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Non Secretary Myeloma: A Rare Variant of Multiple Myeloma

KEYWORDS

Dr.K.Sreekanth
MD., Associate Professor of Medicine, Kurnool Medical College & Govt. General Hospital, Kurnool.

Dr.K.Vidyasagar
MD., Associate Professor of Medicine, Kurnool Medical College & Govt. General Hospital, Kurnool.
Author Correspondence

ABSTRACT *Multiple Myeloma is a malignant proliferation of plasma cells within the bone marrow with production of monoclonal immunoglobulins detectable in serum and/or urine. It is the most common primary tumor of the bone, about 27% of biopsied tumors. Non secretary multiple myeloma (NSMM) is a rare variant of Multiple Myeloma (MM) with similar clinical and radiologic picture but without monoclonal gammopathy in the serum or urine. We are presenting a case report of non secretary multiple myeloma a rare variant.*

INTRODUCTION:
Multiple myeloma is characterized by clonal proliferation of plasma cells usually B cell type. The tumor is characterized by the presents of abnormal Para proteins in blood and urine. The measurement of immunoglobulins has been standard for diagnosis, management and prognosis. In 5% of the cases no proteins are detected in blood and urine and these patients are known to have non secretary of multiple myeloma. Some authors consider non secretary multiple myeloma as an entity that secretes neither immunoglobulins nor light chain. Some assumes that do not have the M Protein in electro phoresis can be categorised non secretary multiple myeloma.

The cause for absence of immunoglobulins in urine or blood is being failure of plasma cells to produce or secretes immunoglobulins leads to absence of M spike. The treatment of secretory type or non secretary type are similar and prognosis is also same.

CASE REPORT:
A 44 year male working as coolie in a brick factory presented with Fever for 20 days shortness of breath for 20 days, fever high grade, continuous, not associated with chills and rigors not with rash or joint pains, bleeding manifestations. Shortness of breath for20 days of MRC grade 1 not with PND, or Orthopnoea.

- Cough for 20 days productive, mucoid in nature No diurnal or postural variation
- No h/o blood in sputum No h/o chest pain, palpitations, syncope or swelling of feet
- No history of vomiting, pain abdomen, distension of abdomen, decrease in urine output or burning micturiction, History of loss of apetite and weight present
- Patient was diagnosed to have pulmonary tuberculosis 6 years back .He took ATT for 5months.
- He had fracture of femur 5months back for trivial trauma(slippage of foot) and was operated .He recovered and was able to walk with support
- No history of similar complaints in any of the family members.
- Not a smoker or alcoholic

On examination
- Height of 162cm, Weight of 53kgs, BMI –20.7, Anaemia present, No Jaundice/ cyanosis/ clubbing/Lymphadenopathy, Thyroid is normal, JVP is normal
- No markers of tuberculosis, No markers of connective tissue disorders, No markers of HIV

PULSE: 102 Beats per minute, regular, normal in volume, all peripheral pulses are equally felt, Blood Pressure: 124/70 mm of Hg in right upperlimb in supine position RR-25/min, abdomino thoracic, SpO2- 98%on room air

Respiratory system:
Inspection: Chest is bilaterally symmetrical, Trachea is in midline

On Palpation: Trachea is in midline, Apical impulse is in the left 5th intercostal space half inch medial to mid clavicular line, Chest movements are decreased on the left, supraclavicular area, Rib tenderness present, On Percussion: Percussion tenderness over sternum and clavicle, Dull note is heard over the left supra clavicular area scapular area. Resonant note is heard in other areas, On Auscultation: Bronchial breathing heard over left supraclavicular, Area, Vesicular breath sounds in other areas, No pleural rub

Cardiovascular System Examination: S1 and S2 are heard with normal intensity, A mid systolic murmur is heard in all areas Abdomen Examination: Soft, No organomegaly

Nervous System Examination: HMF –normal, CNS- normal, Motor and Sensory System- Normal,

