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Case Report / Olgu Sunumu

Multiple primary malignancies

Multipl primer kanserler

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Multiple primary malignancies in different organs and tissues in the same patient are rarely encountered. Among of all the patients with a malignancy, a new primary neoplasm may develop during and/or after treatment. The incidence of more than two primary malignancies is much lower. Primary lung carcinoma was common for either case. In this article, we present two cases with triple and quadruple primary malignancies detected both metachronously or synchronously. The first case had renal adenocarcinoma and medullary thyroid carcinoma, and the second case had prostate adenocarcinoma, basal cell carcinoma of the skin, malignant solitary fibrous tumor of the mediastinum, both accompanied lung carcinoma.

Keywords: Lung cancer; multiple primary malignancy; pathology.

Multipl primer kanserler aynı hastada farklı organ ve dokularda nadiren saptanır. Tüm kanser hastalarında tedavi sırasında veya sonrasında yeni bir primer neoplazm gelişme olasılığı bulunmaktadır. İkiden fazla primer kanser görülme sıklığı ise daha düşüktür. Primer akciğer kanseri ikinci primer kanserler içinde daha sık görülür. Bu yazıda her ikisi de metakron veya senkron olarak saptanan üçlü ve dörtlü primer kanser olan iki olgu sunuldu. Birinci olguda renal adenokarsinom ve medüller tiroid kanseri, ikinci olguda prostat adenokarsinomu, ciltte bazal hücreli karsinom, mediastinal soliter fibröz tümöre ek olarak her ikisine de akciğer kanseri eşlik etmekte idi.

Anahtar sözcükler: Akciğer kanseri; multipl primer kanser; patoloji.

Developments in the therapeutic modalities of oncological patients have led to an increase in the number of the patients who survive over the long term. Thus, the risk for a new tumor occurring in the same patient has increased correspondingly, with incidence rates of between 0.7 and 11.7% having been reported for multiple primary malignancies (MPMs).[1] Although there is much published information concerning patients with double primary malignant tumors, there is little available data regarding cases with more than two primary malignancies.[1] Herein, we present two cases of MPMs that have been treated at our clinic.

CASE REPORT

Case 1– A 67-year-old male patient was admitted to our facility with fatigue and weight loss. Diagnostic examinations revealed a 12 mm mass in the left lung, and a tumor in the left kidney. We then performed a left nephrectomy, and a histopathological examination of the nephrectomy material identified type 1 papillary renal adenocarcinoma. Next, the lesion in the proximal lateral basal segment of the lower lobe of the left lung (Figure 1a) was removed via a left lower lobectomy since the frozen section of the resected specimen was malignant. The histopathological examination also showed a mucoepidermoid carcinoma (Figure 1b). After two years of follow-up, a nodule in the thyroid gland was detected, and the patient underwent a subtotal thyroidectomy that revealed medullary thyroid carcinoma. Thus, a metachronous carcinoma of the thyroid was also added to the patient's diagnosis. Currently, the patient is alive and free of disease.

Case 2– A 66-year-old male patient with coronary artery pathology was admitted to our facility, and

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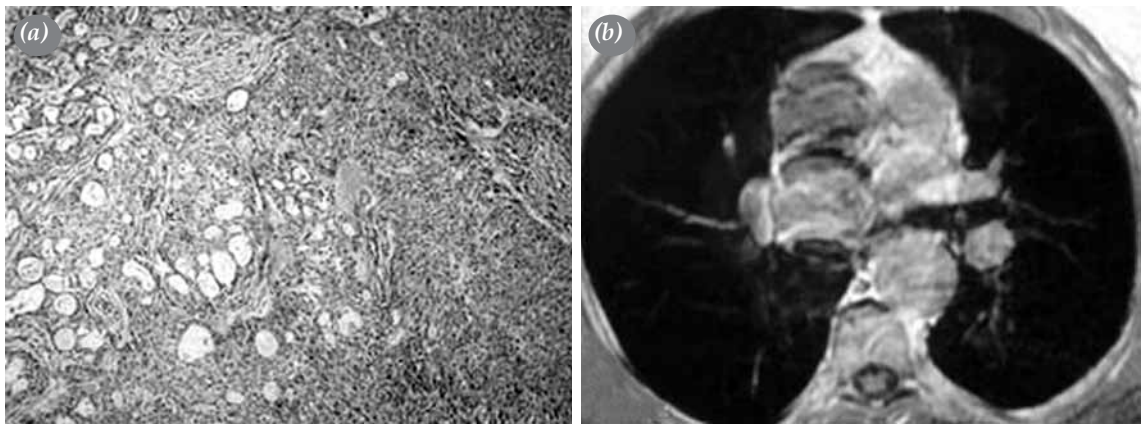

