deposits were seen in the lungs. These were earlier thought to be deposits from renal cell carcinoma.

The cyto-morphologic expression of adenoid cystic carcinoma at both primary and metastatic sites is so distinctive as to permit a definite diagnosis.

References

1. Eby LS, Johnson DC, Baker HW. Adenoid cystic carcinoma of the head and neck. *Cancer* 1972; 29:1160-8.
2. Smith RC, Amy RW. Adenoid cystic carcinoma metastatic to the lung. Report of a case diagnosed by fine needle aspiration biopsy cytology. *Acta Cytol* 1985; 29:533-4.
3. Herzberg AJ, Bossen EH, Walther PJ. Adenoid cystic carcinoma of the breast metastatic to the kidney. A clinically symptomatic lesion requiring surgical management. *Cancer* 1991; 68: 1015-20.
4. Awakura Y, Nonumura M, Fukuyama T, Okamoto E. Metastatic renal cancer arising from adenoid cystic carcinoma of parotid gland, a case report. *Hinyokika Kyo* 2001; 47:785-7.
5. Manoharan M, Gomez P, Reyes MA, Soloway MS. Metastatic adenoid cystic carcinoma to the kidney in a young woman. *Urology* 2006; 68:1343.e11-2. Epub 2006 Dec 4.
6. Vrani. S, Bilalovi N, Lee LM, Krušlin B, Lilleberg SL, Gatalica Z. PIK3CA and PTEN mutations in adenoid cystic carcinoma of the breast metastatic to kidney. *Hum Pathol* 2007 Jul 30; [Epub ahead of print].
7. Jiménez-Heffernan JA, Pérez F, Tobio R, Vicandi B. Adenoid cystic carcinoma of the parotid metastatic to the kidney: diagnosis by fine needle aspiration cytology. *Acta Cytol* 2007; 51:117-8.
8. Spiro RH, Huvas AG, Strong EW. Adenoid cystic carcinoma of salivary gland origin. A clinico-pathologic study of 242 cases. *Am J Surg* 1974, 128: 512-29.