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Non-Hodgkin lymphoma of the testis and malignant mesothelioma of the pleura in the same patient

Linfoma non Hodgkin del testicolo e mesotelioma maligno della pleura nello stesso paziente

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Summary

A 73-year-old man with a history of occupational exposure to asbestos in shipbuilding industry underwent right orchiectomy for non-Hodgkin, diffuse, large B cell lymphoma. Nine months later a right pleural mesothelioma was diagnosed. At autopsy, metastatic mesothelioma of the right pleura was observed. Markers of asbestos exposure (pleural plaques and lung asbestos bodies) were detected. The co-existence of lymphoma and asbestos-related mesothelioma has repeatedly been reported. The possibility of common etiological factors (immune impairment induced by asbestos) has to be considered. Eur. J. Oncol., 15 (3-4), 167-171, 2010

Key words: **non-Hodgkin lymphoma, testis, mesothelioma, pleura, asbestos, multiple malignancies**

Riassunto

Un uomo di 73 anni con una storia di esposizione professionale all'asbesto nell'industria navalmeccanica fu sottoposto ad orchiectomia destra per linfoma non Hodgkin, diffuso, a grandi cellule B. Nove mesi più tardi venne diagnosticato un mesotelioma maligno della pleura. All'autopsia venne riscontrato un mesotelioma pleurico destro con metastasi. Furono osservati segni di esposizione all'asbesto (placche pleuriche e presenza di corpi dell'asbesto nel tessuto polmonare). La coesistenza di un linfoma con un mesotelioma asbesto-correlato è stata ripetutamente segnalata nella letteratura e solleva la questione di possibili fattori eziologici comuni nella genesi dei due tumori (insufficienza immunitaria indotta dall'asbesto). Eur. J. Oncol., 15 (3-4), 167-171, 2010

Parole chiave: **linfoma non Hodgkin, testicolo, mesotelioma, pleura, asbesto, tumori multipli**

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Introduction

Different studies have documented the co-existence of malignant mesothelioma and other primary malignancies (1-3). If the two tumors are metachronous, the treatment for the former malignancy may represent the cause of the latter. This may be the case for mesotheliomas developing after radiotherapy (4, 5). In the cases of metachronous as well as of synchronous tumors, the possibility of common etiologic factors in the genesis of the neoplasms has to be explored.

Case report

A 73-year-old man was treated at the Hospital of Trieste in April 2007 by right orchiectomy for a large B cell, diffuse, non-Hodgkin lymphoma of the testis (fig. 1). The patient had worked as a welder for 21 years, from 1964 to 1985, in marine motor factories. Then he retired for a depressive syndrome. A Positron Emission Tomography (PET) carried out after orchiectomy showed a small suspected area in the right mediastinal pleura. A biopsy of such area, performed in July 2007, showed a fibrous tissue interpreted as benign fibrosis. A further PET examination showed a mediastinal mass, and a biopsy carried out in January 2008 revealed a biphasic malignant mesothelioma. The patient died in March 2008. At autopsy, the right pleura and lung appeared largely substituted by tumoral tissue, with histological and immunohistochemical features of biphasic mesothelioma (figs. 2-3). Metastases also involved the mediastinal dias, perigastric, peripancreatic, and lomboaortic lymph nodes. Left pleura showed large hyaline plaques. Other autoptic findings were suppurating mediastinitis, left pleuritis and pericarditis. The examination of routine histological lung sections showed rare asbestos bodies.

Discussion

The relationship between asbestos exposure and malignant mesothelioma is well known (6). However, a lot of enigmatic points remain in the pathogenesis of asbestos-related mesothelioma (7, 8). The association of mesothelioma with other pathological conditions, notably with other primary malignancies, may offer clues in understanding the role of co-factors in mesothelioma pathogenesis (7).

In the present case the tumor associated with mesothelioma is an extra-nodal non-Hodgkin

