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Case Report / Olgu Sunumu

A case of surgically treated bilateral metachronous malignant pleural mesothelioma

Cerrahi olarak tedavi edilmiş iki taraflı metakron malign plevral mezotelyoma olgusu

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ABSTRACT

In this article, we present a 59-year-old male patient who was admitted to our hospital with right pleural effusion and right-sided chest pain and diagnosed as malignant pleural mesothelioma with thoracentesis and pleural biopsy. After the patient was determined to be operable, right parietal pleurectomy + pericardial resection + diaphragmatic resection were performed and four cycles of cisplatin and pemetrexed combination as adjuvant treatment were added. The patient was followed-up without any problem for three and a half years. At this time, left-sided chest pain and left-sided effusion were noticed. Tumor was negative in thoracentesis and pleural biopsy. Then, video-assisted thoracoscopic surgery was applied, which resulted in Stage 1a malignant pleural mesothelioma. Thoracoscopic parietal pleurectomy was performed with success. Four cycles of pemetrexed single-agent therapy was performed as an adjuvant treatment. The patient died of chronic obstructive pulmonary disease and heart failure in 57th month of the first and 21st month of the second operation while he was tumor free. To the best of our knowledge, this case is the first operated bilateral metachronous primary malignant pleural mesothelioma in the literature.

Keywords: Asbestosis; malign pleural mesothelioma; pleural tumor; surgery.

ÖZ

Bu yazıda, hastanemize sağ plevral efüzyon ve sağ taraflı göğüs ağrısı ile kabul edilen ve torasentez ve plevral biyopsi ile malign plevral mezotelyoma tanısı konulan 59 yaşında bir erkek hasta sunuldu. Hastanın ameliyat edilebilir olduğunun belirlenmesini takiben, sağ parietal plörektomi + perikardiyal rezeksiyon + diyafragma rezeksiyonu uygulandı ve adjuvan tedavi olarak dört siklus sisplatin ve pemetreksed kombinasyonu eklendi. Hasta üç buçuk yıl boyunca herhangi bir problem olmaksızın takip edildi. Bu dönemde, sol taraflı göğüs ağrısı ve sol taraflı efüzyon fark edildi. Torasentez ve plevral biyopside tümör negatif idi. Sonra, evre 1a malign plevral mezotelyoma ile sonuçlanan video yardımlı torakoskopik cerrahi gerçekleştirildi. Torakoskopik parietal plörektomi başarıyla uygulandı. Adjuvan tedavi olarak dört siklus pemetreksed tek ajan terapisi uygulandı. Hasta tümörsüzken birinci ameliyatın 57. ve ikincisinin 21. ayında kronik obstrüktif akciğer hastalığı ve kalp yetmezliği nedeniyle öldü. Bildiğimiz kadarıyla, bu olgu literatürdeki ilk ameliyat edilmiş iki taraflı metakron primer malign plevral mezotelyomadır.

Anahtar sözcükler: Asbestozis; malign plevral mezotelyoma; plevra tümörleri; cerrahi.

Malignant pleural mesothelioma (MPM) cases are difficult for thoracic surgeons to diagnose or specify a possible prognosis, as they exhibit symptoms similar to several other medical conditions and as we can provide a prognostic estimate only within an operative observation framework after obtaining information from frozen section after surgery of lung cancer cases.[1] We may perform extended pleuropneumonectomy, extended pleurectomy or pleurectomy alone. In this article, we present a case

