



Malignant Pleural Mesothelioma in Women: A Case Report

Nahidi M*, Arfaoui H, Fazazi I, El Khattabi W, Bamha H, Msika S, Bougteb N, Jabri H and Affi MH

Department of Respiratory Diseases, 20 August 1953 Hospital, Casablanca, Morocco

Abstract

Pleural mesothelioma is a primary malignant tumor of the pleura whose origin is multifactorial. Exposure to asbestos in the home or at work is the main risk factor incriminated in the pathophysiology of pleural mesothelioma. Occupational exposure makes this pathology a notifiable disease. Diagnosis is histological by thoracoscopy, but histopathological study is difficult because pleural mesothelioma has a broad morphological spectrum and poses a problem of differential diagnosis with several pleural pathologies. Thoracoscopy is the main method of extension assessment, but new imaging methods are enabling better staging. Treatment is based on surgery whenever possible. In non-operable patients and for unresectable tumors, treatment is based on chemotherapy, radiotherapy, immunotherapy and palliative care. Survival depends on prognostic factors.

We report the case of a patient who presented with malignant pleural mesothelioma after exposure to asbestos from her home, with a rapidly unfavorable evolution.

Introduction

Mesothelioma is a primary tumor of the serous membranes, including the pleura. It is the result of several genetic and environmental factors, such as exposure to asbestos, certain viruses and exposure to ionizing radiation [1].

This pathology is characterized by latency and difficult diagnosis, due to the wide morphological spectrum of pleural mesothelioma, with several differential diagnoses, including solitary pleural fibroma, sarcomas and carcinoma metastases. Diagnosis relies mainly on thoracoscopy. Treatment is often palliative.

We report a case of malignant pleural mesothelioma in a woman due to environmental exposure through her home.

Observation

The patient is a 66-year-old housewife. She has no toxic habits and no respiratory history. She is being followed for well-balanced insulin-dependent diabetes and a hemostasis hysterectomy in 2016 in the operative sequelae were simple. She lived under a fibrocement roof for 30 years before moving to a modern apartment.

The patient consulted us with an initially minimal but progressive dyspnea, which became worse with the slightest effort, with bilateral anterior chest pain of the heaviness type and a dry cough that had been evolving for 20 days. The patient's general condition was not preserved, but she reported no febrile sensations or other associated signs. On clinical examination, the patient was altered (PS: 2), eupneic, with 95% room air saturation. She was tachycardic at 107 beats per minute. All other vital signs were normal. Chest X-ray showed elevation of the right diaphragmatic dome (Figure 1). Thoracic ultrasound showed a right anechoic fluid effusion of moderate size (Figure 2). Pleural fluid analysis on the right showed a predominantly lymphocytic, citrine-yellow exudate with sterile bacteriological cultures.

Given the patient's poor general condition, thoracoscopy was not performed, and pleural biopsy was the only means of diagnosis, with the puncture holes marked with India ink. But at this stage, neoplasia was the most likely cause, notably a secondary localization of a thoracic or extrathoracic neoplasia, given the patient's history of undocumented hysterectomy, or a malignant pleural mesothelioma, given the patient's age, 10 years' exposure to asbestos and 30-year latency period, or a thoracic determination of a hematological malignancy. Other possible etiologies included infectious, autoimmune and vascular, but these are less likely.



WebLog Open Access Publications
Article ID : wjprm.2026.c1305
Author : Mohammed Nahidi

OPEN ACCESS

*Correspondence:

Mohammed Nahidi, Department of Respiratory Diseases, 20 August 1953 Hospital, Casablanca, Morocco, Tel: 0766730961;

E-mail: nahidisimo@hotmail.com

Received Date: 20 Feb 2026

Accepted Date: 11 Mar 2026

Published Date: 13 Mar 2026

Citation:

Nahidi M, Arfaoui H, Fazazi I, El Khattabi W, Bamha H, Msika S, et al. Malignant Pleural Mesothelioma in Women: A Case Report. *WebLog J Pulmonol Respir Res.* wjprm.2026.c1305. <https://doi.org/10.5281/zenodo.19270688>

Copyright© 2026 Mohammed

Nahidi. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



Figure 1: Front chest X-ray.



Figure 2: Thoracic ultrasound.

The initial blood count showed a hyperleukocytosis of 13,420/mm³ made up mainly of neutrophils at 9,100/mm³. Other blood lines were normal. CRP was slightly elevated at 11 mg/l. Chest CT showed bilateral mamelinated and partially calcified pleural thickening measuring 14 mm on the right and 8 mm on the left, with right upper lobar atelectasis (Figure 3). A few ground-glass areas and a small focus of bronchiectasis in the same lobe were also noted, with no mediastinal adenopathy and a moderate right pleural effusion (Figure 3).

