

Case Report

Localised plasmacytoma presenting as right chest wall swelling

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ABSTRACT

Development of any swelling in the right lower chest wall or right upper abdomen is an unusual presentation. Hence the localisation of the origin of swelling becomes difficult to ascertain through clinical examination alone. Accurate diagnosis requires detailed investigation and ruling out of differentials one by one. We would like to share one such case of a patient presenting to surgery OPD with complaint of swelling in the lateral aspect of right chest wall which on investigations turned out to be a rib tumour arising from the bone marrow. Lady of age 57 years presented to us with h/o swelling in lateral aspect of right chest wall which gradually increased in size over 3 years and associated with pain for last 5 months. On exam an oval swelling of size 8×5 cm seen in lateral wall of right lower chest wall. On detailed investigations, the swelling was diagnosed as a plasma cell tumour of right 8th rib. Any chest wall or abdominal swelling needs detailed evaluation before proceeding for surgical intervention. It is important to keep various differential diagnosis in mind considering clinical factors and site of swelling to make an accurate diagnosis.

Keywords: Plasma cell tumour, Empyema, Chest wall swelling, Solitary plasmacytoma, Localised plasmacytoma

INTRODUCTION

The abdomen is divided into 9 regions and a swelling can arise from any one of them. Swellings arising in the right upper abdomen region/right lower chest wall are not very common.^{1,2} The first differential diagnosis that comes to mind is of a liver pathology as it occupies most of the part in this region. Infective liver aetiologies like amoebic abscess, pyogenic liver abscess, hydatid cyst etc. and other noninfective aetiologies like congenital Riedel's lobe, cholecystocutaneous fistula can present as swelling.

Other structures like basal pleura, lower ribs, right kidney, hepatic flexure of ascending colon, basal part of lungs can also give rise to swelling in this region in the form of malignancy, effusion, or collection. Tuberculosis especially in a developing country like India can be put higher up in the differentials as it forms cold abscess. Simple bone cyst and tumour of rib are kept lower down in the list as they are not very common.^{3,4}

Hence this site is unusual for the presentation of a swelling and there can be multiple aetiologies behind it. It can also be just the tip of an iceberg and there can be a more serious underlying problem hence great attention is required while attending such patients.

CASE REPORT

Present case of 57-year-old lady (informed consent taken) with no significant past/family or medical history who presented to surgery OPD with complaints of swelling in lateral aspect of right chest (Figure 1 A and B) for last 3 years associated with mild, dull aching pain over swelling for last 5 months. Swelling gradually increased in size from 2×2 (approx.)-8×5 cm currently without any aggravating/relieving factors. Patient reported loss of weight (undocumented and evidenced by loosening of clothes) with no H/o fever, loss of appetite, trauma, heavy weight lifting, chronic cough, constipation, jaundice, clay-coloured stools, bleeding per rectum, chest pain/urinary complaints.



Figure 1 (A and B): Lateral and posterior views of the right chest wall swelling.

On general physical examination, pallor was present and patient was vitally stable. On local examination, a large 8×5 cm swelling was seen in lateral aspect of right hypochondrium and right lower chest with no overlying skin changes. Swelling was non-tender, with no local rise of temperature, firm in consistency, having ill-defined margins and irregular surface with no internal mobility.

Blood investigations showed severe anaemia with slightly deranged kidney function tests. Ultrasound whole abdomen was performed which showed no abnormality. Chest X-ray performed which also showed no significant findings (Figure 2). Along with it ultrasound chest was done which showed evidence of loculated organised collection in right pleural space with multiple septations and max. depth 4 cm suggestive of right sided empyema. To gain more clarity, contrast enhanced CT scan of chest and abdomen done (Figure 3 A-C) which depicted different picture. An oval heterogenous enhancing mass lesion with internal calcification of size 6.4×4.3×5.4 cm was seen arising from 8th rib laterally with no periosteal reaction, extra-osseous soft tissue involvement/endosteal scalloping causing indentation of liver capsule. There were also multiple lobulated soft tissue lesions arising from posterior right pleura from T7 to T11 without causing any bony involvement largest 6×2.1×2.3 cm.

To confirm diagnosis 1st FNAC was done from the lesion which showed small round cell tumour with plasmacytoid cells showing PAS positivity. Following this a trucut biopsy was performed which showed possibility of plasma cell neoplasm with CD138 and CD20 positivity and CD3, Tdt, Panck, CD30 and vimentin negativity.

Peripheral smear showed normocytic normochromic cells with adequate platelets and DLC of MM₀₂N₇₀L₂₄M₀₂E₀₂.

Bone marrow aspirate showed increase in plasma cells with both mature and immature forms with PC₅₁My₀₄MM₀₅St₀₆N₀₆nRBC₂₆.

Serum electrophoresis was suggestive of rise in gamma globulin levels and showed paraproteinemia. Urine protein dipstick test also found to be strongly positive. Bone marrow biopsy from iliac bone revealed no abnormality.

Diagnosis of solitary plasmacytoma made and patient given definitive radiotherapy for complete remission.

