

## Letter

# Undifferentiated Nasopharyngeal-type Carcinoma in a Nurse Handling Cytostatic Agents

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IN SEPTEMBER 1991 a 31 year-old woman, mother of two healthy boys aged 4 and 8 years, working as nurse in a general hospital, was admitted bearing a painless mass of the neck with a diameter of 4 cm. The patient believed the mass to have been present for 2.5 months.

There was no associated dysphagia, respiratory or bleeding complaints. She had no constitutional symptoms, and the past medical history was unremarkable. A fibre optic panendoscopy revealed a little lesion in the superior wall of the nasopharynx. The microscopic examination of the cavum biopsy specimen revealed the lesion to be an undifferentiated carcinoma of the nasopharyngeal type.

The virological profile was as follows: Epstein-Barr virus: VCA IgG (immunofluorescent method) + 1:160 (n.v. < 1:40); VCA IgM (immunoenzymatic method) = negative; anti-EBNA(EBV) IgG + 1:640 (n.v. < 1:10); HBsAg, HBsAg and HBcAg antibodies = negative.

Head and neck CT and MRI confirmed the neck adenopathy.

A complete physical examination was normal, as were chest radiography, blood count, multiphasic profile, abdominal ultrasonography, and bone scan. The lesion was staged as T1N2M0.

Radiation therapy was performed from October to December 1991 with a minimum tumour dose of 70 Gy; at the last follow-up in July 1992 the patient was disease-free.

We hypothesise the possible co-carcinogenetic role of an occupational exposure to cytostatic agents.

The patient had never visited endemic regions for nasopharyngeal carcinoma and there was no cancer-history in her family. She had been working for 12 years in a general hospital and in the last 7 years she had been employed in a clinical

oncological department. She used to manipulate antitubercular drugs for about 2 h/day for 5-6 days a week; the drugs more frequently used were cyclophosphamide, 5-fluorouracil, methotrexate, doxorubicin, vincristine, and bleomycin.

The patient did not wear surgical gloves, mask and gown with cuffs and she had no hood in her service.

She reported no history of spontaneous abortion.

In undifferentiated nasopharyngeal-type carcinoma the Epstein-Barr virus pathogenetic role is a necessary but non-sufficient cause and among the co-carcinogenetic factors literature reports the follows: nitrosamines, smokes, ashes, croton oil, euphorbiaceae extracts, formolic esters, caoutchouc, and some plastic substances [1].

Almost all these substances have shown a mutagenic activity able to induce neoplastic cell proliferation, especially if the cells are previously infected by oncogenic viruses [1].

In our case many of the drugs manipulated by the patient are mutagenic and able to induce chromosomal damage, especially if the handling nurse fails to observe precautionary measures [2].

Literature underlines the direct relationship between the exposure duration and the probability of chromosomal damage [2].

In conclusion we suggest that cytostatic agents might have played a co-carcinogenetic role in this case.

1. Simons MJ, Shanmugaratnam K. The biology of nasopharyngeal carcinoma. UICC Technical Report Series, UICC Geneva, 1982, 71.
2. Waksvik H, Klepp O, Brogger A. Chromosome analyses of nurses handling cytostatic agents. *Cancer Treat Rep* 1981, 65, 607-610.

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