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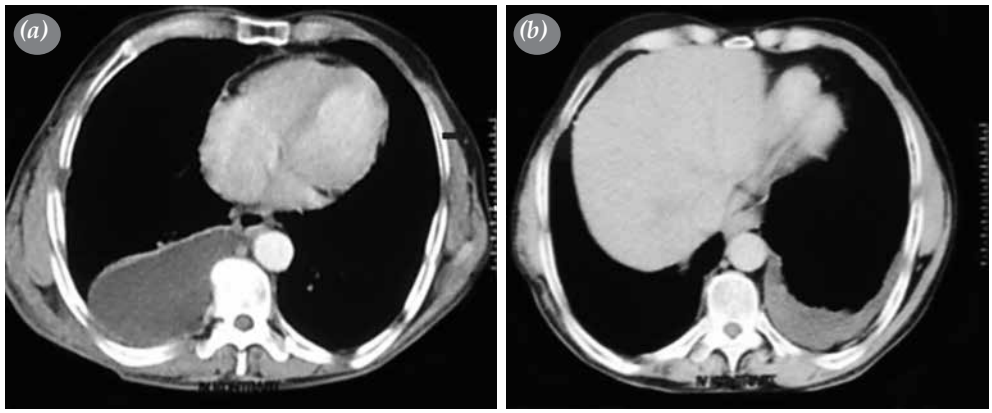

Figure 1. Chest computed tomography show pleural effusion of both sides with three-and-a-half-year interval.
(a) Right sided tumor, **(b)** left sided tumor.

of bilateral metachronous primary MPM and its surgery.

CASE REPORT

A 59-year-old male patient who was born in a part of Turkey endemic for mesothelioma, yet living in Istanbul and dealing with physical work applied to our hospital with complaints of back pain and effort-related shortness of breath. After determining effusion in posteroanterior chest radiograph, computed tomography (CT) scan was performed and localized fluid on the right side was detected posteriorly (Figure 1a). Thoracentesis and pleural biopsy were conducted and epithelial type MPM was diagnosed. Besides cardiopulmonary evaluations and routine examinations, abdominal ultrasonography (USG) and echocardiography and positron emission tomography (PET) scanning were performed and the tumor was found to be operable. A written informed consent was obtained from the patient.

Right videothoracoscopic examination revealed that the visceral pleura was intact. A decision of extended pleurectomy was established after determining nodules related to MPM on both pericardium and particularly on diaphragm. Parietal pleurectomy + total right diaphragmatic resection + ipsilateral pericardial resection operation was performed by fifth intercostal space thoracotomy. Diaphragm and pericardium were patched with mersilene mesh. Patient's postoperative period was uneventful. Pathologic evaluation showed epithelioid type malignant mesothelioma and the case was regarded as Stage 1a by having no invasion on pericardium and diaphragm.

Four cycles of chemotherapy including cisplatin 75 mg/m^2 and pemetrexed 500 mg/m^2 were applied to the patient for adjuvant treatment. No side effects of chemotherapy were seen during the implementation and the patient was followed-up after the end of treatment.

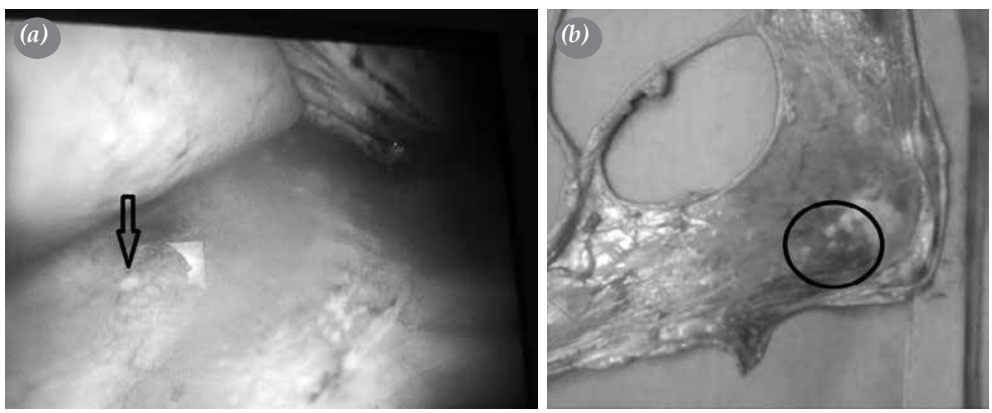

Figure 2. (a) Operative view of left side. **(b)** Several nodules could only be seen by magnification biopsied as malignant pleural mesothelioma and parietal pleurectomy material.

