

A second primary intestinal-type adenocarcinoma of the sinonasal tract induced by wood dust

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SUMMARY

Intestinal type adenocarcinoma of the sinonasal tract is associated with exposure to wood dust. We report the case of an adenocarcinoma tumor of the left sinonasal area diagnosed in 1998. Nineteen years earlier (1979), an intestinal type adenocarcinoma of the right nasal cavity was diagnosed. The first tumor was treated in 1979 surgically followed by postoperative radiotherapy. The second tumor showed the same histological features as an intestinal type adenocarcinoma (papillary type). The patient had a history of a 10 year exposure to wood dust (furniture worker), and the latency time of this patient was 48 years in 1998. We suppose that the tumor of the left side is a second primary intestinal type adenocarcinoma. This case indicates the usefulness of a lifelong follow up of patients with adenocarcinoma of the nose because of the wide range of latency times of these tumors.

Keywords: adenocarcinoma, nose neoplasms, occupational diseases, wood dust

INTRODUCTION

Epidemiological investigations have shown that furniture workers have an increased prevalence of adenocarcinoma in the nose (Macbeth, 1965; Acheson et al., 1968). These tumors are developing at the middle turbinate and show early invasion of the orbit and the skull base. Usually patients receive surgical therapy combined with postoperative radiotherapy. Local recurrence is the most common form of treatment failure. We report the case of a second primary intestinal type adenocarcinoma of the sinonasal tract 19 years after diagnosis of the first adenocarcinoma of the nose and 48 years after the first occupational exposure to wood dust.

CASE REPORT

The patient was a 68 year old man presenting in 1998 with a history of recurring bleeding from the left side of the nose. Nineteen years earlier (1979) an intestinal type adenocarcinoma of the right sinonasal tract was diagnosed and treated by surgical resection of the tumor followed by postoperative radiotherapy. Between 1950 and 1960 the patient worked in a furniture company and was exposed to wood dust. Computertomographic evaluation showed a tumor of the left ethmoid area invading the sinus maxillaris and the septum (Figure 1). Histological evaluation of a biopsy revealed the diagnosis of an intestinal type adenocarcinoma (Figure 2). Immunohistochemically the tumor

cells stained for CK20 but not for CK7, showing the same characteristics usually found in adenocarcinomas of the colorectal area. The patient was treated surgically by a bifrontal osteoplastic approach and a temporary resection of the bony nasoethmoidal complex. The whole anterior skull base had to be removed due to invasion by the adenocarcinoma. The patient recovered completely, and during a follow-up of 12 months no recurrence of the tumor occurred.



Figure 1. Coronal CT image showing a tumor of the left ethmoid area.

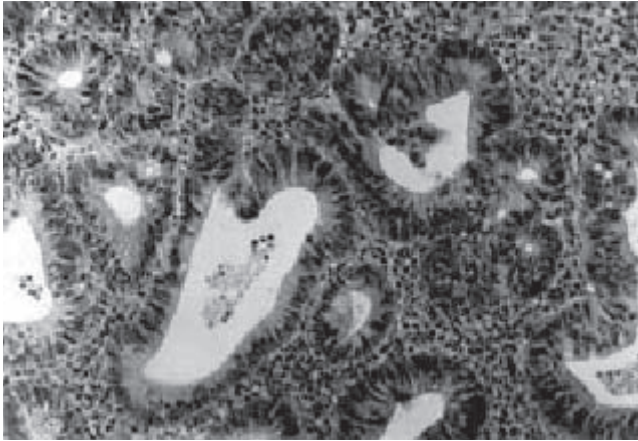


Figure 2. Intestinal type adenocarcinoma of the sinonasal tract (papillary type). Hämatoxylin-Eosin staining (300 x).

DISCUSSION

A high risk of adenocarcinoma of the nose is associated with employment in wood-related occupations. Histologically the papillary tubular cylinder cell adenocarcinoma is the most frequently occurring type, while alveolar goblet cell and signet ring cell adenocarcinoma are rarer types (Kleinsasser and Schroeder, 1988). The treatment generally recommended is surgery and radiotherapy (Svane-Knudsen et al., 1998). The prognosis is relatively favorable compared with squamous cell carcinoma (Harbo et al., 1997). The mean period of latency for development of sinonasal adenocarcinoma is in the order of 40 years (Engzell, 1979). The occurrence of an intestinal type adenocarcinoma of the sinonasal tract 19 years after the treatment of a nasal tumor with the same histological classification raises the question if the new tumor is a relapse or a second primary tumor. Recurrence of the tumor diagnosed in 1979 seems rather unlikely because of the long follow-up period with no signs of tumor relapse. Because of the wide range of the latency period between the first exposure to wood dust and the diagnosis of nasal adenocarcinoma (up to 70 years), the development of a second primary tumor seems possible (Nylander and Dement, 1993). In the presented case the second primary tumor was diagnosed after a latency period of 48 years. Histologically both tumors are papillary adenocarcinomas, which is the form most often associated with wood dust exposure. This case of a second primary adenocarcinoma of the nose associated with wood dust exposure emphasizes the usefulness of a lifelong follow-up of patients with adenocarcinoma of the nose.

REFERENCES

1. Acheson ED, Cowdell RH, Hadfield E, Macbeth RG (1968) Nasal cancer in wood workers in the furniture industry. *Br Med J* 2:587-596.
2. Engzell U (1979) Occupational etiology and nasal cancer. An inter-ordic project. *Acta Otolaryngol Suppl Stockh* 360:126-128.
3. Harbo G, Grau C, Bundgaard T, Overgaard M, Elbrond O, Sogaard H, Overgaard J (1997) Cancer of the nasal cavity and paranasal sinuses. A clinico-pathological study of 277 patients. *Acta Oncol* 36:45-50.
4. Kleinsasser O, Schroeder HG (1988) Adenocarcinomas of the inner nose after exposure to wood dust. Morphological findings and relationships between histopathology and clinical behavior in 79 cases. *Eur Arch Otorhinolaryngol* 245:1-15.
5. Macbeth R (1965) Malignant disease of the paranasal sinuses. *J Laryngol* 79:592-612.
6. Nylander LA, Dement JM (1993) Carcinogenic effects of wood dust: review and discussion. *Am J Ind Med* 24:619-647.
7. Svane-Knudsen V, Jorgensen KE, Hansen O, Lindgren A, Marker P (1998) Cancer of the nasal cavity and paranasal sinuses: a series of 115 patients. *Rhinology* 36:12-14.

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