ISSN No:-2456-2165

Extra Medullary Plasmacytoma with a Pulmonary Location Resembling Bronchial Carcinoma: A Case Report

[1]Meryem Bougadoum,
[2]Nidal Ouakil ,
[3]Oussama Fikri ,
[4]Lamyae Amro
Pulmonology Department,
Mohammed VI University Hospital Center,
LRMS Lab, FMPM, Cadi Ayyad University,
Marrakech, Morocco.

Abstract:- We report the observation of a 59-year-old man for whom investigations of a pulmonary lesion process led to the demonstration of an extramedullary plasmacytoma in the lung. Extramedullary plasmacytoma (EMP) is the least frequently encountered of the plasma cell neoplasia expression modes. Another particularity of our observation was that EMP was associated with a genuine multiple myeloma.

Keywords *: Pulmonary Plasmacytoma, Multiple Myeloma*

I. INTRODUCTION

Plasmacytoma is a monoclonal proliferation of malignant plasma cells that may occur in isolation, corresponding to solitary plasmacytoma (medullary or extramedullary location) or as part of multiple myeloma.

Solitary extramedullary plasmacytomas represent 3 to 5% of all plasmacytomas. Extraosseous solitary plasmacytomas are found in 80% of cases in the upper respiratory tract, particularly in the nasal cavity and nasopharynx, but more rarely in other sites [1,2,3]. Primary pulmonary involvement is exceptional (less than 2%) [4].

We report a case of pulmonary plasmacytoma in the context of a multiple myeloma initially admitted on suspicion of bronchial carcinoma and attempt to identify the main characteristics of this entity through a review of the literature.

- *Patient and Observation:*

Mr. A., 59 years old, chronic smoker at 30 PA, kiff consumer, consulted for a dry cough becoming productive bringing back hemptoiques sputum evolving since 1 month of his admission associated with a dyspnea initially stage II of Sadoul becoming stage IV with a thoracic pain . the whole evolving in a context of altered general state and apyrexia.

The examination revealed an apyretic patient, respiratory rate at 20 cycles per minute, SaO2 at 96% in room air, blood pressure 110/70 mmHg, WHO performans status was at three, heart rate at 90 bpm, digital hippocrasis with pleuropulmonary auscultation a left apical condensation syndrome

The chest X-ray showed a dense heterogeneous oval intra parenchymal opacity in the left upper lobe with sharp contours and a parietal outer border (Figure 1).

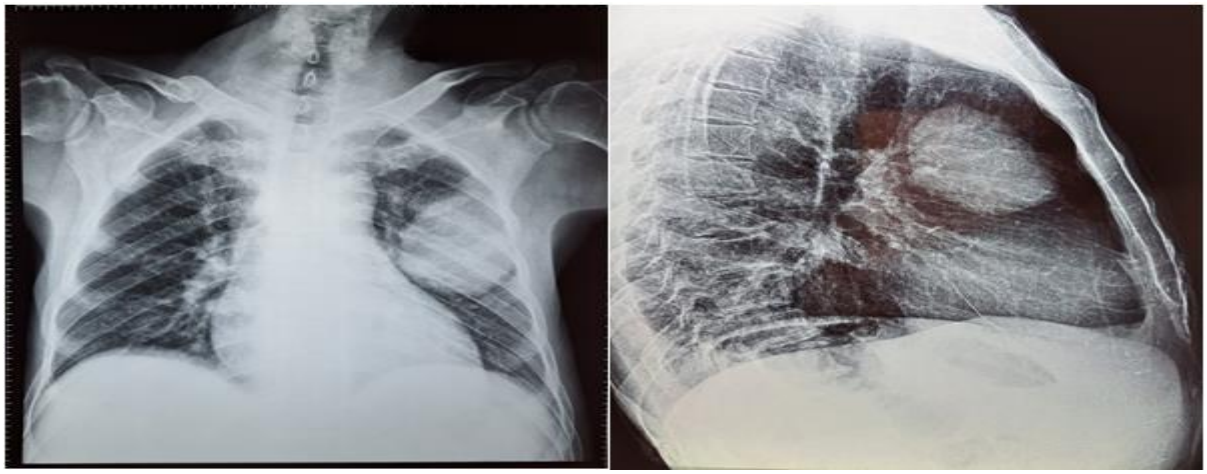

Fig 1 Frontal Chest X-Ray

ISSN No:-2456-2165

Faced with this radio-clinical presentation, we initially thought of a bronchial carcinoma, a renal check-up was carried out before the thoracic scan, with fortuitous discovery of an alteration in renal function (creatinine at 41.5, urea at 1.02g/l), which led us to think of other possible diagnoses.

