CASE OF THE MONTH-JULY

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History

- 46-year-old male
- Complaints of severe low back pain with radiation to bilateral lower limbs: 3 Months
- Unable to sit or walk.
- No history of trauma/ prolonged fever, significant weight loss, any limb weakness or bladder-bowel involvement.

Examination findings

- Conscious, oriented with stable vitals.
- Cranial examination: normal.
- Motor examination revealed a power of 5/5 in both upper limbs and 4+/5 in both lower limbs.

Investigations

- CBC -Hb: 164 g/L

  TLC: $11.5X10^9$ /L

  DLC: P70 L24 M-5 E-1

  Platelets: $332X10^9$ /L.

- Renal and Liver function tests: WNL

MRI spine

- Expansile lytic lesion measuring 5.3cm x 4cm causing partial bony destruction and wedge collapse of L5 vertebrae associated with heterogeneously enhancing non-necrotic paravertebral soft tissue component, resulting in foraminal stenosis.

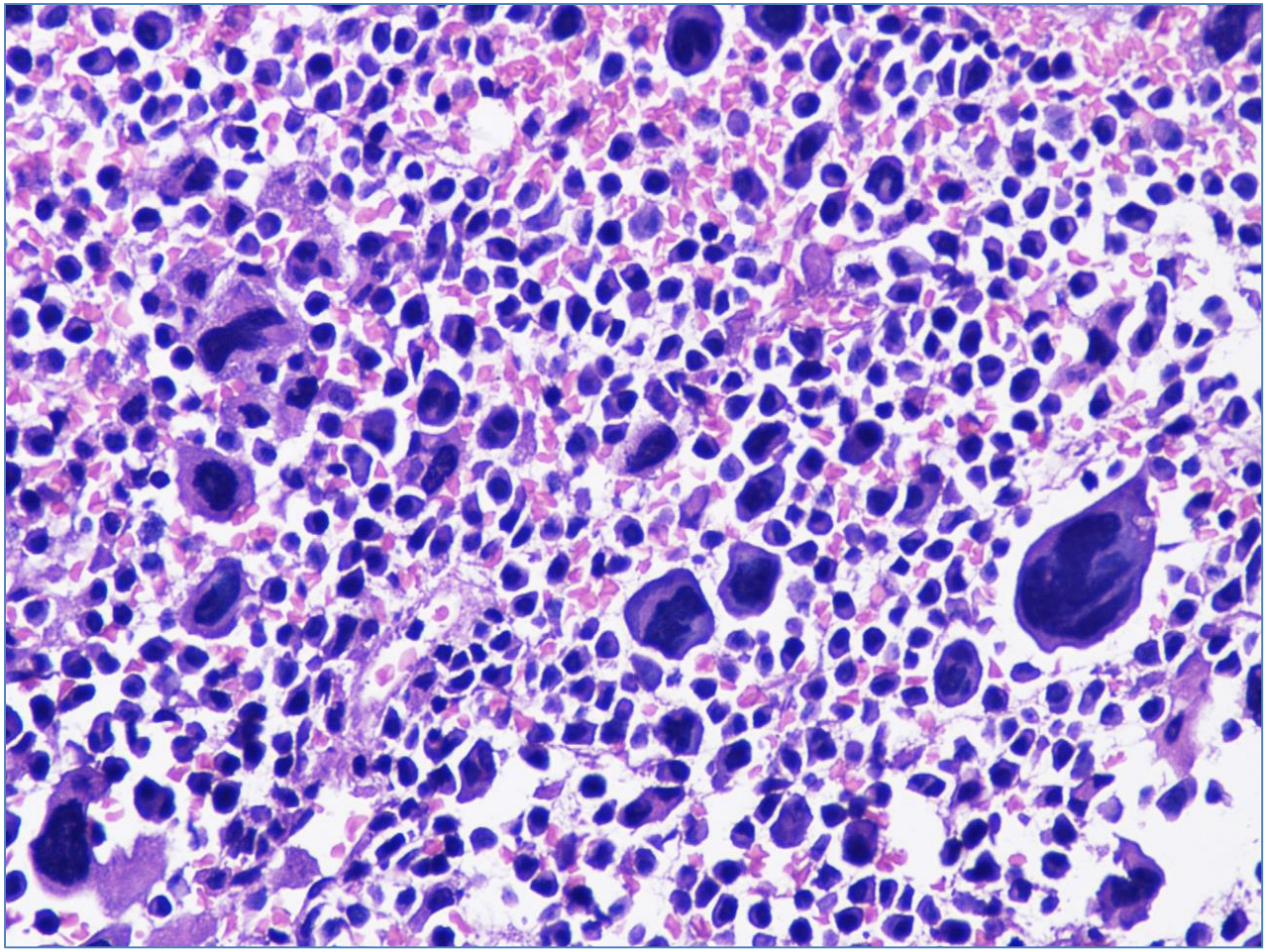
PET-Scan

- Metabolically active osteodestructive lesion (SUV max 4.8) with associated lobulated soft tissue component, extending along the left common iliac vessels, upto the presacral region
- Rest of the both axial and appendicular skeletal system showed physiological tracer distribution

Vertebral biopsy cores from L5 vertebral lesion

- Diffuse infiltration by plasmacytoid neoplastic cells with marked anisonucleosis and numerous large multilobated bizzare cells resembling megakaryocytes with homogenous chromatin and minimal mitotic activity.

