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Rabbit in the Hat: Newly Diagnosed ITP in Patients with Adrenocortical Carcinoma

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Abstract: Immune thrombocytopenia (ITP) is a commonly seen acquired bleeding disorders. Particularly, the incidence is recently increasing along with cases detected incidentally. It has been reported in association with non-hematologic malignancies such as breast cancer with a limited number of case reports in the literature. Adrenocortical carcinoma is a rare condition. Here we describe a newly diagnosed ITP resultant after therapy in a patient followed by adrenocortical carcinoma. Even the co-occurrence of these two conditions makes it quite considerable, we find worth sharing as our view about the possible pathophysiological mechanisms.

Keywords: Adrenocortical carcinoma, Immune thrombocytopenia, Steroids.

INTRODUCTION

Immune thrombocytopenia (ITP) is a commonly seen acquired bleeding disorders. Particularly, the incidence is recently increasing along with cases detected incidentally. Although it is known that accompanied lymphomas, it has been reported in association with non-hematologic malignancies such as breast cancer with a limited number of case reports in the literature [1]. Adrenocortical carcinoma is a rare condition. The annual average number of new cases is one in a million [2]. Here we describe a newly diagnosed ITP resultant after therapy in a patient followed by adrenocortical carcinoma (ACC). Even the co-occurrence of these two conditions makes it quite considerable, we find worth sharing as our view about the possible pathophysiological mechanisms.

CASE REPORT

55-year-old male patient was admitted to hospital the with red-purple rash at the whole body, conspicuous those in the lower extremities. Eruptions have occurred spontaneously three days ago. Patient, without any prior follow-up and under treatment disease, was diagnosed diabetes mellitus and hypertension and therapy was started last year. Six months ago deep hypokalemia have been detected in patients admitted to emergency services with extreme fatigue. As a result of diagnostic investigations, metastatic ACC with lung involvement had been diagnosed and the first course of chemotherapy, mitotane, etoposide, cisplatin (MEC), completed. However ten sessions of radiotherapy implemented to the patient due to treatment refractory hypokalemia. Treatment was interrupted due to the development of febrile neutropenia after the second cure of MEC. On physical examination at admission revealed ecchymotic and purpuric lesions at lower extremities and the anterior chest wall and two positive pretibial edema. Inspiratory crackles were heard at the base of the lungs. Any source of infection, lymphadenopathy, hepatosplenomegaly was detected. Laboratory findings; white blood cell: $11.7x10^9$ /L, hemoglobin: 12.3 g/dL, platelet: $4x10^9$ /L, glucose 135 mg/dL, potassium: 3.23 mEq/L were observed. Blood smear; neutrophils:66%, lymphocytes:18%, monocytes:6%, metamyelocytes:5%, bands:5% and it was observed microcytic and macrocytic normochromic red blood cells morphology and average one morphologically normal platelets were in every field. Antinuclear antibodies, viral hepatitis markes, human immunodeficiency virus and TORCH serology, that performed for the differential diagnosis, were normal. Although it had not also accompanied by anemia and leucopenia, in order to exclude possible bone marrow metastasis, bone marrow biopsy was performed. Bone marrow was normocellular. Increased amount of megakaryocytes series and dysplastic forms were infrequently observed. There was no dysplasia

ring sideroblasts in other series. Metastatic cells could not be detected by immunohistochemical staining. Patient was diagnosed as ITP and 0.8 mg/kg methylprednisolone was started. Platelet count was $45x10^9$ /L in one week next time we check and normal in the next month after the initiation of therapy.

DISCUSSION

By the widespread of automated cell counter, we come across with increasing frequency thrombocytopenia. Anamnesis should be detailed attentively in terms of drug history, herbal use, recently infection, concomitant rheumatologic disorders or liver disease and patients should be examined for possible lymphoma [3]. In our patient the drugs toxicity was not considered in first place by reason of the other blood cells are normal and the last month before the implementation of a series and the last time of implementation of chemotherapy was last month. Both thrombocytopenia has been verified and hereditary causes were ruled by the blood smear. In other laboratory analyzes, there was no significant findings suggestive of infection, hemolysis or rheumatic diseases. The bone marrow biopsy is not performed routinely in the diagnosis of ITP and is recommended when structural and quantitative abnormalities of other cell lines detected in the blood smear. After the exclusion of myelodysplastic syndromes and metastatic involvement with pathological examination the diagnosis of primary ITP was confirmed.

ACC is a rare type of cancer generally observed 4th and 5th decade, accompanying to hereditary cancer syndrome such as Li-Fraumeni syndrome, Multiple Endocrine Neoplasia, but observed more commonly sporadically. 60% of patients exhibit clinical symptoms related to excessive hormone secretion. Three in four patients exhibit cushingoid signs and symptoms [4]. Our case, likewise, were diagnosed as HT and DM before 6 months of the first examination probably developed secondary to excess of cortisol. As a result of radiological assessment the patient, with distant lung metastases, was classified as stage 4 and therapy started. After the the first cure of MEC still no decline was observed in the symptoms and findings related to hypercortisolemia, therefore radiotherapy was planned. After the second chemotherapy cures symptoms and hypokalemia refractory to treatment regressed. At this stage, the patient was admitted to our clinic with symptoms of bleeding. After clarifying the diagnosis of ITP, we investigated the association between ITP and ACC in the literature. According to our knowledge, only one case was reported [5]. By hormonal assessment performed to determine the functionality of the tumor, ACTH: 7.52 pq / L, serum cortisol 23.5 mcg / dL were found. Cortisol was 58.3 mcg / dl at first time of diagnosis. A significant reduction in cortisol levels revealed due to therapy. Concurrently there was a decline in signs and symptoms. Consistent with condition reduction in tumor size was shown by radiological examinations.

As is known, corticosteroids are used as first-line treatment of ITP [3]. In our view, this reduction in tumor size and activity led ITP, suppressed by endogenous cortisol activity, become apparent. The delicate balance between ACC and ITP was broken in favor of ITP with our intervention. Indeed after prednisolone therapy dramatic increase in platelet count was observed.

ITP can be accompanied with non-hematologic malignancies. This clinical situation that we face increasingly frequent must be kept in mind because it may develop as secondary to rare diseases such as ACC. As a result of our literature survey we found that the two conditions is described concomitant just once. Redefinition of the situation is considerable without doubt. However, we believe that our case is unique in terms of it is an example of an unexpected and surprising effect of chemotherapeutic through a different mechanism also reveal the temporal relationship between ACC and ITP and clarify the pathogenesis of ITP.

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