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RESEARCH ARTICLE

MULTIPLE SOLITARY PLASMACYTOMAS: ABOUT A CASE WITH REVIEW OF THE LITERATURE

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ABSTRACT

The solitary plasmocytoma is a rare entity corresponding to a proliferation of monoclonal plasma cells, isolated or accompanied by multiple myeloma, bone or extra-bone seat. The multiple localization of plasmocytomas is even rarer. It represents less than 5% of all plasma cell neoplasias. The diagnosis is based on the discovery of a localized tumor, made up of monoclonal plasma cells cytologically identical to those of multiple myeloma. We report the case of a patient, 63 years old, with no particular pathological history, followed for two swellings of sternal and frontal localization evolving for 4 months and whose anatomopathological study concludes with a plasmocytoma. Biochemical exploration found hypercalcemia associated with a monoclonal peak at protein electrophoresis. The patient was referred to us for a spinal cord invasion. The study of the morphology on a spinal smear revealed the presence of a plasma cell level not exceeding 5% but which were all dystrophic in particular by the presence of a flamed cytoplasm and intra-cytoplasmic vacuoles hence the interest a second sample. The biology laboratory plays a crucial role in the diagnosis and monitoring for possible myeloma transformation. The prognosis is generally favorable but remains conditioned by the risk of progression to multiple myeloma.

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INTRODUCTION

The plasmocytoma performs a circumscribed proliferation of monoclonal plasma cells, which can be solitary, multiple or complicate the progression of multiple myeloma (MM). The multiple localization of plasmocytomas is even rarer. It represents less than 5% of all plasma cell neoplasias. It can affect the patient's functional or vital prognosis.

OBSERVATION

We report the case of a 63-year-old man, with no particular pathological history, followed for two swellings of sternal and frontal localization evolving for 4 months (Figure 1,2). The anatomopathological study concludes with a plasmocytoma. Biochemical exploration found hypercalcemia associated with a monoclonal peak at protein electrophoresis. The patient was referred to us for a spinal cord invasion.

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The study of the morphology on a spinal smear revealed the presence of a plasma cell level not exceeding 5% but which were all dystrophic in particular by the presence of a flamed cytoplasm and intra-cytoplasmic vacuoles hence the interest a second sample. The patient was subsequently lost to follow-up.

DISCUSSION

Plasmocytic tumors are rare, and among them, solitary plasmocytomas represent 10%. Based on their location, solitary plasmocytomas were classified into two groups, the first being the solitary bone plasmacytoma, which frequently occurs in the axial skeleton and which has a high risk of progression to multiple myeloma, which has led to some clinicians to consider it as a beginning stage. The second group is the solitary extramedullary plasmocytoma, which is less common (20% to 30% of cases) (Bataille, 1981; Shih, 1995), occurring mainly in the head and neck region. Unlike solitary bone plasmocytomas, extramedullary plasmocytomas are often localized tumors and local therapy provides long-term control with a higher cure rate than solitary bone plasmacytoma (Bataille, 1981; Shih, 1995).