Vertebral biopsy cores from L5 vertebral lesion-40X

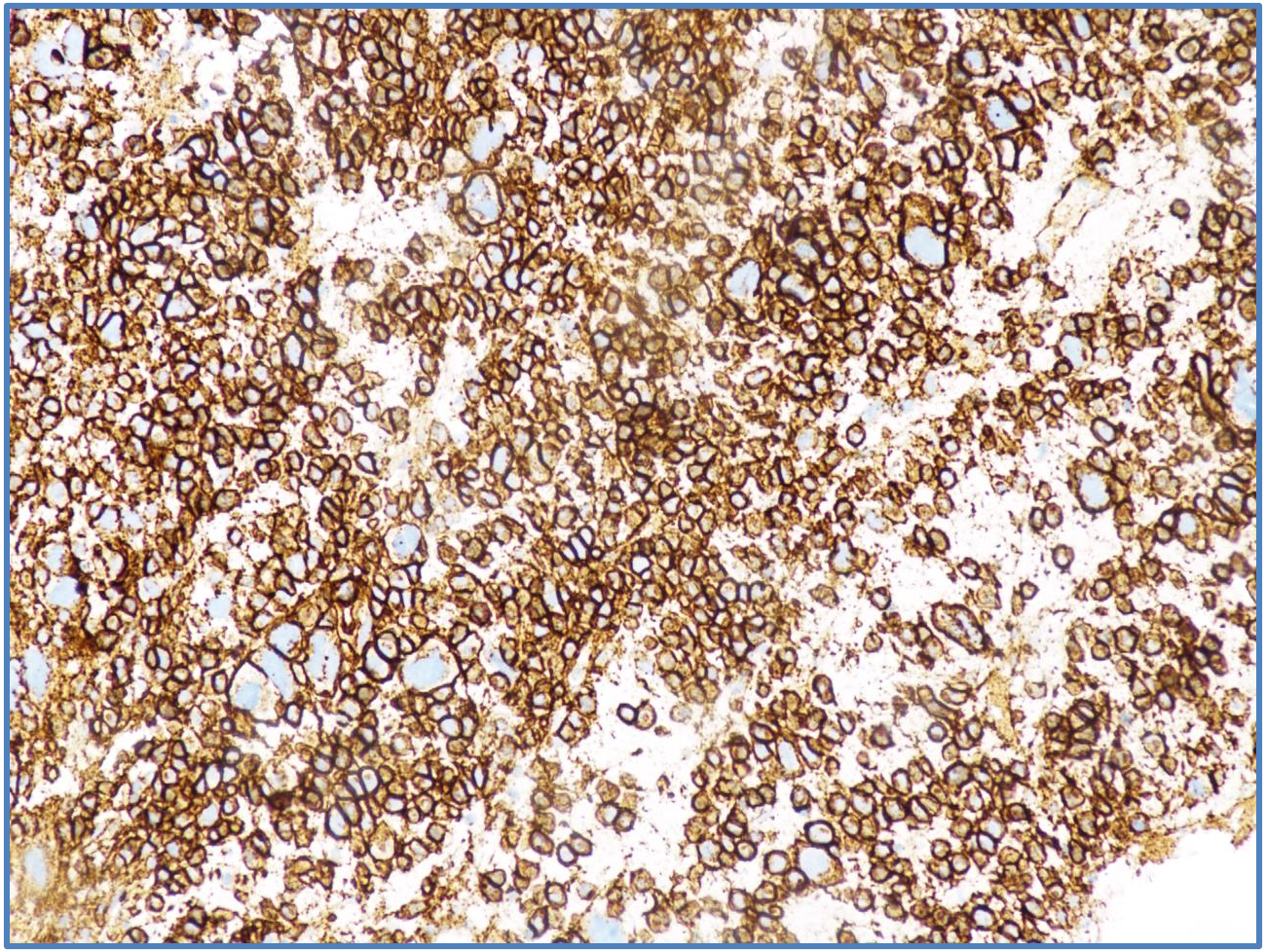


Diffuse infiltration by plasmacytoid neoplastic cells with marked anisonucleosis and numerous large multilobated bizzare cells resembling megakaryocytes with homogenous chromatin and minimal mitotic activity.

