International Journal of Allied Medical Sciences and Clinical Research (IJAMSCR)

ISSN:2347-6567

IJAMSCR |Volume 7 | Issue 1 | Jan-Mar - 2019
www.ijamscr.com

Case Report *Medical research*

Solitary bone plasmacytoma in young age

Banupriya M[1], Jagadeesan M[2*], Ranjan Kumar Mahapotra[3], Parthiban B[4] Prasanna Karthik S[2]

[1]*Department of Radiation Oncology, SRM Institutes for Medical Sciences, Chennai, India*
[2]*Department of General Medicine, Saveetha Medical College Hospital, Saveetha University, Chennai, India*
[3]*Department of Medical Oncology, SRM Institutes for Medical Sciences, Chennai, India*
[4]*Department of Pathology, SRM Institutes for Medical Sciences, Chennai, India*
***Corresponding Author: Dr. M. Jagadeesan**
Email id: drjagadeesan@gmail.com

ABSTRACT

Plasmacytoma is a rare localized plasma cell tumor. SBP are found primarily in axial skeleton, particularly the vertebrae, ribs, and pelvis, but may involve any bone in the body. Plasmocytoma involving the clavicle is very rare. We report a 18 year old female who presented with swelling and pain at the lateral end of left clavicle, diagnosed as solitary plasmacytoma of clavicle.

Keywords: SBP, Clavicle, Osseous plasmacytomas

INTRODUCTION

Plasmacytomas are localized neoplasms accounting for about 5% of all plasma cell dyscrasias [1]. Plasmacytoma is further classified into solitary plasmacytoma of bone (osseous plasmacytomas) and extramedullary plasmacytomas (extraosseous). Extraosseous lesions has a lower risk of progression to myeloma [2].The most common location is the axial skeleton and upper respiratory tract for osseous lesions and extramedullary lesions respectively [2]. SBP of clavicle is extremely rare, and only a few case reports are mentioned in the English literature [3].

CASE REPORT

A 18 year old female reported with complaints of swelling over the right shoulder region for 11months which was gradually increasing in size and swelling was associated with pain that was mild in intensity. She sustained a pathological fracture of the same following trivial injury. On local examination a spherical swelling of about 6x6 cm over the lateral aspect of clavicle, with normal temperature as compared to surrounding areas, non tender, smooth surface and well defined margins swelling was firm to hard in consistency. Swelling was fixed to underling structures but not to the skin. Skin was freely mobile over the swelling. All the movements of the shoulder joint were within normal range and were painless except for, overhead abduction that was associated with pain. MRI of the right clavicle showed expansile osteolytic lesion measuring 7.0 x 5.7 x 4.0 cm involving the lateral end of clavicle with erosion of

cortex. Thin cortical Fractures were visualised in the margins of the lesion [Fig1]. Findings were suggestive of neoplastic lesion.

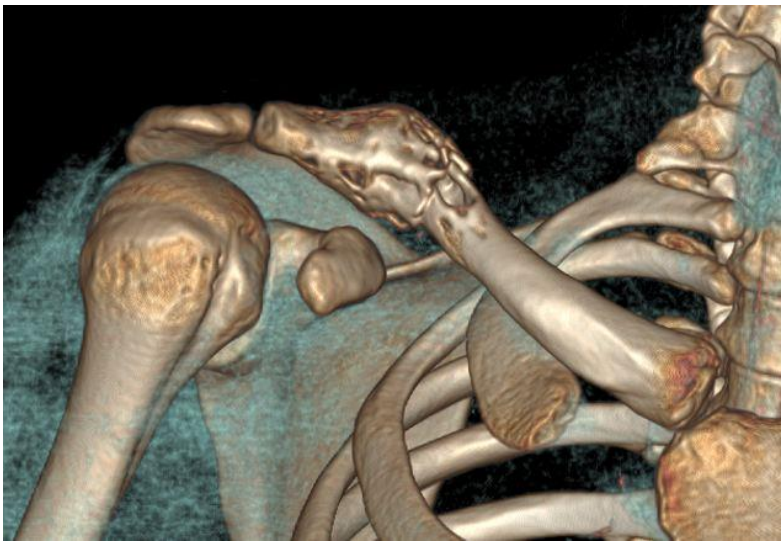

Fig1 showing expansile lesion in right clavicle with fracture of lateral end

The patient underwent tumour excision of clavicle & reconstruction using fibular graft with clavicle hook plate and the sample was sent for histopathology. Microscopic features of sections examined revealed a neoplastic lesion composed of sheets and cords of plasma cells [Fig.2].