Flexible bronchoscopy showed diffuse bronchial inflammation. Bronchial biopsies were non-specific, geneXpert in bronchial aspirates did not detect MTB, and bacteriological cultures were sterile.

Histological study of the pleural biopsy revealed malignant tumour proliferation, suggesting epithelioid malignant pleural mesothelioma, with WT1 and calretinin positive on immunohistochemistry and TTF1 negative.

At this stage, the diagnosis of epithelioid pleural mesothelioma was retained and, according to the TNM classification (UICC 8th edition), the tumour was unresectable. The tumor was classified as T4 N0 Mx, as extension work-up was not feasible given the patient's general condition. She was at stage IIIB or IV, and by applying the prognostic score (according to EORTC) the patient had 3 poor prognostic factors (altered general condition, dyspnea, hyperleukocytosis). According to the EORTC score, one-year survival was estimated at 12%.

The patient's medical file was discussed at a thoracic oncology meeting and the following therapeutic management was agreed:

Start systemic chemotherapy

- Cisplatin 75 mg/m² - pemetrexed 500 mg/m² administered every 3 weeks with vitamin B12 (1000 µg IM every 9 weeks) and B9 (350 to 1000 µg/day) supplementation to be started at least 7 days before the start of chemotherapy.
- Radiotherapy on the pleural biopsy pathway is not indicated according to current recommendations.
- Pleural symphysis using talcum powder, given the recurrent nature of the pleurisy.
- Nutritional management and palliative care.

The patient underwent two sessions of chemotherapy according to the aforementioned protocol with pleural symphysis, but the evolution was marked by the persistence of pain despite morphine treatments, with increased radiological lesions on the follow-up thoracic CT scan after 1 month (Figure 4). The patient died 6 months after diagnosis.

Discussion

Malignant mesothelioma is a primary tumor of the serous membranes, essentially the pleura, but also the peritoneum and pericardium. There are many risk factors, including exposure to asbestos and ionizing radiation, certain viruses, and genetic factors

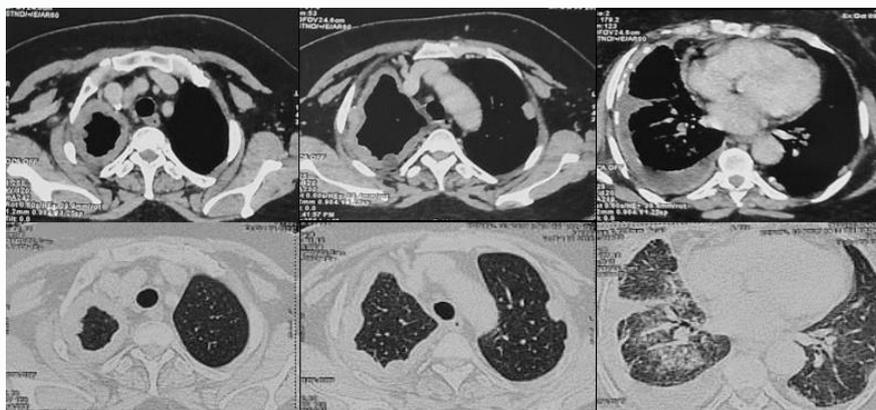


Figure 3: Chest CT scan.

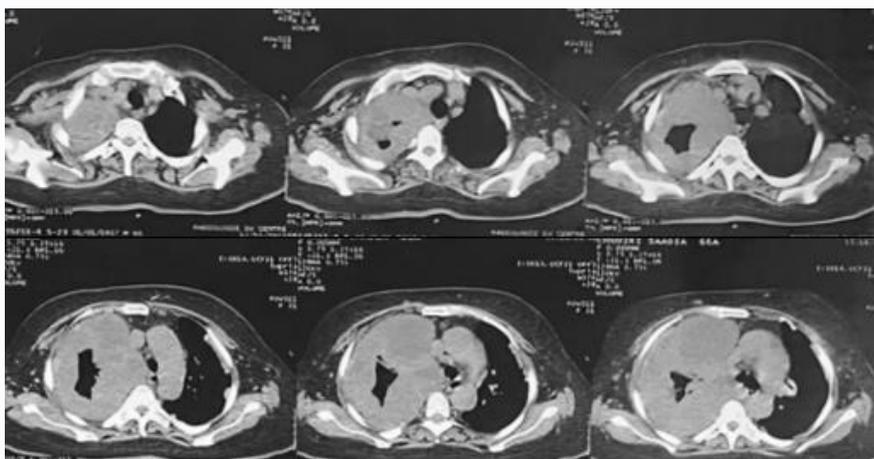


Figure 4: Control chest CT scan.

