ABSTRACT
A 50-year-old male presented with complaints of cough with expectoration since 2 months with pain during defecation and loose stools since 1 month, and one episode of hemoptysis. Chest X-ray showed bilateral multiple nodular opacities with multiple cavities with air fluid levels. Sputum acid-fast bacilli (AFB) fungal culture showed growth of *Aspergillus terreus*. Computed tomography (CT) scan of chest and abdomen showed bilateral multiple cavities and nodules with left pleural effusion and adrenal metastasis with rectal mass and narrowing of lumen. Rectal biopsy showed moderately differentiated adenocarcinoma. Computed tomography-guided lung biopsy was also done, which surprisingly came as poorly differentiated large cell carcinoma.

We report a case of synchronous multiple primary malignancy (MPM), rectum and lung, primary lung metastasizing to adrenal glands and lung with secondary fungal infection (*A. terreus*).

**Keywords:** Multiple primary malignancies, Multiple primary malignancy with fungal infection, Rectal carcinoma.


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INTRODUCTION
Multiple primary malignancies in a single host have seen an increasing trend during the past decade. The term “multiple primary malignancy” was first used by Billroth in 1889, and the first paper describing MPM was published by Warren and Gates in 1932. Multiple primary malignancies are defined as two or more independent primary malignancies of different histologies/origins in the same individual. They are divided into two categories depending on the time of diagnosis of each tumor. If the tumors are diagnosed simultaneously or within a 6-month interval, they are called synchronous.

If the interval is longer than 6 months, the tumors are called metachronous.

The risk is higher in women for metachronous tumors, but synchronous lesions usually favor men. Despite its increasing rates, MPMs are rare with an incidence between 0.4 and 18.4% in various countries and various studies.

Because of the poor awareness of the condition, some patients who suffer from MPM may be misdiagnosed with metastatic carcinoma. It should be clearly differentiated from primary malignancies and metastasis, so that treatment can be directed accordingly.

The incidence of *Aspergillus* infections among cancer patients has increased over the recent past, despite overall advances in supportive care. Here, we report a rare case of synchronous MPM with secondary fungal infection.
pleural effusion and adrenal metastasis with circumferential rectal wall thickening and mass causing narrowing of the lumen. Later transthoracic lung biopsy was done, which surprisingly showed poorly differentiated large cell carcinoma (Fig. 2). Patient was started on chemotherapy and voriconazole for fungal infection.

**DISCUSSION**

With increase in number of cancer patients, the risk of developing multiple primary malignant tumors is also increasing. The etiology is still unclear, but multiple mechanisms have been implicated in the pathogenesis, like hereditary factors, environmental factors, such as chemicals, asbestos exposure, smoking, chemotherapeutic regimens, viruses, and ionizing radiation.1

Furthermore, a number of hereditary conditions are associated with multiple primary malignant neoplasms. Li–Fraumeni syndrome, which is a rare disorder, is associated with CHEK2 and TP53 genes. Various genetic changes, such as punctiform mutations, loss of heterozygosity, or genetic instability, microsatellite instability, occur more frequently and have a worse prognosis in cases of MPMs than sporadic cancers.5,6

Schoenberg7 found that patients with cancer had 1.29 times higher risk of developing a new malignancy compared with those who were never diagnosed. Goya et al8 reported that lung metastases develop in 10 to 20% of patients with colorectal carcinoma.9 But in some rare cases, patients can develop synchronous colorectal and lung cancer.

Evans et al investigated 1,27,281 patients with colorectal cancer and found that 801 cases (0.6%) had also developed primary lung malignancy, while the incidence of synchronous colorectal and lung cancer is much lower in these patients.10

For the accurate classification of MPM, each tumor must exhibit a definite picture of malignancy, each tumor must represent a distinct clinical entity, and the probability that one is a result of metastatic spread from the other must be reliably excluded.11

Among possible combinations, squamous cell carcinoma is by far the most common in lung. Treatment regimens are different for patients with two primaries from those having colorectal cancer with pulmonary metastasis.11

For patients with synchronous colorectal and lung cancer, if the condition of the patient permits, synchronous curative resection of the two lesions is the first choice.12 After radical resection, according to the pathological type and stage of the tumors, appropriate adjuvant chemotherapy should be given. As far as the literature reports, patients with MPM have a better prognosis than those with a metastasis or recurrent lesion.

Aspergillosis is the most common filamentous fungal infection seen in immunocompromised patients. The significance of this infection is increasing, with growing numbers of patients with malignancy, organ transplantation, steroid abuse, and autoimmune and inflammatory conditions.4 Aspergillus fumigatus and Aspergillus flavus are the most common etiological agents. The frequency of A. terreus infections varies from 3 to 12.5%. Aspergillus terreus was significantly more likely to be nosocomial in origin. It is resistant to the commonly used drug amphotericin B and hence, treatment of choice is voriconazole or itraconazole.13

**CONCLUSION**

Thus, we report a rare case of synchronous nonsmall cell lung cancer and rectal cancer with adrenal metastasis and secondary fungal infection with A. terreus. As per our knowledge, the occurrence of MPM with secondary fungal infection has not been reported till date.
REFERENCES