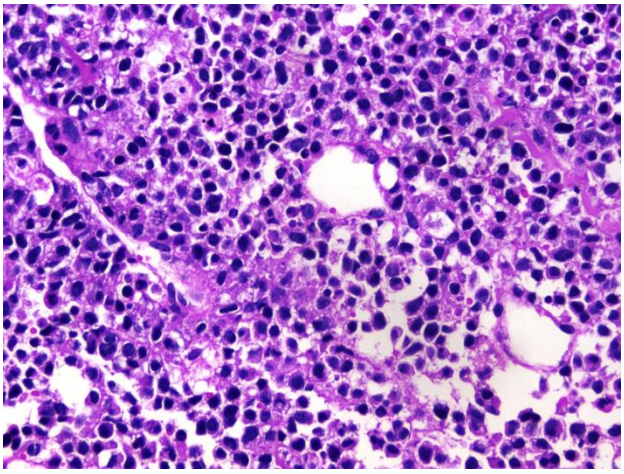

Fig 2- Microscopic examination showing sheets of immature plasma cells.

These cells have eccentric, hyperchromatic nuclei with dispersed chromatin and occasional prominent nucleoli, and abundant cytoplasm. Histopathological examination (HPE) with immunohistochemistry revealed monoclonal plasmacytosis consistant with plasmacytoma (CD 138- fig 3 and kappa positivity-Fig 4)

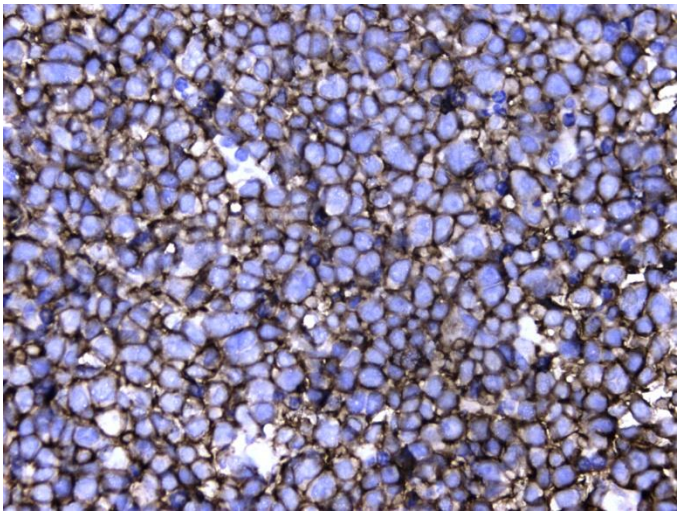

Fig 3-Immunohistochemistry for CD 138 showing strong positivityin tumor cells

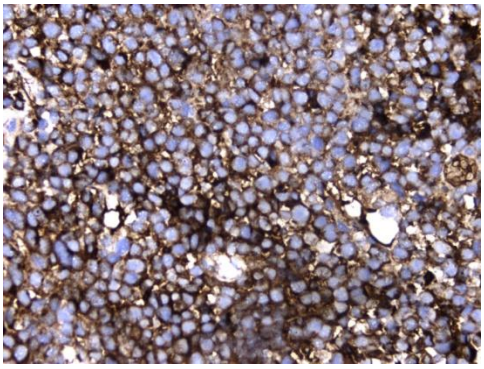

Fig -4 Immunohistochemistry for kappa showing strong positivity in tumor cells

Complete blood count, urea, creatinine, alkaline phosphatase, C-reactive protein, serum calcium and phosphorus levels showed normal values. Urinary Bence Jones Proteins were negative. Protein Electrophoresis were normal. Bone marrow aspiration showed a normocellular marrow with 2% plasma cells. A bone marrow biopsy showed scant marrow elements with trilineage haematopoiesis. Thereafter skeletal survey was negative for any other concomitant pathological lesion. Patient was taken up for External Beam Radiation therapy (EBRT) after appropriate immobilization using head and neck cast and CT based planning was done to deliver a dose of 5040 cGy in 28 fractions using 3DCRT (conformal) technique. The Patient tolerated radiation therapy well. A PET-CT done showed postoperative changes in right clavicle (SUV-3.92) with no evidence of residual lesion. She is currently under regular follow-up and she is radiologically, clinically, and immunologically disease free.

DISCUSSION

Solitary bone plasmacytoma (SBP) is characterized by proliferation of malignant monoclonal plasma cells. [1].The median age of presentation is 55 years with a female predominance (male to female Ratio is 1:2). Patients with SBP presents with a younger median age (ten years) than patients presenting with multiple myeloma.