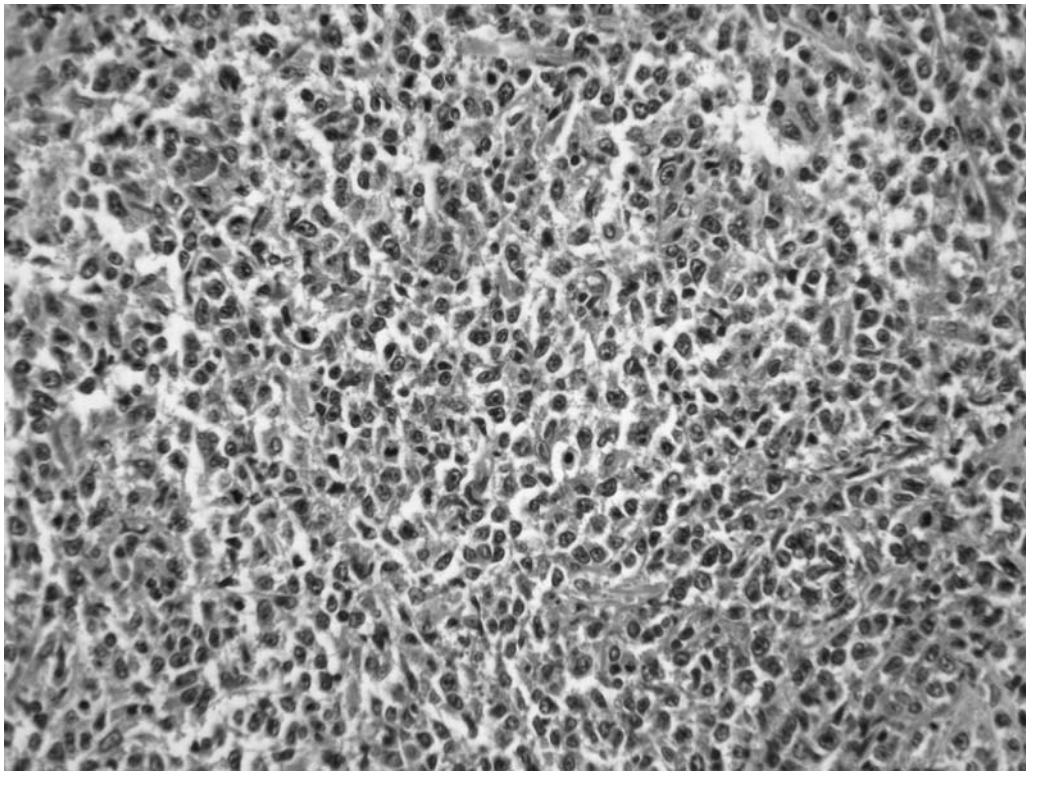

Fig. 1. Histological appearance of the testicular neoplasm. Sheets of large, atypical, lymphoid cells are visible. Hematoxylin-eosin 400x

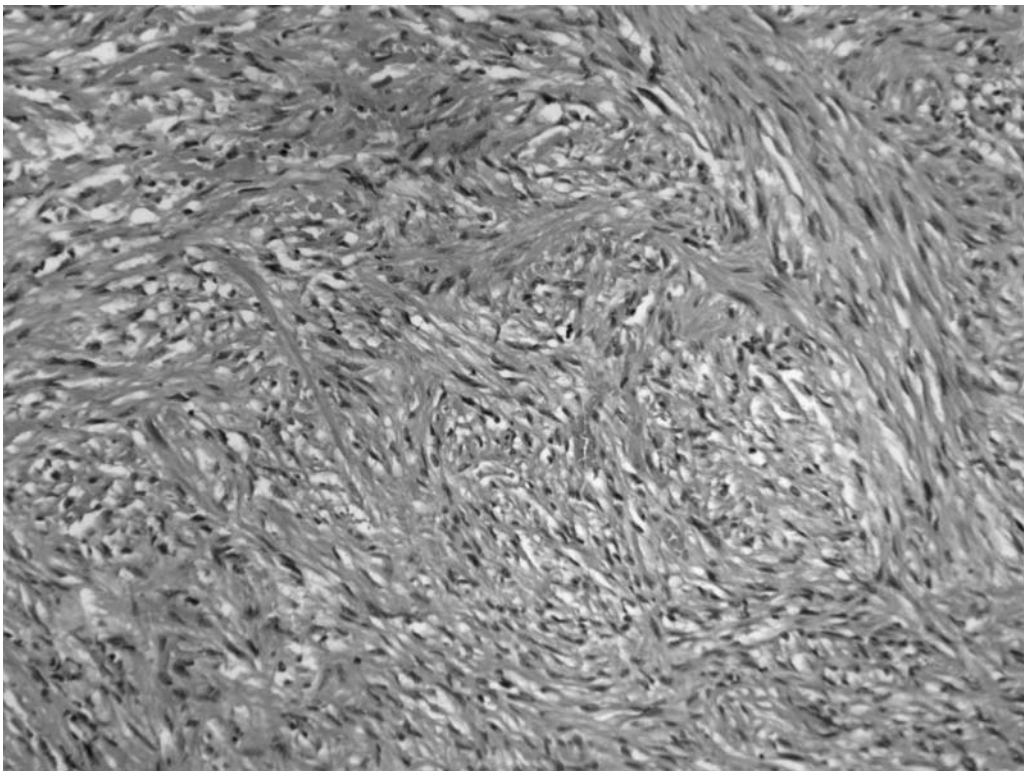

Fig. 2. Histological appearance of the pleural tumor. Bundles of spindle cells. Hematoxylin-eosin 200x

