Local Pleural Malignant Mesothelioma: Differential Diagnosis

LOKAL PLEVRAL MALİGN MEZOTELYOMA

M. Cumhur SİVRİKOZ, MD,[a] Hüseyin YILDIRIM, MD,[b] M. Cumhur TULAY, MD,[a]
Sare KABUKÇUOĞLU, MD,[c] Muzaffer METİNTAŞ, MD[b]

Departments of [a]Thoracic Surgery, [b]Thoracic Diseases, [c]Pathology, Eskişehir Osmangazi University, School of Medicine, ESKİŞEHİR

Abstract

Primary pleural neoplasms are very rare and most of them are malignant mesotheliomas. While diffuse mesotheliomas generally have malignant potential, local pleural lesions are often benign. We present a rare case of localized pleural malignant mesothelioma with immunohistochemical and microscopic findings.

Key Word: Mesothelioma; pleura

Özet

Primer pleural neoplazmlar nadirdir ve birçoğu malign mezotelyomalardır. Diffüz tip mezotelyomalar genellikle malign potansiyele sahiptir. Lokal plevral lezyonlar genelde benigndir. İmmünohistokimyasal ve mikroskobik bulgular ile birlikte nadir görülen lokal pleural malign mezotelyoma olgusunu sunuyoruz.

Anahtar Kelimeler: Mezotelyoma; plevra

Turkiye Klinikleri J Med Sci 2007, 27:800-801

A 72-year-old male presented to the hospital with chest pain. He had asbestosis exposure in his medical history. On physical examination, a mass with 5 x 5 cm diameter was palpated under the left scapula. A mass lesion of pleural origin of the left hemithorax was apparent on chest radiography. On computed tomography, a mass lesion which was approximately 6.5 x 4.5 cm in diameter with invasion to 6th and 7th ribs was observed (Figure 1). Transthoracic biopsy from the lesion revealed biphasic malignant mesothelioma.

Left posterolateral thoracotomy revealed a mass lesion with 7 x 5 cm diameter that had no invasion to extra-thoracic structures. The 5th-8th ribs were resected by en-bloc resection. We performed wedge resection to the lesion, which was located on the lung parenchyma. Adjacent pleura and parenchyma regions seemed clear macroscopically. The pathological report of the resected lesion confirmed the diagnosis. The patient experienced local recurrence 10 months after the operation.

Pathological Findings

Diffuse infiltration of spindle shaped atypical cells and sarcomatoid fields in some areas were present on pathology specimens obtained by transthoracic biopsy and surgical resection (Figure 2). Epithelial membrane antigen (EMA), calretinin, CK5-6, pancytokeratin and high molecular weight keratin were widespread and strongly positive upon immunohistochemical examination. Thyroid transcription factor-1 (TTF-1), CD-99, CD-34, carcinoembryonic antigen (CEA), CD-15, BerEP4, PSA, Mucin were negative. The lesion was diagnosed as biphasic malignant mesothelioma.

Pleural malignant mesotheliomas typically progress as either multiple pleural nodules or diffuse pleural tumoural lesions. In addition, a localized tumoral lesion of the pleura is very rare and local ones are often benign.[1] We present a

Geliş Tarihi/*Received:* 29.06.2006 **Kabul Tarihi/*Accepted:*** 16.10.2006

This case was represented at International Musothelioma Symposim in Antalya/Turkey. At Nowember 23-26, 2005.

Yazışma Adresi/*Correspondence:* M. Cumhur SİVRİKOZ, MD
Eskişehir Osmangazi University, School of Medicine,
Thoracic Surgery, ESKİŞEHİR
mcumhurs@hotmail.com

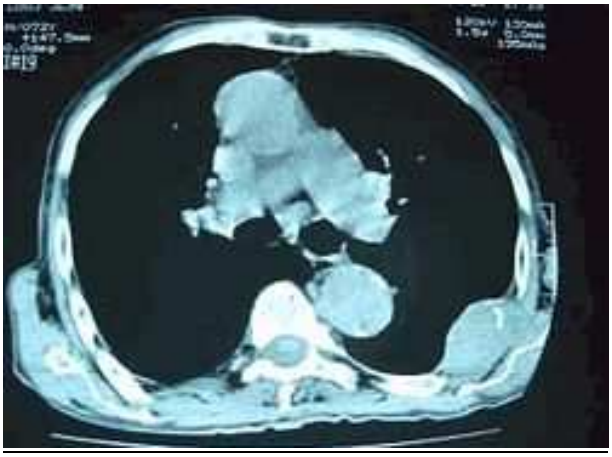

Figure 1. Mass lesion of pleural origin of the left hemithorax on thorax CT.