At the biological level, the haemogram showed a normocytic normochromic anaemia (haemoglobin at 8. 3 g/dl, platelets = 262 000 per cubic millimeter, leukocytes 8340 per millimeter) with a high ferritinemia at 2337, there was a hypercalcemia at 145 mg/ml with a corrected calcemia at 151 mg/l, a hyperphosphatemia at 60 mg/ml, a hyperuricemia at 123 mg/ml, LDH elevated at 551 U/L no disturbance of the liver balance.

A thoracic CT scan with injection was performed to clarify the abnormalities. It revealed a lesional process in the ventral segment of the culmen with lobulated contours, isodense hetrogenically enhanced by the contrast medium, with areas of central necrosis measuring 64*62*73 mm associated with bilateral parenchymal nodules and diffuse lacunar osteolytic lesions in the ribs (Fig. 2).

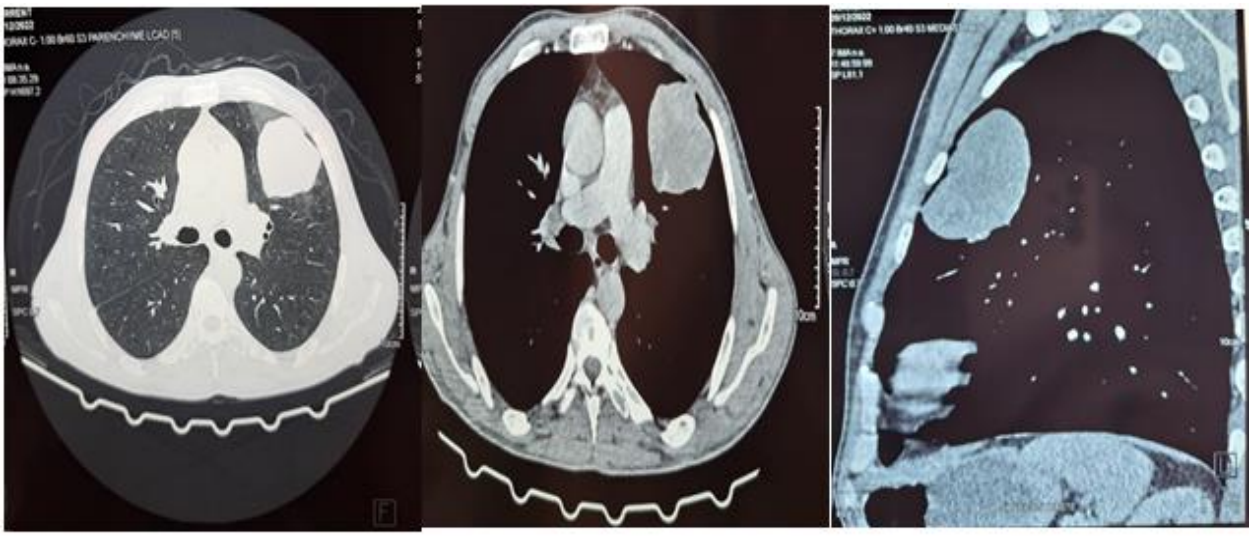

Fig 2 Chest CT Scan

In view of the renal insufficiency, hypercalcemia, and osteolytic lesions, we thought of a multiple myeloma associated with either a bronchial carcinoma or a plasmacytoma with a pulmonary location.

Protein electrophoresis showed an electrophoretic profile compatible with nephrotic syndrome with the presence of a monoclonal peak in gamma globulin quantified at 2.6 g/l.

The skull X-ray and the brain CT scan showed the presence of multiple diffuse lacunar lesions, well limited, with thinning of the internal table in places (Fig.3).