No cerebellar signs, Tenderness present over the spine, No meningeal signs,

PROVISIONAL DIAGNOSIS: Of Left upper zone consolidation - ? Tuberculous was made and investigated suggesting**:** Haemoglobin -4.4gm/dl, Total leucocyte count -5,900/ cubic mm, MCV-94.7fl, MCH-31.3pg, MCHC-33 gm/dl, Platelet count -56,000 /cubic mm, Differential count-N-60%,L-30%,M-6%,E-4%, ESR-158 mm/hour, RBS-84 mg/dl, Blood urea-36 mg/dl, Serum creatinine -1.3 mg/dl, Serum bilirubin -0.8 mg/dl, Direct bilirubin – 0.3 mg/dl, SGPT- 28 U/L, SGOT – 30 U/L, ALP – 138 U/L,

Peripheral smear was suggestive of microcytic hypochromic anaemia of moderate severity with thrombocytopenia,

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Malaria parasite was not detected in the smear. HIV –non reactive, HBsAg- non reactive, HCV- non reactive, Blood group-B, positive, Sputum for AFB- negative, Urine analysis, Albumin-Nil, Sugar- Nil, Blood-Nil, No bile salts, bile pigments and urobilinogen, No pus cells, No casts and crystals.

Chest X-ray showing **multiple rib fractures**. ECG – WNL, 2D ECHO, no regional wall motion abnormality, Good LV systolic and diastolic function, no MR/TR/AR

No PE/LV clot, EF- 68%

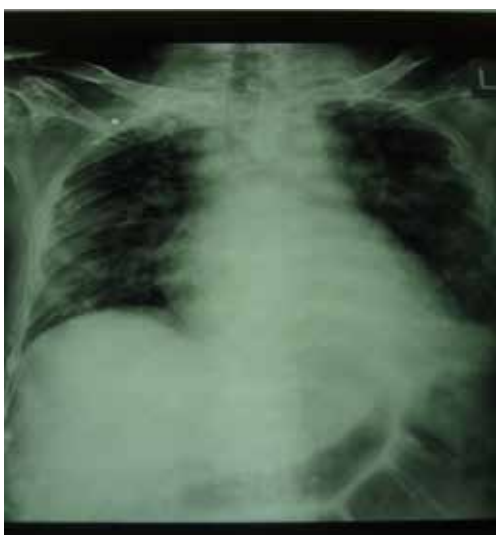


Figure-1
(Multiple rib fractures with callus formation with bilateral pneumonia)

With past history of pathological fracture, and chest x-ray with multiple rib fractures the patient was further investigated for underlying etiology of pathological fracture. The investigations report as follows.

Serum calcium-9.5 mgs/dl, Serum albumin-1.3 mgs/dl, Corrected calcium – 11.66 mgs/dl

Serum globulin -3.0, Total proteins -4.3mg/dl, Serum sodium- 142mmol/l, Serum, potasium-4.3mmol/l, Serum chloride- 104mmol/l, Urine analysis- Albumin – Nil, Sugar –Nil, Blood-Nil

No bile salts ,bile pigments and urobilinogen

24 hour urinary protein- negative for Bence Jones proteins
Ultrasound abdomen: Kidneys -increased echogenicity grade I, Minimal ascites

Rest of the abdomen –Normal.

Ultrasound of Chest: Bilateral mild pleural effusion, Left consolidation changes

Ultrasound of Neck: Both lobes of thyroid are normal, No evidence of parathyroid enlargement, No evidence of lymphadenopathy, ESR- 158 mm/hour, Plasma parathormone-4.9 pg/ml

X RAY SKULL
Showing multiple lytic lesions

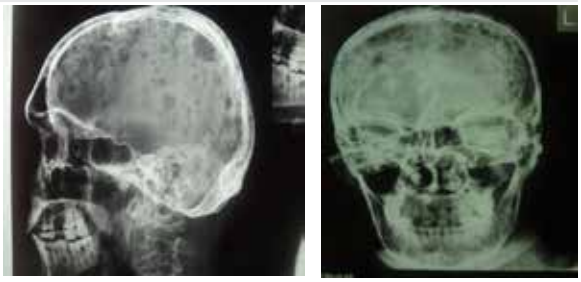
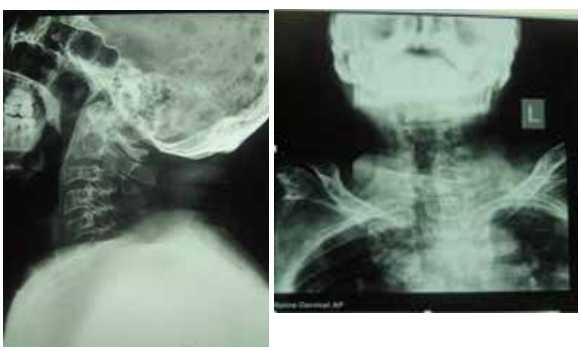