SBP is commonly presented as an expansile lytic mass and are most commonly seen in the spine than any other bony sites.[4] SBP commonly involves axial skeleton that is vertebra, ribs, skull, pelvis, femur and scapula [2]. SBP of the clavicle is a very rare presentation. Pain is the most important presenting symptom. Typical features of myeloma like anemia, hypercalcemia, renal failure, or bone marrow involvement are not seen in SBP. [5]

Progression to myeloma in SBP patients is seen in 75% of patients with a median duration of two to three years and this proportion is steadily increased in due course of time. [1,6]. Hence, patients with

SBP requires lifelong monitoring to detect progression to Multiple Myeloma with routine clinical and laboratory assessment. Factors predicting progression to myeloma includes tumor size >5 cm, age ≥60 years, high M protein levels (1 g/dL), persistence of M protein after treatment and spine lesions. [7]

The optimal treatment for most patients with SBP is moderate dose radiotherapy, approximately 40–50 Gy administered once daily at 1.8–2.0 Gy per fraction in a continuous course resulting in high local control rates of 83-96%.[8,9]

A study done by Mendenhall *et al* in 81 patients recommended a minimum dose of 40 Gy after analyzing the dose–response and review of Literature. The local failure rate in patients with SBP treated with doses of 40 Gy or above was 6% and in patients treated with doses below 40 Gy was found to be 31%.[10]

A study reported by Tsang *et al*. stated that 32 patients with SBP was treated with RT and they concluded that tumor bulk was the most important factor in local control. They also reported that that bulky SBP over 5 cm needs higher dose or combined multimodality approach for effective local control. [11]

CONCLUSION

We report this case of SBP due to its rare site and younger age of presentation. She is currently under follow up and asymptomatic. But she requires continuous further follow up for early detection and treatment of any systemic relapse of disease or progression into overt myeloma.

REFERENCES

[1]. Dimopoulos MA, Moulopoulos LA, Maniatis A, Alexanian R. Solitary plasmacytoma of bone and asymptomatic multiple myeloma. *Blood*96, 2000, 2037-44.

[2]. Dumesnil C, Schneider P, Dolgopolov I, Radi S, Leluyer B and Vannier JP. Solitary bone plasmocytoma of the spine in an adolescent. *Pediatr Blood Cancer* 47, 2006, 335-8.

[3]. Kleins, Kuppers R..Cellular Origin of B cell lymphomas *The New England Journal of Medicine*. 341(20), 1999, 1520.

[4]. Chang MY, Shih LY, Dunn P, Leung WM, Chen WJ. Solitary plasmacytoma of bone. *J Formos Med Assoc*93, 1994, 397-402.

[5]. Hughes M, Soutar R, Lucraft H, Owen R, Bird J.(2009). Guidelines on the diagnosis and management of solitary plasmacytoma of bone,extramedullary plasmacytoma and multiple solitary plasmacytomas:2009 update. Prepared by a working group of UKMF GuidelinesWorking Group.Web site: http://www.bcshguidelines.com/pdf/SBPguideline_update_FINAL_190109. pdf.

[6]. Bolek TW, Marcus RB, Mendenhall NP. Solitary plasmacytoma of bone and soft tissue. *Int J Radiat Oncol Biol Phys*36, 1996, 329-33.

[7]. Ozsahin M, Tsang RW, Poortmans P, Belkacémi Y, Bolla M, Dinçbas FO, *et al*. Outcomes and patterns of failure in solitary plasmacytoma: A multicenter Rare Cancer Network study of 258 patients. *Int J Radiat Oncol Biol Phys*64, 2006, 210-7.

[8]. Mayr NA, Wen BC, Hussey DH, Burns CP, Staples JJ, Doornbos JF,*et al*. The role of radiation therapy in the treatment of solitary plasmacytomas. *Radiother Oncol*17, 1990, 293-303.

[9]. Holland J, Trenkner DA, Wasserman TH, Fineberg B.Plasmacytoma. Treatment results and conversion to myeloma.*Cancer*69, 1992, 1513-7.

[10]. Mendenhall CM, Thar TL, Million RR. Solitary plasmacytoma of bone and soft tissue. *Int J Radiat Oncol Biol Phys* 6, 1980, 1497-501.

[11]. Tsang RW, Gospodarowicz MK, Pintilie M, Bezjak A, Wells W,Hodgson DC, *et al*. Solitary plasmacytoma treated with radiotherapy:Impact of tumor size on outcome. *Int J Radiat Oncol Biol Phys* 50, 2001, 113-20.

How to cite this article: Banupriya M, Jagadeesan M, Ranjan Kumar Mahapotra, Parthiban B Prasanna Karthik S.Solitary bone plasmacytoma in young age. Int J of Allied Med Sci and Clin Res 2019; 7(1): 106-109.

Source of Support: Nil.**Conflict of Interest:** None declared.