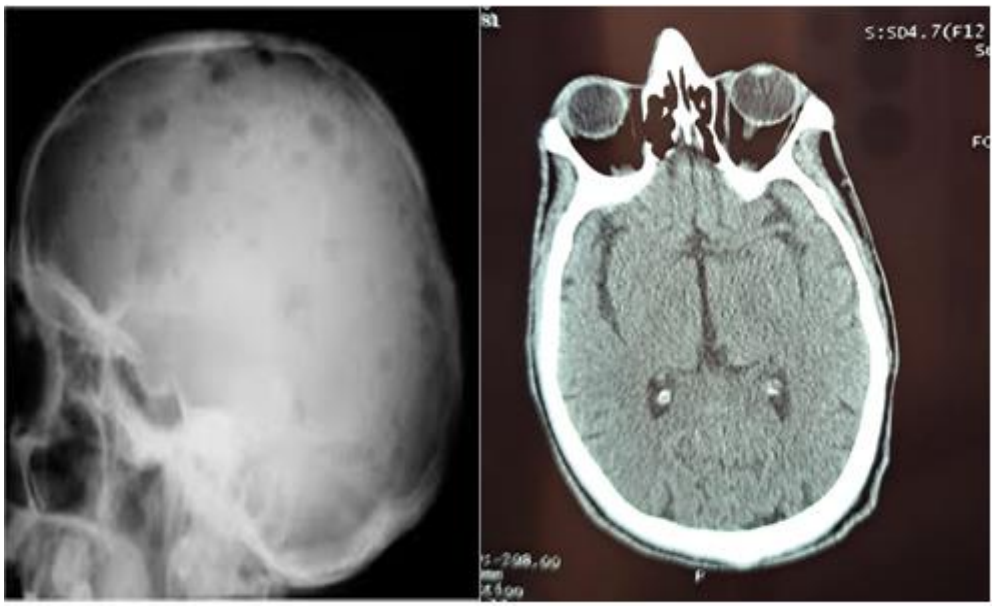

Fig 3 Cranial X-Ray + Cerebral CT Scan

ISSN No:-2456-2165

The myelogram showed bone marrow invasion by 67% plasma cells made up of 50% plasmoblasts, 5% plasma cells and 12% lymphoplasmocytes.

Bronchoscopy showed a first degree inflammatory state with anthracosic spots in the left bronchial tubes without visible buds or granulomas. Bronchial cytology was dystrophic with the presence of plasma cells, lymphocytes, some neutrophils and regular bronchial cells

The patient was transferred to the nephrology department for dialysis sessions:

The evolution was marked by a rapid worsening of the patient's condition with death before the performance of the scannoguided lung biopsy.

II. DISCUSSION

- *Plasma Cell Neoplasia are Individualized into Four Types:*
- Multiple Myeloma (MM);
- Plasma Cell Leukemia (PCL)
- Bone Plasmacytoma;
- Extramedullary Plasmacytoma (EMP) (5)

Symptomatic MM is the invasion of the bone marrow by malignant plasma cells responsible for the synthesis of a monoclonal protein. The diagnosis is based on the presence of a plasma or urine monoclonal peak (Bence Jones protein) corresponding to a complete immunoglobulin (IgG or IgA) or free light chains (kappa or lambda type), a plasma cell plasma cell marrow invasion of more than 10% associated with the "CRAB" criteria: hypercalcemia, renal failure, anemia and bone disease [6].

Plasma cell leukemia is characterized by the presence of malignant plasma cells in the blood.

- *Solid Plasma Cell Tumors, "Plasmacytomas", are Divided into Two Classes According to their Anatomical Location:*
- Solitary Bone Plasmacytomas Located in the Bone Marrow ;
- Extramedullary Focal Tumors (Emp), which are the Rarest (2 to 5% of Cases).

The diagnosis of extramedullary plasmacytoma is based on histological examination. It is most frequently individualized in the upper airways or the digestive tract [7,8]. Thoracic localization is rare [9,10].

Our case is unique in that it is an extramedullary plasmacytoma and a multiple myeloma. This leads us to think that it could be the same disease, as it has been suggested in the past [11]: MM would represent the aggressive evolution of plasmacytoma, the other possibility being to consider it as a "secondary localization" of a pre-existing myeloma [12,13].

This association is observed in only about 5% of cases of plasmacytoma [14] and has a poor prognostic character, which modifies the therapeutic management: local radiotherapy or surgery in case of extramedullary plasmacytoma alone, chemotherapy in other situations. This justifies the search for diagnostic elements of a myeloma during the extension workup of an extramedullary plasmacytoma.

The relationship between multiple myeloma (MM), solitary PO and EMP is not well understood. For some authors these 3 entities represent different aspects of the same disease. Others consider solitary plasmacytoma of the bone as a rare manifestation of multiple myeloma.

However, EMP should be considered differently, joining the solid tumors that can infiltrate nearby lymph nodes or cause distant metastasis [15].

Extreme medullary plasmacytoma of the lung is characterized by a median age at diagnosis of 59 years, a peak of frequency during the seventh decade with a sex ratio close to 2/1. The clinical symptoms are varied and not very specific and can mimic a primary pulmonary tumor. It usually shows a nodular parenchymal opacity, sometimes perihilar, more or less well limited, associated with possible mediastinal adenopathies. Multiple tumor locations, diffuse alveolar-interstitial or endobronchial involvement are rarely reported [16].

The diagnosis is based on anatomopathological examination of an operative specimen, transparietal biopsies, transbronchial biopsies, and more rarely on cytological study of bronchoalveolar lavage.

Anatomopathological examination shows a sheet-like cell proliferation whose morphological characteristics may already point to a plasma cell origin.

The immunohistochemical study usually confirms the diagnosis and distinguishes them from low-grade malignant non-Hodgkin's lymphomas with plasma cell differentiation. It will determine the nature of the intracytoplasmic immunoglobulin expressed (G or A, or restricted to a single kappa or lambda light chain) and the absence of expression of B lymphocyte antigens such as CD20 [17].

