Primitive Squamous-Cell Carcinoma of the Pleura in a Patient Exposed to Asbestos

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Abstract

This report describes an unusual case of primary carcinoma of the pleura in a patient occupationally exposed to asbestos. Clinical and radiological findings strongly supported a diagnosis of malignant mesothelioma but incisional biopsy and definitive surgical excision showed the uncommon finding of a primitive squamous-cell carcinoma of the pleura.

Keywords: Pleura; Carcinoma; Asbestos

Introduction

In medical literature there are few reports on primary pleural malignancy other than mesothelioma. In the present study an unusual case of cancer is described.

Case Presentation

A 65-year-old man was referred to our Hospital for recurrent pleural effusions. He had been a smoker and paper mill worker and his past medical or oncological history was negative.

After admission he underwent total body computed tomography/positron emission tomography scan (TC/PET) which showed radiographic features and uptake values consistent with pleural involvement by malignant mesothelioma (Figure 1).

During thoracoscopy a serious effusion and pleural nodules were seen.

Histological examination of the pleural samples showed a large amount of squamous metaplasia with verrucous appearance, and large amount of keratin with hyper and parakeratotic horns, associated with area of dysplasia and areas of squamous keratinizing carcinoma (Figure 2).

Complete immunohistochemical panel of reaction was performed showing positive epithelial markers (p63, CK7, CK CAM 5.2) and negative mesothelial marker (calretinin, WT1, vimentine).

A thorough work-up failed to detect any primary epidermoidal carcinoma and therefore a diagnosis of primitive squamous-cell carcinoma of the pleura was made.

Grossly, after performing an extended pleuro-pneumonectomy with curative intent, parietal pleura showed coalescence of white nodules to form plaques. Dense white tumour encased the lung, involving visceral pleura and spreading into peripheral pulmonary parenchyma ab extrinseco (Figure 3).

The remaining lung and bronchial tree was widely examined and failed to show any pathological finding suggesting primitive pulmonary cancer, thus confirming our previous conclusion.

Three months after an eventless discharge the patient suffered from a late bronchopleural fistula which finally led to progressive sepsis and decease.

Discussion

Microscopically, the tumour consisted of diffuse infiltration of the sub-serous tissue by squamous keratinizing carcinoma at first suggesting pleural involvement by distant metastasis.

Only the definitive clinical work-up and the absence of other primitive malignancy supported our diagnosis of squamous-cell carcinoma of the pleura.
A similar case was first described in 1690 by Bruce T et al. [1] in a patient with a history of extrapleural pneumothorax for pulmonary tuberculosis. The same finding was subsequently confirmed by other authors [2].

Related reports illustrate pleural carcinoma arising in patients with chronic empyema [3], bronchopleural fistula [4] or following pneumonectomy for tuberculosis [5], hydatid disease [6] or lung carcinoma [7].

In these cases authors [6] also hypothesized that chronic inflammation led to neoplastic transformation through metaplastic pleura [8].

As far as we know this could be one of the very rare cases of primitive squamous carcinoma of the pleura unrelated to known chronic inflammation or previous surgery, unless long-lasting asbestos exposure could be the only etiopathogenetic factor leading to asymptomatic persistent inflammation.

References