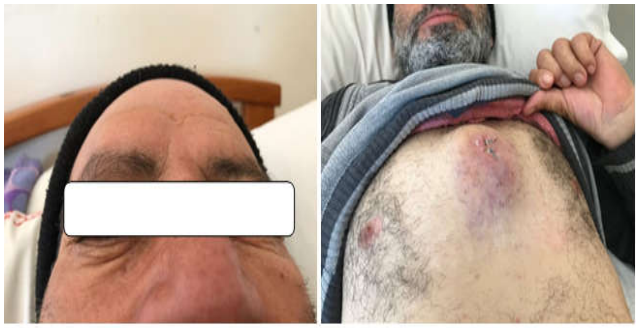

Figure 1 and 2. Supraorbital and sternal plasmocytoma

About 5% of all cases of plasma cell neoplasia are solitary bone plasmocytomas (Hadadi, 2019). In the United States, the incidence is approximately 0.15 cases per 100,000, or approximately 450 new cases per year. The incidence is higher in blacks and lower in Asians. Men are diagnosed twice as often as women with a sex ratio of 3 to 4. The median age at diagnosis is between 55 and 65, compared to 71 for patients with multiple myeloma (Hadadi, 2019; Dores *et al*., 2009). Bone solitary plasmocytoma has been reported in patients as young as 15 years of age (Tsang, 2001; Jythirmayi, 1997). Although an increased risk of plasma cell neoplasia has been reported in first-degree relatives of patients with unidentified gammapathiemonoclonal and patients with multiple myeloma (Reed *et al*., 2011), there are no data concerning a family predisposition in the solitary plasmocytoma. Bone solitary plasmocytoma (PSO) implies the presence of a bone lesion in a patient in whom investigations have not revealed other locations (Dores *et al*., 2009). It can manifest itself in pain or bone swelling, as for our patient, or be of incidental radiological discovery (Dores *et al*., 2009). The involvement is costal, sternal, clavicular or scapular in approximately 20% of cases (Tsang, 2001). Our patient therefore has a usual localization of PSO, and is in the age group most frequently reported in the literature. Confirmation of the diagnosis of solitary bone plasmacytoma is histological and requires a complete assessment in order to eliminate multiple myeloma.

The laboratory assessment for any suspected case of solitary plasmocytoma includes the blood cell smear, a biochemical examination with calcemia, electrolytes, lactate dehydrogenase, beta 2-microglobulin and creatininaemia. Electrophoresis of blood and urine (24 hours), followed by immunofixation to confirm the type of monoclonal immunoglobulin present. The myelogram and bone marrow biopsy are mandatory to confirm the absence of clonal plasma cells (bone solitary plasmocytoma) or the presence of less than 10% clonal plasma cells (bone solitary plasmocytoma with minimal bone marrow damage). The radiological assessment includes an assessment of the extent and severity of the solitary bone plasmacytoma at the time of diagnosis. Despite advances in imaging technology, standard radiography remains the simplest imaging modality for diagnosing the initial lesion as well as screening for other skeletal lesions. It has advantages of low cost and universal availability. The treatment of bone solitary plasmacytoma is essentially based on external radiotherapy, these are radiosensitive and radiocurable tumors, radiotherapy alone allows an excellent rate of long-term local control ranging from 79% to 91% (Kumar *et al*., 2017; Suh, 2012; Katodritou, 2014). The use of adjuvant or prophylactic chemotherapy for solitary bone plasmacytoma is controversial.

The frequent progression to multiple myeloma requires close monitoring of these patients. The prognosis of solitary bone plasmacytoma remains dominated by the risk of occurrence of multiple myeloma, this suggests that subclinical disease existed in 40% of patients with solitary bone plasmacytoma at the time of definitive radiotherapy, and that the early detection of this subclinical disease could allow the identification of patients likely to undergo alternative treatments, such as systemic treatment with new agents, with or without radiotherapy depending on the clinical situation (Li, 2015). The use of sensitive tests to detect a low tumor load in the body is common in many specialized centers during the assessment of a patient with solitary bone plasmacytoma. They may include flow cytometry of the bone marrow and cytogenetics. The median overall survival of patients with solitary bone plasmacytoma is approximately 10 years (de Waal *et al*., 2016). Multiple myeloma develops in 50 to 60% of patients with solitary bone plasmacytoma after initial radiation therapy. Interestingly, one of the largest published series of solitary bone plasmacytomas of patients treated before 2001 indicated that the rate of progression to multiple myeloma after radiotherapy was higher in the first three years (14% per year) than in the following seven (3% to 4% per year), reaching a rate of 65% over 10 years.

A study at the Mayo Clinic has shown that among the 91 patients with a solitary bone plasmacytoma with normal myelogram, around 40% were without recurrence at 8 years of age (Warsame *et al*., 2012; Grammatico, 2017). The risk of recurrence decreases further in patients without signs of disease on the PET scan. In contrast, there is almost always a relapse if there are detectable monoclonal plasma cells in the bone marrow at the time of initial diagnosis. In two retrospective studies, detection of phenotypically aberrant clonal plasma cells by flow cytometry of the bone marrow was associated with a higher probability of progression to multiple myeloma at 26 months (Finsinger *et al*., 2016), while most plasmacytomas evolve into myeloma. multiple in the first four years, others may progress more than 10 years after treatment ends.

Conclusion

Bone solitary plasmocytoma is a rare malignant tumor that mainly affects the axial skeleton. The treatment of choice remains radiotherapy alone at a moderate dose ensuring good local control in 90% of cases. The exact place of adjuvant chemotherapy is not yet well established. The biology laboratory plays a crucial role in the diagnosis and monitoring for possible myeloma transformation.

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