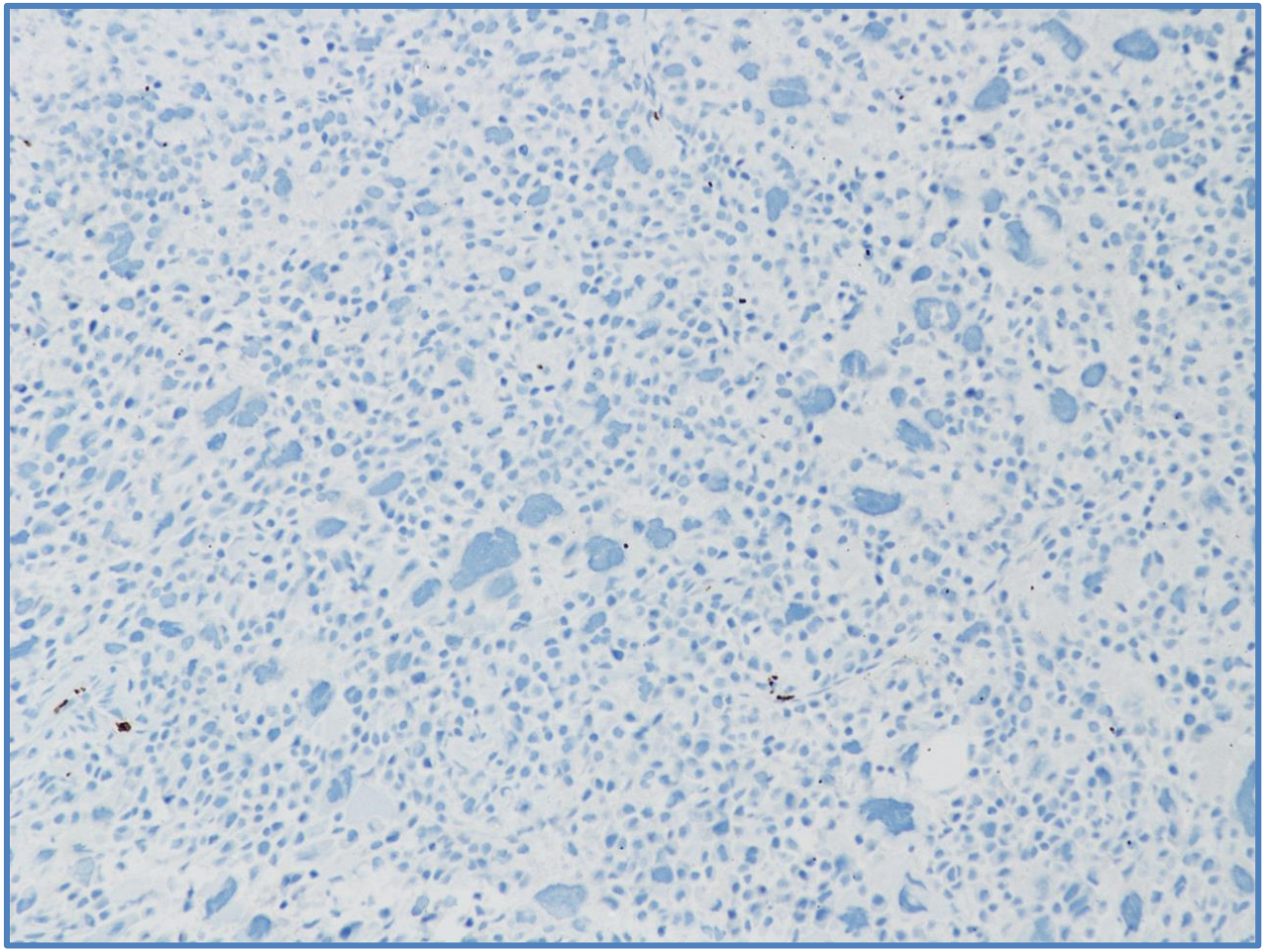
IHC

- The tumor cells including the scattered multilobated bizarre cells were diffusely positive for CD138 and CD79a with kappa light chain restriction
- Negative for CK, LCA, CD20, p53, phosphor-histone H3 (PH3) and CD61
- Ki67 index was 5-10%