Katodritou et al. reviewed 97 patients with plasmacytomas (PEM and PO) and reported that 25% (24/97) of cases progressed to MM [18]. Other studies have suggested that these patients with PEM have a relatively low risk of progression to MM compared with patients with PO [19].

III. CONCLUSION

Extra pulmonary plasmacytomas are a rare form of EMP with varied clinical and radiological expression and little specificity. Its association with multiple myeloma is rare and has a poor prognostic character.

ISSN No:-2456-2165

REFERENCES

[1]. Mendenhal W, Mendenhal C, Mendenhal N. Solitary plasmocytoma of bone and soft tissues. Am J Otolaryngol 2003;24:395–9.

[2]. López A, Méndez F, Puras-Báez A. Extramedullary plasmocytoma invading the bladder: case report and review of the literature. Urol Oncol 2003;21:419–23.

[3]. Sautar R. Guidelines on the diagnosis and management of solitary plasmocytoma of bone and solitary extramedullary plasmocytoma. BJH 2004;124:717–26.

[4]. Alexiou C, Kau RJ, Dietzfelbinger H, Kremer M, Spiess JC, Schratzenstaller B et al. Extramedullary plasmacytoma: tumor occurrence and therapeutic concepts. Cancer. 1999; 85(11): 2305-14. PubMed | Google Scholar

[5]. Nolan K, Mone M, Nelson E. Plasma cell neoplasms: review of disease progression and report of a new variant. Surg Oncol 2005;14:85—90.

[6]. Kyle RA, Rajkumar SV. Criteria for diagnosis, staging, risk stratification and response assessment of multiple myeloma. Leukemia 2009;23:3—9.

[7]. Shin MS, Carcelen MF, Ho KJ. Diverse roentgenographic manifestations of the rare pulmonary involvement in myeloma. Chest 1992;102:946—8.

[8]. Ooi GC, Chim JC, Au WY, Khong PL. Radiologic manifestations of primary solitary extramedullary and multiple solitary plasmacytomas. AJR Am J Roentgenol 2006;186:821—7.

[9]. Go´zdziuk K, Kedra M, Rybojad P, Sagan D. A rare case of solitary plasmacytoma mimicking a primary lung tumor. Ann Thorac Surg 2009;87:25—6.

[10]. Alhan E, Calik A, Kucuktulu U, Cinel A, Ozoran Y. Solitary extramedullary plasmocytoma of the breast with kappa monoclonal gammopathy. Pathologica 1995;87:71—3.

[11]. Masood A, Kanan HH, Hegazi AZ, Gaffar S. Mediastinal plasmacytoma with multiple myeloma presenting as a diagnostic dilemma. Cases J 2008;1:116.

[12]. Fayyaz A, Ghani UF. Multiple breast masses in a case of multiple myeloma. J Coll Physicians Surg Pak 2009;19: 529—30.

[13]. Zhong YP, Chen SL. A clinical analysis of 25 cases of multiple myeloma complicated by extramedullary plasmacytomas. Zhonghua Nei Ke Za Zhi 2009;48:396—8.

[14]. Sarin H, Manucha V, Verma K. Extramedullary plasmacytoma, a report of five cases diagnosed by FNAC. Cytopathology 2009;20:328—31.

[15]. Wiltshaw E. The natural history of extramedullary plasmacytoma and its relation to solitary myeloma of bone and myelomatosis. Medicine. 1976; 55(3): 217-238. PubMed | Google Scholar.

[16]. Etienne G, Grenouillet M, Ghiringhelli C, Vatan R , Lazaro E,Germain P et al. Plasmocytome pulmonaire: a propos de deux nouvelles observations et revue de la litterature. La Revue de Médecine Interne. 2004; 25(8): 591-595. PubMed | Google Scholar

[17]. Batsakis JG, Medeiros JL, Luna MA, El-Naggar AK. Plasma cell dyscrasias and the head and neck. Ann Diagn Pathol. 2002; 6(2): 129-40. PubMed | Google Scholar

[18]. Katodritou E, Terpos E, Symeonidis AS, Pouli A, Kelaidi C, Kyrtsonis MC et al. Clinical features, outcome, and prognostic factors for survival and evolution to multiple myeloma of solitary plasmacytomas: a report of the Greek myeloma study group in 97 patients. Am J Hematol. 2014; 89(80): 803-808. Epub 2014 May 12. PubMed | Google Scholar

[19]. Stuppi E, Lazarchick J, Ellen Riemer. Primary plasmacytoma of the lung: A case report and review of literature. J Mod Hum Pathol. 2016; 1(1): 1-5. Google Scholar