Figure-2
X RAY SKULL
Showing multiple lytic lesions

X RAY CERVICAl SPINE
Showing multiple lyitc lesions in vertebra clavicle, scapulae
Figure-3



CT THORAX
Multiple variable sized lytic and sclerotic lesions involving visualised all the vertebrae and their posterior elements, sternum, scapulae, clavicles, humeral heads and bony cage, Multiple level old fractures of bilateral ribs are noted, Multiple level vertebral collapse in dorsal region

Figure-4

Bone Marrow Aspiration Study

- Smears examined show plenty of plasma cells, plasmoblasts and occasionally binucleated and trinucleated plasma cells, few erythroid cells and myeloid series of cells and occasionally megakaryocytes are seen
- Impression: features are suggestive of multiple myeloma
- Protein electrophoresis results: Albumin: 4.6 g/dL
- alpha1:0.1 g/dL, alpha 2:0.7 g/dL, Beta:2.4 g/dL gamma:0.8 g/dL
- A/G ratio:1.16

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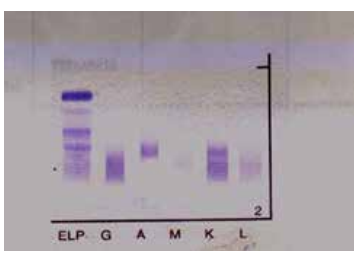
URINE ELECTROPHORESIS-Negative for M band
Figure-4

Absence of M band

SERUM ELECTROPHORESIS – Normal
Figure-5



Showing normal serum electrophoresis

With the above findings, patient was diagnosed to have *non secretory multiple myeloma* which can be further confirmed by the free light chain assay test

DISCUSSION:

Multiple myeloma is a proliferative disorder of bone marrow which accounts for 10 to 15% of all hematological malignancies and 1 to 2 % of all malignancies[2&5]. Multiple myeloma presents in 50 to 70 % with bony pain due to lytic lesions and pathological fractures and 10 to 40% is asymptomatic. A high index of suspicion should be kept in mind to avoid diagnostic delay.

Multiple myeloma characterized by proliferation of malignant plasma cells in bone marrow and most often associated with production of monoclonal immunoglobulins (M component). Secreted in blood and urine. These proteins can be detected by urine, serum, electrophoresis. But in 1 to 5 % of the cases urine and serum electrophoresis may not show immunoglobulins and these cases termed as non secretary multiple myeloma as occurred in our case.[1]

Non secretary multiple myeloma were first described by serry in 1958 since then various case reports have appeared in describe in variations of appearance of tumor. It has been postulated there may be reduced proteins protein cynthesis 0r increased breakdown on immunoglobulins intracellular or extracellulary. With increased sensitivity of detection of M protein and new advanced methods of detection of free light chain assay in serum or urine the diagnostic consideration of non secretory multiple myeloma is slowly decreasing [1,3,4].

Based on the intracytoplasmic immunoglobulins some researchers further classified non secretory multiple myeloma in to two types. Producer type (85%) more common type charecterised by demonstrable immunoglobulins in plasma cell but not in blood, non producer type (15%) where immunoglobulins not found in the plasma cells.

As per prognosis and treatment both Multiple Myeloma and Non secretory Multiple Myeloma have same outcome. As per some studies because of non involvement of kidney in Non secretory Multiple Myeloma survival rate is more than Multiple Myeloma but because of late diagnosis due to absence of paraproteins in serum and urine shortens their survival so overall survival rate is same in both[6] .Hence high index of suspicion should be kept in mind.

CONCLUSION:

In conclusion mere absence of paraproteins in serum and urine does not rules out Multiple Myeloma. High index of suspicion should be kept in mind when ever patients presents with bone pains and multiple pathological fractures and comprehensive image studies and histopathological confirmation needed to diagnose Non secretory Multiple Myeloma in which early intervention results in improvement in outcome.

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