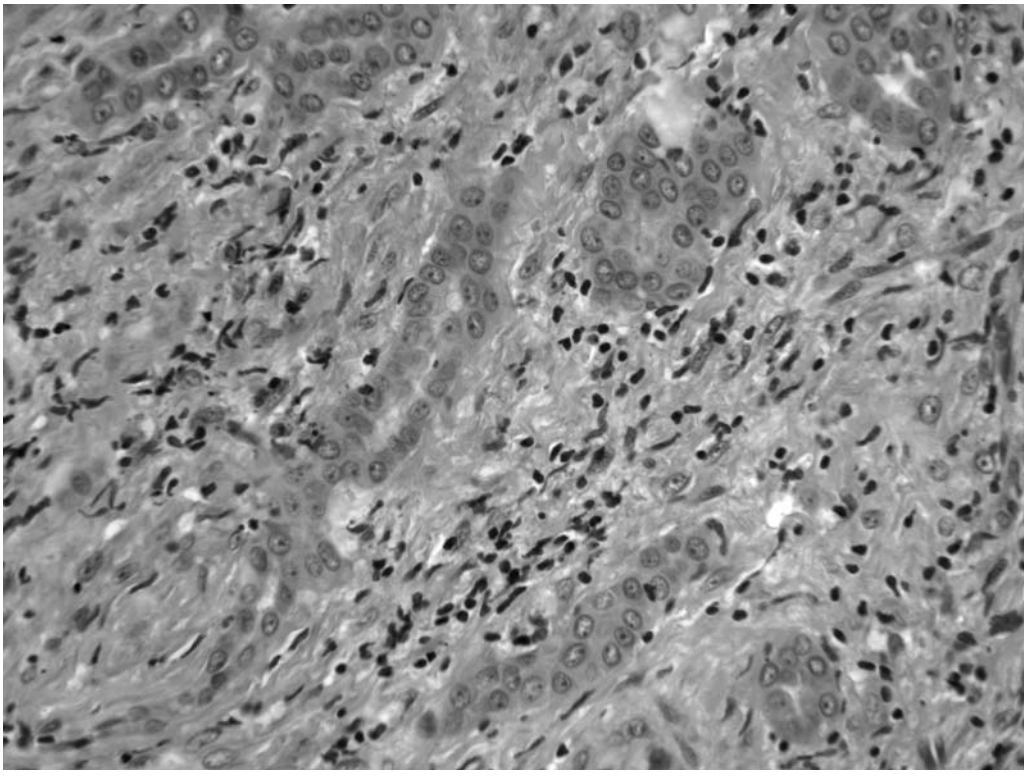

Fig. 3. Histological appearance of the pleural tumor. Tubular structures are visible in some areas. Hematoxylin-eosin 400x

lymphoma. A number of known or suspected risk factors for non-Hodgkin lymphoma, including immunosuppression are present (9). Among people with severe immune impairment, such as patients with HIV/AIDS and immunosuppressed patients after solid organ transplantation, the incidence of non-Hodgkin lymphomas is significantly increased (10). Lymphomas developing at extra-nodal sites appear particularly frequent among immunosuppressed people.

Asbestos may induce complex alterations in immune system (11-13). It has been suggested that just through a decline of immune system, asbestos might induce mesothelioma (8, 13). If this was true, a common denominator could exist in the pathogenesis of the two malignancies observed in the present case.

The possible relationship between asbestos and development of non-Hodgkin lymphoma has been the object of research and discussion for decades. In a review of the literature performed in 2001, Becker *et al.* stated that "taken together, the available epidemiological studies do provide indications of an increased risk of lymphomas under asbestos exposure" (14). At present, lymphoma is not included in the official list of asbestos-related malignancies (6), and recent epidemiological investigations gave contrasting results (15, 16).

At any rate, the criterion of the biological plausibility supports the idea that an etiologic relationship asbestos-lymphoma exists. In addition, the co-existence of asbestos-related mesothelioma and non-Hodgkin lymphoma has been documented in many cases (3, 17-22). Chronic lymphocytic leukemia and plasmocytomas have also been reported in association with mesothelioma (3, 23, 24). It seems difficult to attribute such occurrences to mere coincidences.

In this context, it is also of interest that an increase of multiple malignancies has been observed among asbestos exposed people in some studies (25).

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