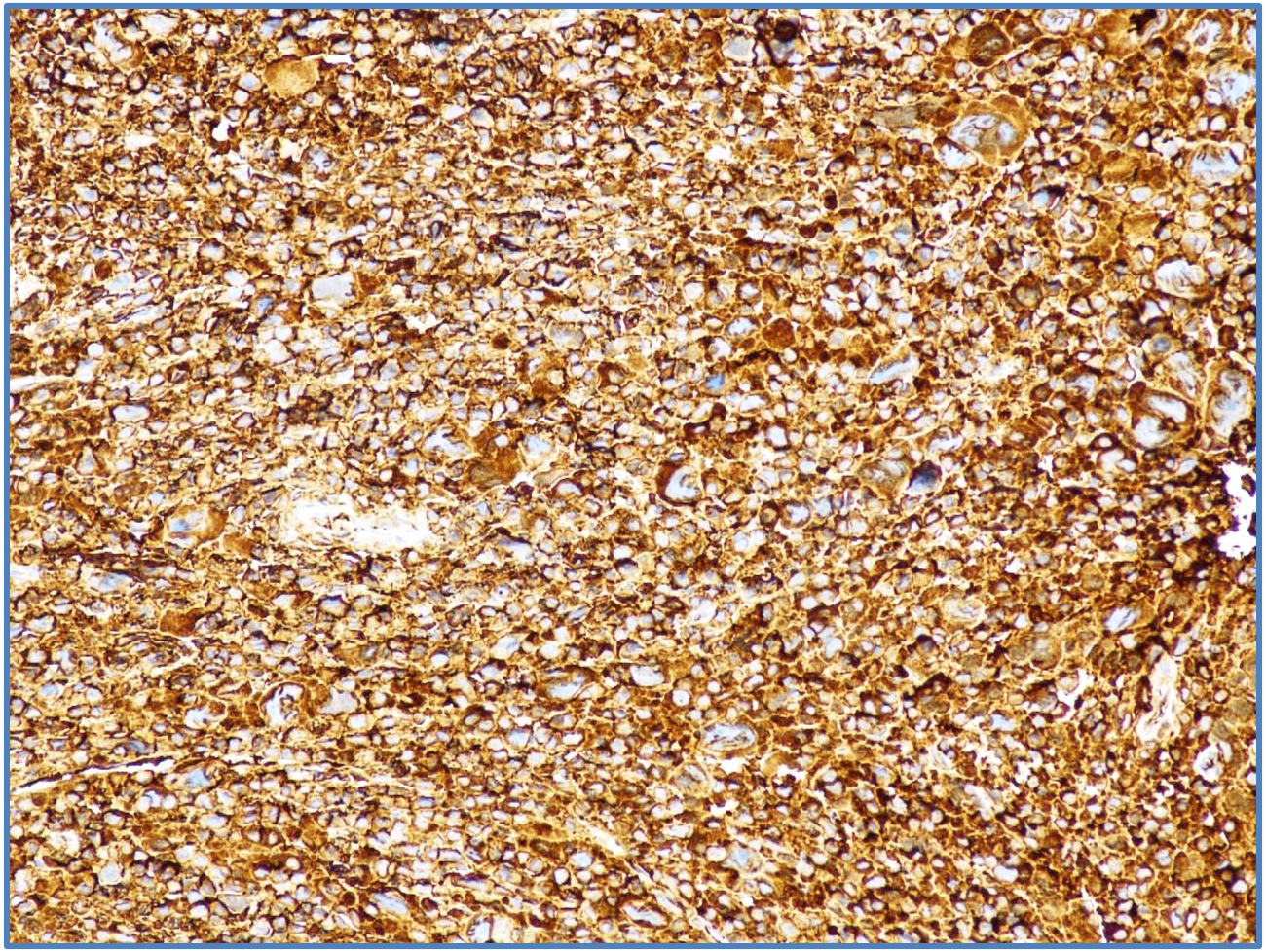
IHC-CD138



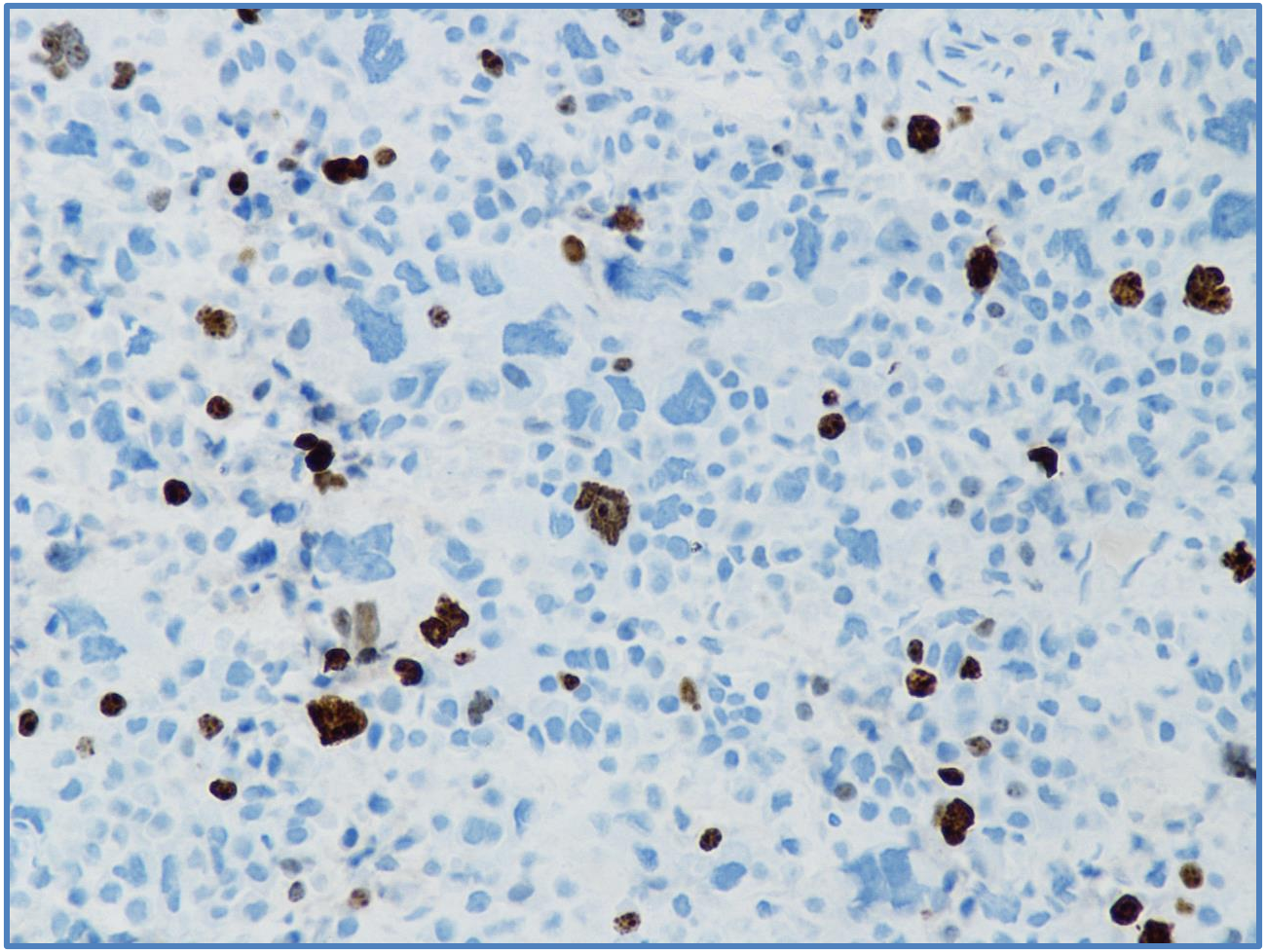
IHC-CD61



IHC-kappa light chain



IHC- Ki-67



Other Investigations

- Bone marrow biopsy showed <5% plasma cells.
- No distinct M-spike was seen on serum protein electrophoresis.
- FISH studies for myeloma was negative for del 13q14.3, del 17p13.1, translocation (11;14) (CCND1/IGH),t(4;14) (FGFR3/IGH) & t(14;16) (IGH/MAF).

Final diagnosis

- **Solitary plasmacytoma of lumbar vertebrae with <u>BIZARRE MULTILOBATED MYELOMA CELLS MIMICKING MEGAKARYOCYTES</u>**

Treatment

- He underwent L5 vertebroplasty followed by external beam radiotherapy.

Discussion

- Wide morphological spectrum of myeloma cells varying from mature to immature, plasmablastic and pleomorphic multilobated cells mimicking megakaryocytes
- Clinical significance remains uncertain due to limited number of case reports.

- Few recently published case reports have shown association of such bizarre morphology with adverse karyotypic abnormalitites and poorer overall survival, seen either at onset or as a feature of disease progression.
- Rare case reports have shown presence of such morphology in plasma cell leukemia post administration of bortezomib and dexamethasone that ultimately progressed to anaplastic myeloma with t(11;14) chromosomal abnormality.

Important points from this case

- In our study, these bizarre myeloma cells mimicking megakaryocytes showed low Ki-67 index and no significant expression of p53 and PH-3 on immunohistochemistry.
- There was lack of any systemic features or adverse karyotypic abnormalities .

Conclusion

- Such morphology should be considered as another morphological variant of myeloma cell attributable to possible degenerative changes as described in other neoplasms such as symplastic leiomyomas, rather than an indicator of aggressive disease.
- However, it would be interesting to follow up such cases for clinical implications.

Bibliography

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THANK YOU