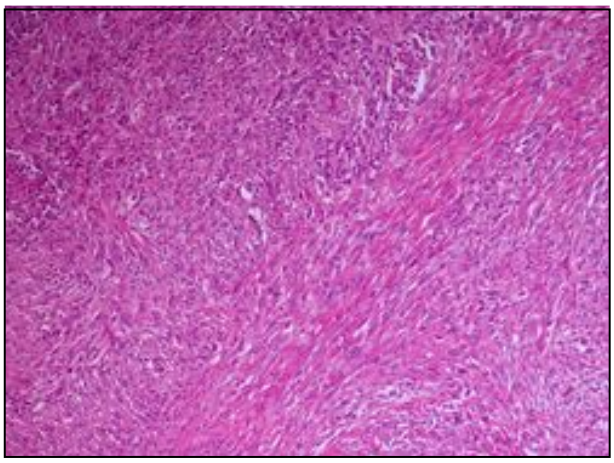

Figure 2. Diffuse infiltration of spindle shaped atypical cells and sarcomatoid fields in some areas on pathology specimens. (HE X 200).

case of localized pleural malignant mesothelioma with immunohistochemical and microscopic findings.

Localized pleural malignant mesothelioma must be distinguished from benign localized pleural mesothelioma, solitary fibrous tumour of the pleura, synovial sarcomas and peripheral lung cancer (especially adenocarcinoma).

Differentiation of benign and malign localized pleural mesothelioma is only possible by histochemical examination. Although localized benign forms generally contain calcified areas, localized malign forms include significantly sarcomatoid and atypical epithelial fields.[2,3]

Solitary fibrous tumour of the pleura originates from the submesothelial connective tissue and does not generally contain mesothelial cell components. Solitary fibrous tumours are positively stained for vimentin and negatively stained for cytokeratin by the immunohistochemial method.[4]

Synovial sarcomas are differentiated from pleural malignant mesotheliomas by their mucinous component. In addition, immunohistochemically, they are positively stained for CD-34 and bcl-2, most are positive for EMA and some types of synovial sarcomas are positive for CEA and vimentin. Immunohistochemical studies of adenocarcinomas show that the pathologic cells are positive for CEA and TTF-1 and are negative for calretinin. Additionally, adenocarcinomas seldom include sarcomatoid fields.[5]

We present local pleural malignant mesothelioma, which was strongly positive for EMA, calretinin, CK5-6, pancytokeratin and high molecular weight keratin immunohistochemically. Furthermore, diffuse infiltration of spindle shaped atypical cells and sarcomatoid fields in some areas were present on pathology specimens.

Survival of local malignant pleural mesothelioma depends on extensive and complete resection. If complete resection is not possible, radiation therapy may be applied. Reports indicated that median survival after incomplete resection was seven months.[1]

REFERENCES

1. Erkiliç S, Sari I, Tunçözgür B. Localized pleural malignant mesothelioma. Pathol Int 2001;51:812-5.
2. Martini N, McCormack PM, Bains MS, Kaiser LR, Burt ME, Hilaris BS. Pleural mesothelioma. Ann Thorac Surg 1987;43:113-20.
3. Robinson LA, Reilly RB. Localized pleural mesothelioma. The clinical spectrum. Chest 1994;106:1611-5.
4. England DM, Hochholzer L, McCarthy MJ. Localized benign and malignant fibrous tumors of the pleura. A clinicopathologic review of 223 cases. Am J Surg Pathol 1989;13:640-58.
5. Corson JM, Weiss LM, Banks-Schlegel SP, Pinkus GS. Keratin proteins and carcinoembryonic antigen in synovial sarcomas: An immunohistochemical study of 24 cases. Hum Pathol 1984;15:615-21.