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Case Report
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Lung Adenocarcinoma and Hyperamylasemia Associated with Paraneoplastic Syndrome: A Case Report

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Abstract

Paraneoplastic syndromes arise due to biochemical substances secreted by tumor tissue or the body's immune response to the tumor, leading to systemic effects. These syndromes can serve as important indicators of the presence of a tumor and play a significant role in early diagnosis. While hypocalcemia, hyponatremia, and endocrine disorders are more common paraneoplastic syndromes associated with lung cancer, hyperamylasemia is rare but may present as a paraneoplastic phenomenon, especially in metastatic lung adenocarcinoma. Although hyperamylasemia is typically linked to pancreatic diseases, it has occasionally been observed in non-pancreatic tumors. In patients with normal pancreatic function, elevated serum amylase levels may indicate a paraneoplastic syndrome related to lung adenocarcinoma. This case report aims to evaluate hyperamylasemia in a patient with normal pancreatic function and lung adenocarcinoma, while comparing the findings with similar cases in the literature.

Case Presentation

A 67-year-old male patient presented with complaints of fatigue, exhaustion, and shortness of breath. He had a history of smoking (45 pack-years) but no history of alcohol use. Laboratory tests revealed elevated serum amylase levels (1330 U/L), and the patient was admitted for further investigation. Despite the absence of abdominal pain, abdominal CT showed no pathology in the pancreas. However, thoracic CT revealed a spiculated 6 cm lesion in the left upper lobe of the lung, and a tru-cut biopsy was performed. Histopathological examination confirmed a diagnosis of lung adenocarcinoma. PET-CT showed a 6.6 cm lesion in the left upper lobe (SUV: 10.2), with multiple metastatic lesions (1.5 cm to 2 cm) in both lung parenchyma.

While investigating the cause of hyperamylasemia, salivary gland ultrasonography was performed, which showed no abnormalities. Macroamylasemia was ruled out through polyethylene glycol precipitation tests. Urine amylase levels were elevated both in spot and 24-hour urine tests, indicating overproduction. In the absence of pathological findings in the pancreas and salivary glands, hyperamylasemia was considered a paraneoplastic phenomenon secondary to lung adenocarcinoma.

The patient's Performance Status (PS) was assessed as 1, and he required oxygen therapy. Driver mutations were negative. The patient was started on a 3-month chemotherapy regimen with weekly carboplatin and paclitaxel. Amylase levels were monitored weekly during treatment. After 3 months of treatment, the primary lung lesion regressed to 3.5 cm with an SUV of 5.8, and the metastatic lesions in the lung parenchyma showed significant regression. The amylase level, which was 1330 U/L before treatment, decreased progressively during treatment, reaching 173 U/L [1-11] (Figure 1).

Conclusion

This case demonstrates that elevated amylase levels in a patient with lung adenocarcinoma can manifest as a paraneoplastic phenomenon. Although paraneoplastic hyperamylasemia is rare, it has been reported in association with non-pancreatic tumors. In this case, no pathological cause was found in the pancreas or salivary glands, and macroamylasemia was ruled out. The significant reduction in amylase levels observed during chemotherapy suggests that the hyperamylasemia was related to the malignancy and was effectively controlled with chemotherapy. As shown in the graph, amylase levels declined markedly during treatment, from 1330 U/L at baseline to 173 U/L at the end of treatment. This clinical scenario highlights the importance of monitoring unexpected biochemical changes in cancer patients, as they may indicate a paraneoplastic effect of the malignancy.

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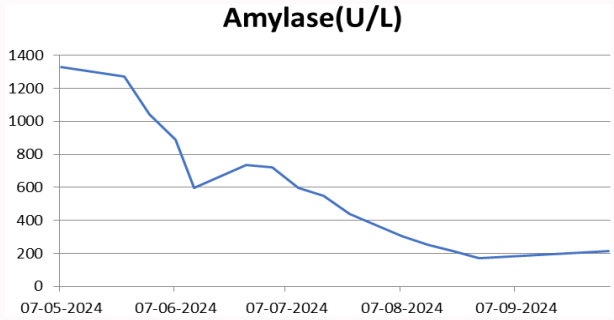

Figure 1: Amylase.

References

1. Nishikawa H. Paraneoplastic hyperamylasemia in lung adenocarcinoma: a case report and review of the literature. J Med Case Rep. 2020;14(1):29.
2. Mantovani G. Paraneoplastic syndromes. Lancet Oncol. 2011;12(2):117-28.
3. Di Bisceglie AM. Hyperamylasemia in cancer patients: a paraneoplastic phenomenon? Am J Gastroenterol. 1995;90(3):476-80.
4. Schlosser HA. Paraneoplastic syndromes in lung cancer: tumor biology and clinical implications. Curr Oncol Rep. 2017;19(2):24.
5. Sakamoto Y. Hyperamylasemia in malignant tumors of non-pancreatic origin. Japanese J Clin Oncol. 1999;29(2):79-84.
6. Kalousova M. Paraneoplastic syndromes: a review. Biomedical Papers. 2011;155(1):5-18.
7. Muñoz AS. Hyperamylasemia and lung cancer: case report and literature review. Rev Esp Enferm Dig. 2012;104(7):391-5.
8. Nakamura N. Hyperamylasemia as a paraneoplastic syndrome in non-small cell lung cancer. J Thorac Oncol. 2010;5(10):1520-3.
9. Baud M. Serum hyperamylasemia and lung cancer: a case report and review of the literature. Respir Med Case Rep. 2015;14:479.
10. Koutsoumpas AL. Paraneoplastic syndromes in lung cancer: an insight into their frequency, diagnosis, and prognosis. J Thorac Dis. 2019;5(3):312-9.
11. Waring S. Paraneoplastic hyperamylasemia in non-small cell lung cancer: a rare manifestation. Lung Cancer Int. 2019:341-5.