



Multiple Myeloma Revealed by a Cerebrovascular Accident: A Case Report

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Abstract

Introduction: Venous thromboembolic disease is reported to be frequent among MM. However, stroke is rarely reported in this population. We reported a case of MM diagnosed in a 68-year-old admitted with a stroke.

Case Report: A 70-year-old, with a history of high blood pressure, presented with right hemiparesis associated with speech impairment. Neurological examination revealed right hemiparesis, right facial paralysis and Broca aphasia. The brain CT showed a stroke in the left middle cerebral artery (MCA) territory. The protein immunoelectrophoresis revealed an IgA Kappa type gammopathy (Figure 2). The bone assessment was free of abnormalities. The sternal puncture showed spinal cord infiltration by 13% dystrophic plasmocytes. The diagnosis of multiple myeloma at stage II A was retained and the patient was treated by the association Prednisone-Melphalan.

Conclusion: We reported a rare case of cerebral vascular accident revealing the diagnosis of multiple myeloma

Keywords: Multiple Myeloma; Stroke; Broca Aphasia

Introduction

Multiple myeloma (MM) is one of the most frequent hematologic malignancies particularly in the elderly. This neoplasm is characterized by an expansion of malignant plasma cells in blood and bone marrow with an elevation of circulating monoclonal immunoglobulin. Its most important complications are anemia, renal insufficiency, hypercalcemia and skeletal dissolution. Venous thromboembolic disease is reported to be frequent among MM. However, stroke is rarely reported in this population [1,2].

We reported a case of MM diagnosed in a 68-year-old admitted with a stroke.

Case Report

A 70-year-old, with a history of high blood pressure, presented with right hemiparesis associated with speech impairment. Neurological examination revealed right hemiparesis, right facial pa-

ralysis and Broca aphasia. The brain CT showed a stroke in the left middle cerebral artery (MCA) territory (Figure 1). Moreover, the electrocardiogram showed a regular sinus rhythm without any conduction or rhythm disorders. The cardiac ultrasound was without abnormalities. The patient was therefore treated with Aspirin, enoxaparin with preventive dose and atorvastatin. The biological assessment revealed a normochrome anemia normocytic (Hb = 9.5 g/dl, VGM 93.6 fl, CCMH 32.4 g/dl), sedimentation rate at 120 mm/h, creatinine at 101.7 μ mol/l (clearance at 60 ml/min), calcemia at 2.55 mmol/l, a 24-hour proteinuria, 26 g/L albuminemia and 64 g/L protidemia. Protein electrophoresis revealed a gamma-type monoclonal peak at 27.68 g/L. The protein immunoelectrophoresis revealed an IgA Kappa type gammopathy (Figure 2). The bone assessment was free of abnormalities. The sternal puncture showed spinal cord infiltration by 13% dystrophic plasmocytes. The diagnosis of multiple myeloma at stage II A was retained and the patient was treated by the association Prednisone-Melphalan.

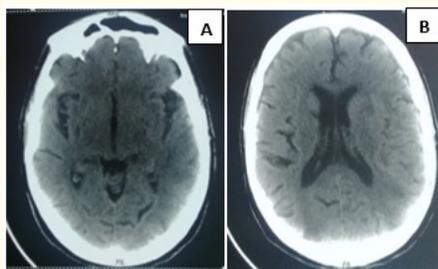


Figure 1: A and B: Cortical sub-cortical hypodensity related to a stroke in the left MCA territory.

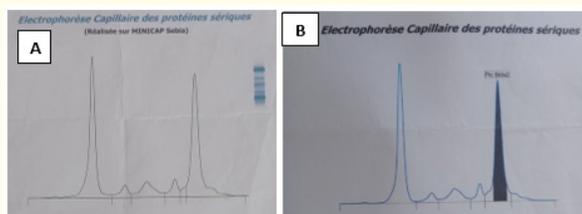


Figure 2: Monoclonal peak (A) to Ig A kappa type (B) appearance.

Discussion

In contrast to venous thrombosis, the frequency of cerebral stroke or arterial thrombosis in MM patients has been less studied.

According to previous studies, stroke incidence is higher in MM population than comparison cohorts. Hazard ratio was 1.5 in a large population-based study conducted by Kristinsson, *et al.* (18627 MM patients, 70991 matched controls) [3].

In the cohort study published by Lee and al in 2016 including 395 patients, cerebrovascular events occurred in 16 patients, ten of them had ischemic strokes (2.5%). The six others had hemorrhagic strokes. The median duration of MM to stroke was 13 months. Only three patients had, as the case of our patient, contemporary the diagnosis of MM and stroke [4].

Numerous mechanisms of thrombosis were proposed. Hypercoagulability and hyper viscosity were reported as the underlying mechanisms of thrombotic events in MM. They result on the hypergammaglobulinemia, the increase of inflammatory cytokines (Interleukin 6), Von Willebrand factor and coagulation factor VIII [5].

In another hand, several factors have been identified as possibly increasing the risk of stroke in MM patients. Lee and al found in their study that κ light chain isotype, previous cerebrovascular accident and renal impairment are independent risk factors for both types of stroke: hemorrhagic and ischemic. However, atrial fibrillation and previous cerebrovascular accident are significant risk factors for ischemic stroke.

In fact, in the three patients having the diagnosis of ischemic stroke and myeloma contemporary, we found a history of chronic kidney disease in 2 patients, a previous cerebrovascular accident in 2 patients, an atrial fibrillation in a patient and a hypertension in a patient [4]. Concurrent kidney disease is especially associated to an increased mortality and worse outcomes [6].

In our case, the myeloma had a κ chain isotype and the patient had not any previous histories of chronic disease excepting hypertension.

In addition to these factors, it was shown that chemotherapy, especially Lenalidomide used combined with dexamethasone in the treatment of MM increases the stroke risk. this finding highlights the importance of the prescription of a thromboprophylactic regime based on patient risk factors [6,7].

Management of VTD seems to be clearer than arterial embolism in MM. In fact, according to the American Society of Clinical Oncology guidelines and the guidelines of management of VTD from the International Myeloma Working Group, thromboprophylaxis for VTD is recommended for patients with MM receiving lenalidomide. For low-risk patients (patients having no other prothrombotic risk factors), aspirin (81 - 325 mg) is recommended, whereas high-risk patients (2 or more thrombotic risk factors, such as previous thrombotic events, obesity, associated disease, or immobilization) should receive low-molecular-weight heparin (LMWH) in prophylactic doses or even vitamin K antagonists. High-dose dexamethasone, doxorubicin, or multiagent chemotherapy in combination with lenalidomide are considered additional risk factors, for which the use of LMWH or vitamin K antagonists should be considered [8,9].

However, the management of strokes in patients with MM depends upon the etiology. In fact, in addition to the use of antiplatelet agents, adopting various preventive measures, especially for pa-

tients with renal insufficiency may decrease the stroke risk. These measures include the management of hypertension, diabetes mellitus, hyperlipidemia, the avoidance of hypotension and the use of novel chemotherapeutic agents [6].

Conclusion

We reported a rare case of cerebral vascular accident revealing the diagnosis of MM. Several risk factors may increase the risk of stroke in myeloma. The management of these factors will be the best prophylactic treatment to reduce the incidence of stroke and to improve outcomes.

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