Case Report

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Anti-Hu Encephalitis Associated With Small Cell Lung Cancer, A Case Report

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Introduction

Paraneoplastic limbic encephalitis (PLE) is a rare neurologic that can be a manifestation of lung cancer. These manifestations are frequently seen in patients diagnosed with small cell lung cancer (SCLC), as in our case. This is a case report of a 66-years-old woman, with SCLC that has been diagnosed due to paraneoplastic encephalitis staining positive for anti-Hu antibodies. Sometimes differential diagnosis involves endocrinopathies and other neurological conditions, so many specialists must co-operate in each patient.

Case report

A 66-year-old woman, with personal history of dyslipidemia and smoking 40 pack- years, was presented to our hospital's emergency department with tinnitus on the right side, dizziness, walking instability, hoarseness and progressively worsening blurred vision. She was examined by a neurologist, an ophthalmologist, and an otolaryngologist. The clinical examination of the neurologist revealed horizontal and vertical nystagmus, pupils with anisocoria, mydriasis on the left pupil, non-react to the light on both sides, eyelid drop on the left eye, diplopia on the left eye, strabismus on the right eye with esotropia, and paralysis on the right half face. There was no Babinski sign on both feet and cerebellum tests revealed only walking instability. The examination from the ophthalmologist was negative for significant clinical evidence and the bythoscopy was clear. CT scan of the brain did not provide us any important information, it was a clear tomography. Afterwards, a Magnetic Resonance (MRI) was also negative for new evidence. Then, the patient underwent on lumbar puncture, twice, that was negative for infection. The cytological examination of the cerebrospinal fluid was negative for malignant cells. Subsequently, a CT scan of the thorax and the abdomen revealed a tumor in the middle mediastinum in front of the right portal. Due to the findings, the patient undergone endobronchial ultrasound and fine needle aspiration that was positive for small cell lung cancer. In addition, onconeural antibody tests was sent. The tests revealed positive anti-Hu antibodies and confirmed the paraneoplastic anti-Hu encephalitis. During her hospitalization, the patient was clinically deteriorated and was put in high dose γ-globin therapy for 5 days (25gr/24hours) and complementary therapy with methylprednisolone for 5 days (1gr/24hours). The treatment did not have the desired result, therefore the patient referred to our oncology department for further treatment. To our hospital, the patient started immediately chemotherapy with carboplatin AUC5 and etoposide (100mg/m2) for 3 days. After the first cycle of chemotherapy, the patient had rapid clinical improvement and after 3 cycles of chemotherapy, the tumor has shrinkage, and we are now planning to add immunotherapy.

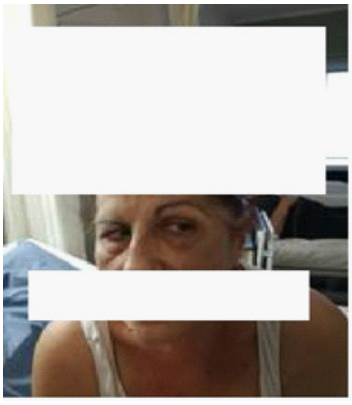

Figure 1: *We can see here strabismus and gaze dedication.*

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Discussion

Paraneoplastic limbic encephalitis accounts for about 20% of all neurological cancer- related complications [1] and had been most associated with SCLC [2]. In many patients, this neurologic disorder develops before the cancer is clinically found a situation that is similar to our case study [3]. Paraneoplastic cases are associated with antibodies directed against antigens expressed by both the tumor and the nervous system [4]. These are called anti-Hu and can be found in 50% of the cases. Recent studies report that paraneoplastic encephalitis with anti-Hu antibodies mostly is resistant to immunosuppressive therapies, so these antibodies may serve not only as a diagnostic indicator, but also as a predictive marker for treatment response. There are some cases (15%) with anti-Hu encephalitis free of any type of neoplasia and there also are observations in pediatric population, associated with neuroblastoma or opsoclonus-myoclonus syndrome [5].

The clinical picture may differ between encephalitis, myelitis, or a combination, depends on the anatomic site affected [6]. The temporal lobes, the brainstem, the cerebellum, and the dorsal roots are the most frequent sites while, the clinical manifestations correlate with these anatomic sites are varied for example patients presenting with sensory neuropathy when the dorsal roots are involved or with memory issues, seizures, or behavioral changes when the temporal lobes are affected [7, 8].

A large case series included 200 cases with anti-Hu encephalitis, showed that the appropriate treatment is associated the ameliorations of the symptoms and stabilization of the whole neurological situation of the patients [5]. In addition to this there was observed decreased mortality. Other reports support the use of immunoglobulin, corticosteroids, plasma exchange and human chorionic gonadotropin. The prognosis is poor when vital structures are involved, however the outcome may improve if there is tumor shrinkage as a treatment result [9-11].

Conclusion

Anti-Hu encephalitis is a rare neurological situation most frequently associated with SCLC. The clinical behavior involves changes in behavior, loss of memory, seizures, myoclonus and visibility symptoms, not otherwise specified. The timely diagnosis is very important, because as soon as the treatment began, then there are more possibilities for the patient symptoms to alleviate.

Summary

Paraneoplastic limbic encephalitis (PLE) is a rare neurologic that can be a manifestation of lung cancer. These manifestations are frequently seen in patients diagnosed with small cell lung cancer (SCLC), as in our case. This is a case report of a 66-year-old woman, with personal history of dyslipidemia and smoking 40 pack- years, was presented to our hospital's emergency department with tinnitus on the right side, dizziness, walking instability, hoarseness and progressively worsening blurred vision. A CT scan of the thorax and the abdomen revealed a tumor in the middle mediastinum in front of the right portal. Due to the findings, the patient undergone endobronchial ultrasound and fine needle aspiration that was positive for small cell lung cancer. In addition, onconeural antibody tests was sent. The tests revealed positive anti-Hu antibodies and confirmed the paraneoplastic anti-Hu encephalitis. To our hospital, the patient started immediately chemotherapy with carboplatin AUC5 and etoposide (100mg/m2) for 3 days. After the first cycle of chemotherapy, the patient had rapid clinical improvement and after 3 cycles of chemotherapy, the tumor has shrinkage, and we are now planning to add immunotherapy.

Conflict of Interests: No.

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