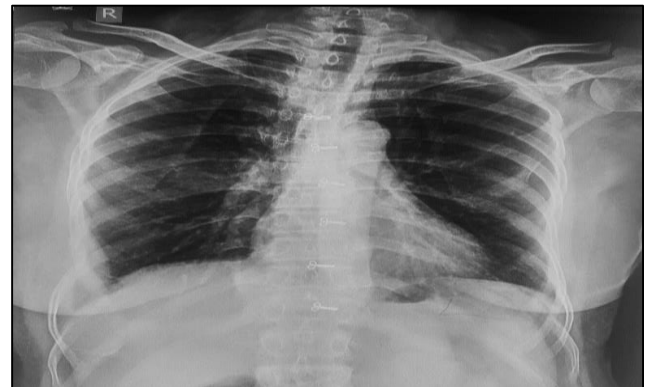


Figure 2: Chest X-ray image of the patient showing normal rib architecture on the right side.

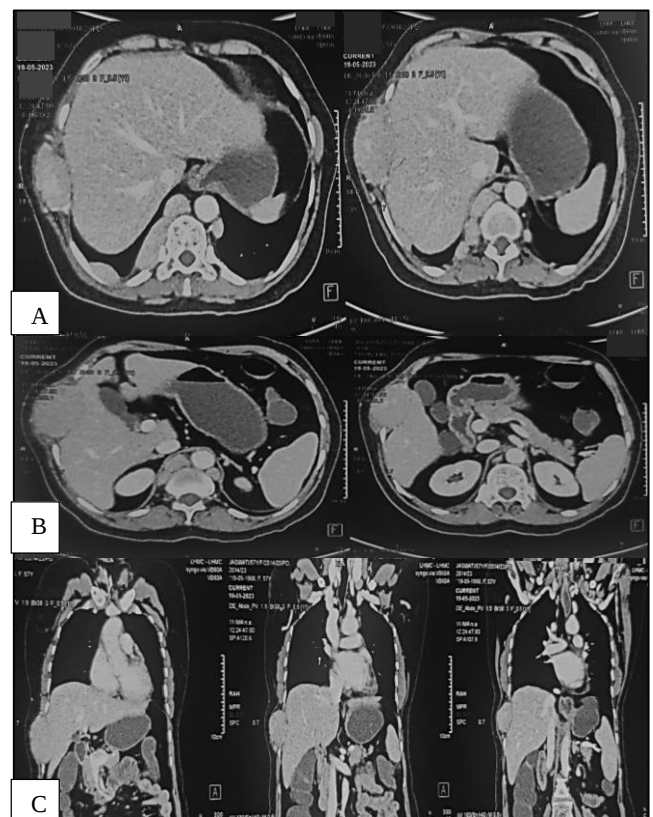


Figure 3 (A-C): Axial and coronal sections from CT scan showing the neoplasm adjacent to lateral border of liver.

DISCUSSION

Plasma cell neoplasms comprise about 10% of all haematological malignancies. They mainly comprise of (i) multiple myeloma, (ii) localised plasmacytoma, (iii) lymphoplasmacytic lymphoma, (iv) Waldenstrom's macroglobulinemia, (v) heavy chain disease, (vi) primary amyloidosis and (vii) monoclonal gammopathy of undetermined significance. Plasmacytomas can broadly be of 2 types-extramedullary plasmacytoma and solitary bone plasmacytoma, the latter being extremely rare. When it involves bones, thoracolumbar spine is the most common area affected.⁵⁻⁷ Solitary bone plasmacytomas are characterised by local infiltration of malignant plasma cells, absence of systemic proliferation and slow growth.⁸ These tumours usually present in 5th or 6th decade of life.⁹ No causative factor has been identified yet but certain risk factors like genetics, harmful chemical exposure and radiation exposure have seen to be associated with the development of such neoplasms.¹⁰ The 3-year risk for conversion of plasmacytoma to multiple myeloma has been found to be 60% for bony and 20% for extramedullary types.¹¹

In order to make a diagnosis for such neoplasms, along with detailed history and examination, USG local site, CECT chest and abdomen, histopathological examination (FNAC, peripheral smear, Trucut biopsy, Bone marrow biopsy, Flow cytometry), 24-hour urine test and serum electrophoresis are required. PET scans have a limited role in such malignancies. They can only help in identifying resectable areas and serve as prototype for comparison in case of recurrence.¹²

Treatment of localised plasmacytoma involves definitive radiotherapy, surgical excision followed by adjuvant radiotherapy or surgical excision followed by adjuvant chemotherapy. Due to its rare occurrence, no definitive studies or guidelines are available for achieving complete remission.¹³ In the largest cohort study of patients with solitary plasmacytomas in USA Thumallapally et al reported that survival rate of patients undergoing radiotherapy was significantly higher than those who did not undergo radiotherapy. Dose of 40-50 Gy has been found effective for smaller lesions and >50 Gy for larger lesions (>5 cm).¹⁴

Surgical excision if feasible is considered except for tumours located in head-neck region.¹⁵ Role of chemotherapy also remains controversial. Patients not responding to radiotherapy/having bulky tumour can be considered for chemotherapy. In one study by Aviles et al disease-free survival and overall survival was found to be improved with melphalan based combination chemotherapy compared to receiving radiotherapy alone.¹⁶

CONCLUSION

It is important to examine the patients in a systemic manner and exclude possible differentials while

encountering a case which poses a challenge with its unusual location and rare diagnosis.

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