Isolated Testicular Plasmacytoma Following Haploidentical Allogeneic Transplant in High-Risk Multiple Myeloma: A Case Report

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- Multiple myeloma (MM) is an incurable plasma cell malignancy characterized by frequent relapses despite aggressive multimodal therapy (1).
- High-risk MM, defined by cytogenetic features such as t(4;14) translocation and 1q gain, is associated with inferior outcomes (2).
- Allogeneic hematopoietic stem cell transplantation (allo-HSCT) may provide durable disease control but relapse remains common, particularly as extramedullary disease (EMD) (3,4).
- Testicular plasmacytomas are extremely rare sites of extramedullary relapse, likely related to the testis acting as an immune-privileged sanctuary site (5,6).

Case presentation

- We present a case of a 40-year-old male, diagnosed April 2018 with high-risk IgA κ MM (ISS I, t(4;14), 1q gain).
- Initial therapy:
  – VRD × 4 → complete remission
  – Tandem ASCT (Melphalan 200)
  – VRD consolidation × 2
  – Lenalidomide maintenance stopped March 2020 (hematologic toxicity).

- Relapse (2021): 27.5% plasma cells, ↑ IgA, anemia; no imaging progression.
  – Treated with Daratumumab–Pomalidomide–Dexamethasone (DPD) → VGPR.
- Haploidentical allo-HSCT (Aug 2022):
  -Conditioning: T1B2F + post-transplant cyclophosphamide.
  – 100% donor chimerism.
  – Complications: grade 1 cutaneous GVHD; BK virus cystitis.

November 2024: new painless right testicular mass.
– Orchiectomy performed → 22 mm testicular plasmacytoma.
– Restaging (FDG-PET, spinal/pelvic MRI, marrow, labs) negative for systemic disease.
– Only symptom: mild fatigue; no B symptoms

DISCUSSION

- This case demonstrates a rare isolated testicular relapse after haploidentical allo-HSCT in high-risk MM.
- The testis may serve as an immune sanctuary, limiting graft-versus-myeloma surveillance and facilitating localized relapse (5,6).
- Orchiectomy provided diagnostic confirmation and local disease control.
- The tumor board recommended scrotal radiotherapy for further local consolidation, without systemic therapy given negative restaging and full donor chimerism (3,7).
- Close surveillance with PET/CT imaging every 6–12 months was planned.
- Highlights the importance of multidisciplinary management in extramedullary relapse, particularly in immune-privileged sites where systemic therapy may not be immediately indicated.

CONCLUSION

- Isolated testicular plasmacytoma is an uncommon relapse pattern after allo-HSCT in MM.
- Management may rely on local therapy (orchiectomy ± radiotherapy) in the absence of systemic disease.
- Recognition of sanctuary-site relapse is critical for guiding individualized treatment strategies.
- Long-term monitoring remains essential due to the risk of systemic progression.

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