Figure 1. (a) Mucoepidermoid carcinoma of the lung (H-E x 200); **(b)** Computed tomography of the chest showing the solid lesion in the left lower lobe of the lung.

during his evaluation, a lesion in the upper lobe of the right lung that showed malignant characteristics was detected. Eventually, the patient underwent coronary artery bypass grafting (CABG) and pulmonary resection simultaneously, and a histopathological examination revealed an adenocarcinoma of the lung (Figure 2a). Five years later, the patient was diagnosed with prostate adenocarcinoma and had a prostatectomy. Two years after this operation, a lesion on the skin of the right side of his nose appeared, which was then excised and diagnosed as basal cell carcinoma of the skin. Five years after his last surgery, the patient was readmitted to our clinic with a 6 cm lesion with malignant features in the left paracardiac region adjacent to the mediastinum (Figure 2b). Systemic screening revealed no metastasis, and the mass was completely removed and identified as a malignant solitary fibrous tumor demonstrating excessive mitosis. The patient remained free of disease during a six-month follow-up period.

DISCUSSION

Multiple primary malignancies were first described by Billroth in 1889, and the criteria for diagnosis was defined in detail by Warren and Gates in 1932 when they stated that each of the tumors must carry the characteristics of malignancy, each must be located in different organs/tissues, and the presence of one being a metastasis of the other must be excluded.[2] Our two patients met these criteria. In the first case, there were three primary tumors, with the renal and pulmonary tumors being synchronous and the thyroid tumor being metachronous. In the second case, there were four distinct malignancies in the lung, prostate, skin, and mediastinum, and all were removed surgically.

Although it has been postulated that the incidence of MPMs increase in correlation with increased elderly population, other reasons such as the long-time survival of malignancies and the immunostimulating effect of

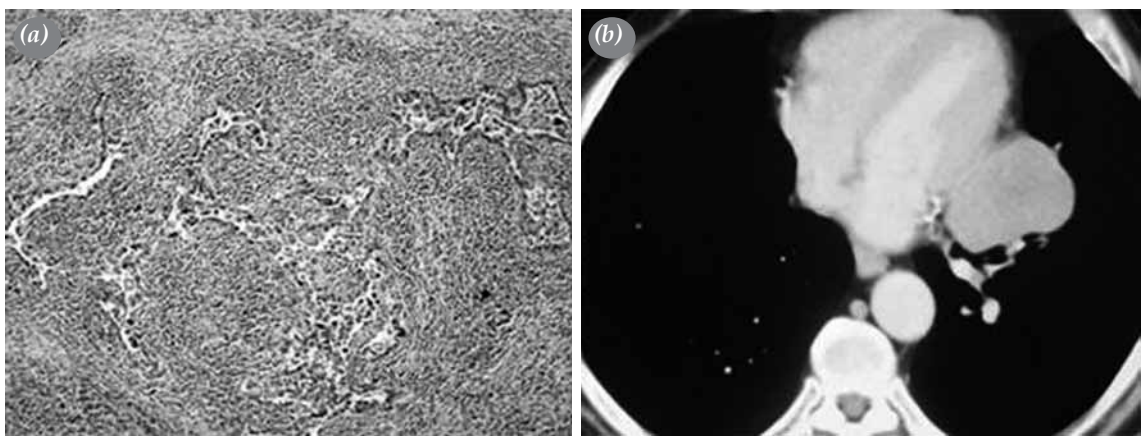

Figure 2. (a) Adenocarcinoma of the lung (H-E x 200); **(b)** 6 cm solid lesion (malignant solitary fibrous tumor of the mediastinum) in the left paracardiac region.

previous cancer also likely may play a part.[3] Both of our cases were diagnosed and treated at an age which puts them in the "old" category.

Genetic, hormonal, environmental, and immunological factors may play a role in the etiology of MPMs,[1] and Keller et al.[4] showed that the most important factors responsible for these malignancies are genetic predisposition and chromosomal aberrations. In addition, during the follow-up of certain types of malignancies, development of a tumor in a secondary organ is possible, but this depends on the effect of the exposure to carcinogenic agents.[5] Unfortunately, we did not investigate this aspect in our patients.

As our two cases and the review by Koutsopoulos et al.[6] point out, MPMs can be seen synchronously. Our cases were diagnosed with three and four different malignancies, respectively, and to the best of our knowledge, no cases like these have been previously reported in the literature.

Conclusion

When synchronous tumors are detected at an early stage, surgical treatment has the same effect as that of single primary tumors on the prognosis. In cases involving MPMs, it is important to prioritize the order of treatment of the tumors and determine the best treatment modality, especially in synchronous tumors. Each entity should be treated according to the principles of oncological surgery peculiar to the specific organ system, and the most aggressive one should be resected at the outset.

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