From symptom and sign to diagnosis in a case of pulmonary plasmacytoma and pulmonary metastasis

Sir,

We present the case of a 68-year-old patient, admitted to the Pneumophtisiology Department Palazu Mare, Constanta County, Romania, in June 2018 for moderate dyspnea and pain of the left hemithorax and shoulder.

From the patient's medical history, we note a synchronous colon neoplasm of the splenic angle and the rectosigmoid junction, operated and chemotreated in 2014.

Pulmonary X-ray and computed tomography (CT) scan were performed, showing an expansive infiltrative lesion of the left superior lobe with arterial invasion and segmental bronchial obstruction. The suspicion of a pulmonary neoplasm was raised, leading to a guillotine needle biopsy of the apical mass. Histopathology examination (HP): plasma cell tumor diffuse proliferation. Imunnohistochemistry (IHC): tumoral proliferation positive for CD138 (plasmacytic marker), clonal character (kappa/lambda ~1/10), negative for CD20 (B marker) and

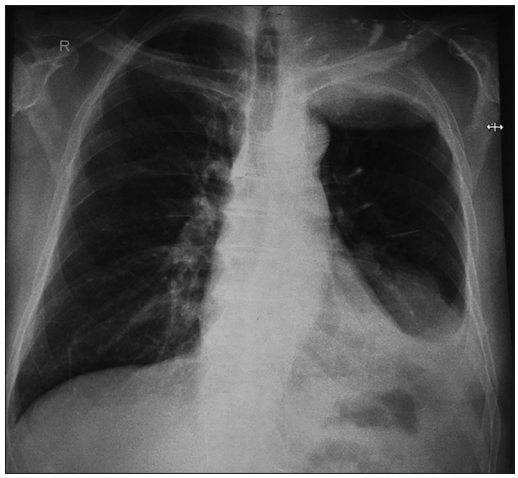

Figure 1: Chest X-ray revealing an opacity located at the apical-subclavicular level and left pulmonary base, along with the lysis of the postero-lateral costal arches of the first three ribs

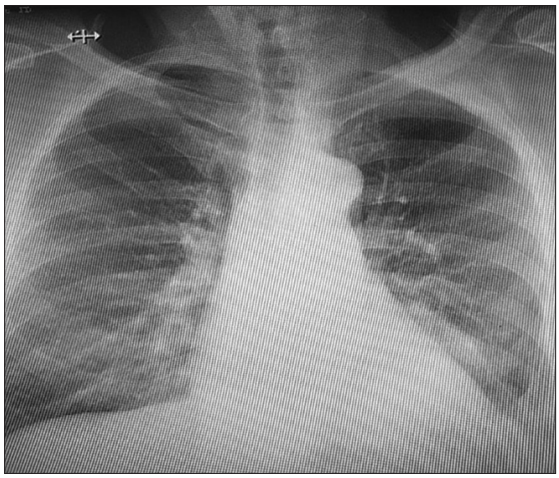

Figure 2: Chest X-ray revealing the remission of the left apical-subclavicular mass but a persisting left basal mass

CD5 (T marker). HP and IHC indicate lambda light chain secreting plasmacytoma.

The patient was thus admitted to the hematology department. On admission, the patient was stable, complaining of pain in the left thoracic region. Morphology: W =76 kg, H = 1.70 cm, and S = 1.89 m^2.

Clinical examination: reduction in the amplitude of respiratory movements of the left hemithorax due to the pain, dullness to the percussion of the superior third and the base of the left hemithorax, and diminished vesicular murmur.

Laboratory: Hb = 14 g/dl, erythrocyte sedimentation rate (ESR) =71 mm/h, calcium = 10.5 mg/dl, creatinine = 0.81 mg/dl, beta-microglobulin = 1.63 mg/L, and serum albumin = 3.9 g/dl. Immunogram: IgA = 110 mg/dl, IgG = 795 mg/dl, and IgM-38 mg/dl. Serum protein electrophoresis and immunofixation were normal. Urinary protein electrophoresis and immunofixation: lambda chains. Bone marrow aspirate: Smears presenting clusters; rich medullar cellularity with hyperplasia of the lympho-plasmocytis series; plasmacytosis - 45%; myelomatosis plasma cells.

Chest X-ray revealed opacity located at the apical-subclavicular level and left pulmonary base, along with the lysis of the posterolateral costal arches of the first three ribs [Figure 1].

The positive diagnosis of multiple myeloma Stage IIA ISS I with light-chain lambda-secreting pulmonary plasmacytoma based on: bone marrow infiltration with myelomatosis plasma cells, bone lytic lesions, the presence of lambda chains in urine, beta-2-microglobuline <1.63 mg/l, serum albumin >3.5 g/dl, as well as the HP and IHC results of the left apical mass. Treatment with bortezomib and dexamethasone was initiated.