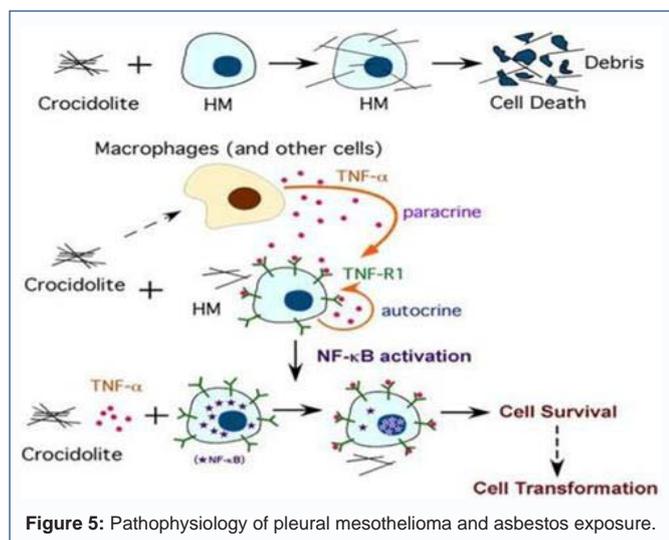


Figure 5: Pathophysiology of pleural mesothelioma and asbestos exposure.

such as acquired mutations due to loss of BAP1 or germline expression, hence the need for oncogenetic consultation. Occupational exposure to asbestos makes this pathology a notifiable disease.

Pathophysiology [1]

Exposure to asbestos: The dose-dependent toxicity of asbestos fibers is responsible for cell death, but TNF alpha and nuclear factor Kappa B signaling will be responsible for an excessive inflammatory response by monocolated phagocytes, with phagocytosis of asbestos, TNF-R1 receptor expression and excessive TNF alpha secretion activating the nuclear factor Kappa B pathway responsible for the survival of cells carrying genetic alterations (Figure 5).

Simian virus SV40: This is a monkey DNA virus transmitted to humans via the polio vaccine contaminated between 1955 and 1978. This virus is responsible for the production of oncogenic proteins that inactivate p53 and pRb proteins, leading to carcinogenesis.

Other factors: Erionite, ionizing radiation, genetic factors...

Epidemiology

It is a rare tumor affecting 800-1000 people/year in France and 3.4/100,000 people in Great Britain [2].

In Morocco its incidence is less well known, but a series published

in 2019 showed that pleural mesothelioma cases represented 0.1% of cancers followed up in the oncology department at the CHU de Fès between 2011 and 2019 [3]. It is a pathology characterized by a male predominance with an incidence in men of 16 cases/10⁶ and a mortality: of 43,000 people/year worldwide [2].

Diagnosis

Diagnosis of pleural mesothelioma is based on thoracoscopy, which allows a diagnosis of mesothelioma in over 90% of cases, and pleural talcation, except in cases of diagnostic doubt. Histological diagnosis is difficult, given the wide morphological spectrum of pleural mesothelioma and the wide range of differential diagnoses, such as carcinoma metastases (bronchial adenocarcinoma in its pseudo-mesotheliomatous form, breast cancer in epithelioid forms), primary or secondary sarcomas (sarcomatoid or biphasic), solitary pleural fibroma and certain inflammatory pathologies (non- tumoral pleural fibrosis, atypical mesothelial hyperplasia) [2].

Prognostic factors

According to EORTC, the prognostic factors for pleural mesothelioma are age > 75 years, general signs: elevated PS, weight loss, functional signs such as chest pain and dyspnea, and biological signs (anemia, thrombocytosis, hyperleukocytosis, non-epithelioid histology). The presence of more than 2 factors limits one-year survival to just 12% [2].