No sign of MPM was found in yearly PET screening and sixth month thorax CT postoperatively. The patient had no complaints. However, three and a half years after the operation, the patient re-admitted to our department with left-sided chest pain without breath shortness. Thorax CT was performed immediately and effusion was seen on the left side (Figure 1b). Following the required preparations and normal abdominal USG, diagnostic video-assisted thoracoscopic surgery was performed with the suspicion of MPM. Visceral pleura was intact. Millimetric nodular formations, of which some could only be seen in optical magnification, were found on diaphragmatic surface near mediastinal sinuses (Figure 2). Since the opposite diaphragm was resected and adhesions of left pericardium to myocardium were present due to prior operation, parietal decortication was planned at the same time and parietal pleura was resected through 10 cm lateral thoracotomy, almost completely. Malignant pleural mesothelioma was diagnosed in pathological evaluation and left side was also regarded as Stage 1a.

Left MPM is assumed as secondary primary metachronous tumor and single agent mepetrexet 500 mg/m^2 is performed. The patient died of chronic obstructive pulmonary disease and heart failure in 57th month of the first and 21st month of the second operation while he was tumor free.

DISCUSSION

The coexistence of MPM, mostly asbestos-related, and other primary malignancies has been reported in the literature.[2] Associated malignancies have been well-studied by Bianchi et al.,[2] who founded 32 (18.9%) associated organ malignancies in 169 MPM necropsy cases, involving the prostate in seven, and bladder, kidney, colon and liver in four cases; while hematologic malignancies were detected in five patients.

The simultaneous presence of two malignant mesotheliomas has been identified only in tunica vaginalis of the testis, bilaterally.[4] Also, the coexistence of pleural and peritoneal malignant mesothelioma is extremely rare, and, to our knowledge, has been published in only one article.[4] However, peritoneal MPM after extended pleurectomy (EP) or extended pleuropneumonectomy (EPP) is considered[7] as dissemination of tumor cells in the absence of peritoneum. Otherwise, it is very difficult to prove.

Second local tumoral progress following curative MPM surgery is accepted as a locoregional recurrence. Such progress is generally treated palliatively. Politi and Borzellino[5] shared their experience of 57 patients and concluded that second surgery did not provide the expected survival benefit among curative treatment strategies and therefore palliative treatment should be considered. Second surgery may be a treatment option in a subset of patients who experience a solid recurrence of MPM that is symptomatic or near vital organs and in those who cannot undergo additional radiotherapy.

Lang-Lazdunski et al.[6] also recommended cyberKnife radiosurgery for focal paravertebral recurrence after radical pleurectomy/decortication in MPM. While cytoreductive surgery in the early Stage provides a good prognostic factor, the general consensus among surgeons is that there are other unknown prognostic markers. These characteristics cause detection and management of MPM to be more difficult, making its treatment one of the most challenging in cases of tumors that can be managed by thoracic surgery.[1] Since macroscopic complete reduction was not associated with improved survival in MPM, Batirel et al.[7] indicated the need to clearly define macroscopic complete reduction and identify subgroups of patients who would benefit from this principle, because minimal versus extensive and location of gross residual disease may have different influences on survival. Local management modalities such as stereotaxic treatments, cryoablation and redo surgery, on the other hand, have promising results, but provide palliative outcomes.[8]

Under these circumstances and the above-mentioned knowledge, we could not find any bilateral surgically treated metchronous mesothelioma case report in literature. We assume that our presented case is bilateral metachronous malignant pleural mesothelioma with a three and a half year disease-free interval. The possibility of bilateral synchronous or metachronous malignant pleural mesothelioma should be kept in mind despite its rarity for operability.

Declaration of conflicting interests

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