Evaluation after six cycles: the disappearance of the left thoracic pain but significant weight loss (7kg).

Urinary and serum protein electrophoresis and immunofixation were within the normal limits.

Chest X-ray: remission of the left apical-subclavicular mass but a persisting left basal mass [Figure 2].

Bone marrow aspirate: 8% myelomatosis plasma cells. Thoracic CT: tumor mass of the left inferior lobe, presenting with malignant characters and progressive size compared to the previous examination.

Further investigations were performed to establish the etiology of the left inferior lobe mass. Biochemistry: Hb = 12.4 g/dl, ESR = 75 mm/h, CYFRA 21-1 = 23.3 ng/ml, NSE = 18 ng/ml, and CEA = 5.29 ng/dl. Colonoscopy: endoscopically resected colonic polyps.

Biopsy of the tumor mass was performed. HP examination: colon-like pulmonary carcinoma. IHC examination: CK7 negative, CK20 positive, TF1 positive, napsin A negative, CDX2 positive, thus confirming a pulmonary metastasis originating from the colon.

Particularity of the case: The association of MM with pulmonary plasmacytoma at the diagnosis associated with a pulmonary metastasis originating from the colon.

Extramedullary plasmacytoma has an incidence between 7% and 17% at the time of multiple myeloma diagnosis (primary extramedullary plasmacytoma) and 6%–20% during the course of the disease (secondary extramedullary plasmacytoma).[1]

In most cases, it is the result of direct extension from the bone, but hematogenous dissemination with the involvement of distant organs is also possible.[2] In two studies, in 68% and

85%, respectively, of extramedullary plasmacytoma at the onset of multiple myeloma cases, masses resulted from bone tissue extension and in 32% and 15% of cases, they resulted from hematogenous dissemination.[3,4]

The potential sites for extramedullary dissemination are the spleen, liver, lymph nodes, kidneys, thyroid, ovaries, testicles, lung, pleura, pericardium, digestive tract, skin, representing almost 3% of plasma cell malignancies.

The association of MM and pulmonary plasmacytoma at the time of diagnosis is extremely rare – 5% of patients.[5]

Multiple primitive neoplastic tumors can be synchronous (occurring at the same time or in the first 6 months from the first neoplasia) and metachronous (occurring after >6 months). Solitary lung metastasis is rare in the course of colorectal cancer. In cases where a pulmonary mass is encountered in a patient with a history of colorectal cancer, it is important to distinguish between a primitive pulmonary neoplasm and a metastasis, IHC evaluation being fundamental.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Mihaela Maria Ghinea[1,2], Andreea Georgiana Stoica[1,2], Sabina Livia Ciocodei[1,2]

[1]Department of Medical Semiology, General Medicine Faculty, University of Ovidius, Constanta, Romania, [2]"Sf. Apostol Andrei" County Clinical Emergency Hospital, Constanta, Romania.
E-mail: sabina_ciocodei@yahoo.com

Received: 31-05-2019 **Accepted:** 12-10-2019
Published: 31-12-2019

REFERENCES

1. Oriol A. Multiple myeloma with extramedullary disease. Adv Ther 2011;28 Suppl 7:1-6.
2. Huang H, Bazerbachi F, Mesa H, Gupta P. Asymptomatic multiple myeloma presenting as a nodular hepatic lesion: A case report and review of the literature. Ochsner J 2015;15:457-67.
3. Wu P, Davies FE, Boyd K, Thomas K, Dines S, Saso RM, *et al*. The impact of extramedullary disease at presentation on the outcome of myeloma. Leuk Lymphoma 2009;50:230-5.
4. Varettoni M, Corso A, Pica G, Mangiacavalli S, Pascutto C, Lazzarino M, *et al*. Incidence, presenting features and outcome of extramedullary disease in multiple myeloma: A longitudinal study on 1003 consecutive patients. Ann Oncol 2010;21:325-30.
5. Raia S, Sridevi HB, Acharya V, Lobo F, Kini J. Pulmonary plasmacytoma in multiple myeloma: a rare case of extramedullary spread. Egypt J Broncho 2015;9:293-5.

Access this article online

Quick Response Code:

Website: www.lungindia.com

DOI: 10.4103/lungindia.lungindia_256_19

How to cite this article: Ghinea MM, Stoica AG, Ciocodei SL. From symptom and sign to diagnosis in a case of pulmonary plasmacytoma and pulmonary metastasis. Lung India 2020;37:72-4.