Extensional assessment

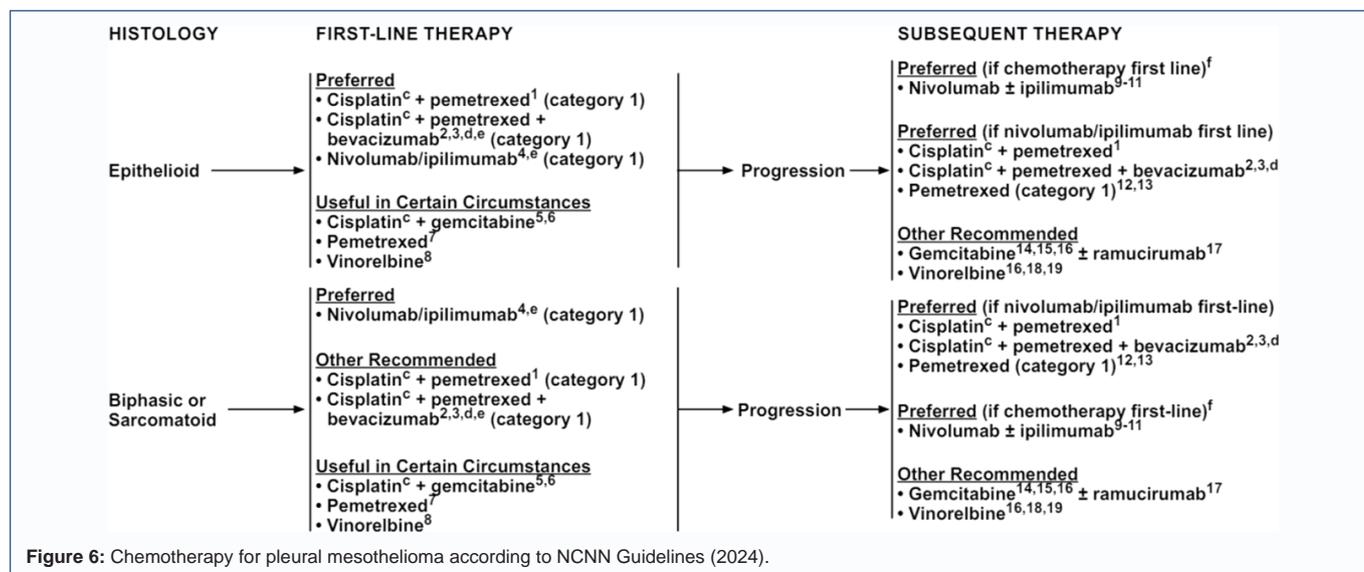
Thoracoscopy is the mainstay of extension assessment, but other examinations may also be performed.

Pet-scan: Assesses parietal involvement, lymph node extension and extrathoracic involvement. This examination has prognostic value and can be used to assess response to chemotherapy [2].

Injected thoracic CT: Allows assessment of the visceral, parietal and diaphragmatic pleura, as well as mediastinal lymph node, cardiac and large-vessel involvement [2].

Treatment

For resectable tumors in operable patients, treatment is essentially surgical, depending on the stage, with pleural symphysis and adjuvant therapy such as intensity-modulated radiotherapy (IMRT), chemotherapy and immunotherapy. Adjuvant treatment depends on histological type (Figure 6).



In unresectable tumors or in patients who cannot be operated on, treatment is based on chemotherapy, radiotherapy and palliative care.

Recent studies have used new techniques

Intrapleural chemotherapy: With high local concentrations of cytotoxics and reduced systemic side effects. Studies show that penetration is limited to a few millimeters, and intrapleural chemotherapy after pleurectomy-decortication does not appear to be sufficient to reduce the frequency of local relapses.

Intra-pleural dynamic phototherapy (PDT): Based on the prior administration of a photosensitizer and illumination of the pleural cavity by a light source at a precise wavelength. This is responsible for lysis of residual tumour cells, with an anti-tumour immune response.

Other studies are currently being evaluated, such as targeted therapies, cell-based therapies and anti-tumor vaccination.

Conclusion

Malignant pleural mesothelioma is a primary neoplastic pathology of the pleura with a multifactorial etiology. It is more common in males and the elderly. Exposure to asbestos is the main cause of

pleural mesothelioma. It is a dose-dependent exposure with a complex pathophysiology. Occupational exposure makes this a notifiable disease. Diagnosis relies mainly on thoracoscopy, but this is not always feasible, particularly in impaired subjects. Histological diagnosis is difficult, given the broad morphological spectrum of mesothelioma and the wide range of differential diagnoses. Thoracoscopy is used to assess extension, with additional support from thoracic CT and pet-scan. Treatment is based on surgery, palliative care and adjuvant therapies such as chemotherapy, radiotherapy and immunotherapy. Survival depends on clinical and biological risk factors.

References

1. Carbone, et al. The pathogenesis of mesothelioma. *Seminars in Diagnostic Pathology*. 2006.
2. Locatelli-Sanchez M, et al. Référentiel sur le Mésothéliome de la plèvre. ARISTOT. 2024.
3. Haita Abdelkrim et al. Management of malignant pleural mesothelioma. Thesis n° 99/19. 2019.