EBV Positive Sinonasal Plasma Cell Neoplasms : A Case Series with Favorable Outcomes in Elderly Males

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INTRODUCTION

- Epstein-Barr virus (EBV)-positive plasma cell neoplasms are uncommon and typically exhibit aggressive clinical behavior resembling mature aggressive lymphomas rather than multiple myeloma (MM).
- Plasmablastic lymphoma (PBL), the most common subtype, typically carries an aggressive course with poor prognosis[1]; in contrast, EBV-positive plasmacytomas in immunocompetent hosts show survival outcomes comparable to EBV-negative plasmacytomas rather than PBL.[2]
- EBV-positive plasmacytoma lacks recognition as a distinct entity in the ICC or WHO 5th edition3, with ill-defined diagnostic criteria and significant morphologic overlap with PBL.[3]

OBJECTIVES

We hypothesize that indolent EBV-positive sinonasal neoplasms in immunocompetent elderly males, initially diagnosed as PBL, may fall within the spectrum of EBV-positive plasmacytoma, and aim to compare their clinicopathologic features with PBL and plasmacytoma criteria to guide diagnosis and management.

METHODS

- Identified six immunocompetent elderly males with EBV-positive sinonasal neoplasms initially diagnosed as PBL, demonstrating an unusually indolent clinical course.
- Comprehensive clinical, treatment, and long-term outcome data were extracted from electronic medical records.
- Available diagnostic tissue specimens and pathology reports underwent centralized expert hematopathology review.

RESULTS

Six immunocompetent elderly males (aged 61–80 years) presented with EBV-positive sinonasal neoplasms initially diagnosed as plasmablastic lymphoma (Table 1).

TABLE 1: Summary of Clinical Features of Six Cases of EBV-Positive Sinonasal Neoplasms Initially Diagnosed as Plasmablastic Lymphoma

	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5	Patient 6
Age / Sex	66 / M	74 / M	69 / M	61 / M	80 / M	62 / M
Presentation Site	Paranasal Sinuses	L Inferior Turbinate	R Nostril	R Inf. Turbinate	R Nasal Cavity	L Nasal Cavity
Symptom Duration Prior to Diagnosis	3 Months	7 Months	2 Weeks	5 Months	6 Months	N/A
Ann Arbor Stage	IE	IE	IV	IE	IE	IE
Bone Marrow Involvement (%)	Negative	Negative	Positive (5%)	Negative	Negative	Negative
Paraprotein (M-Spike)	N/A	Negative	Negative	Negative	N/A	N/A
Serum Free Light Chains & Ratio	N/A	WNL	N/A	N/A	N/A	N/A
HIV Status	Negative	Negative	Negative	Negative	Negative	Negative
ECOG Performance Status	0	0	0	0	2	1
B Symptoms (Present/Absent)	Absent	Absent	Absent	Absent	Absent	Absent
LDH Level (U/L)	WNL	WNL	WNL	WNL	WNL	Elevated
Cytopenia	Absent	Absent	Absent	Absent	Absent	Absent
Treatment & Outcome						
Treatment Administered	CHOP x6, IT MTX, XRT	R-CHOP, IT MTX, RT	Expectant Management	DA-EPOCH, RT	Rituximab, RT	CHOEP, Pembrolizumab, RT
Treatment Response	CR	CR	CR	CR	PD (s/p Rituximab)	CR
Follow-up Duration	5 years	10 years	13 years	9 years	6 months	22 months
Status at Last Follow-up	Deceased	Alive, NED	Alive, NED	Alive, NED	Alive	Deceased
Cause of Death	Esophageal cancer	N/A (Alive)	N/A (Alive)	N/A (Alive)	N/A (Alive)	Cutaneous T-cell lymphoma

Abbreviations: N/A: Not available/not assessed; IT MTX: Intrathecal methotrexate; XRT/RT: Radiation therapy; NED: No evidence of disease; WNL: Within normal limits; CR: Complete remission; PD: Progressive disease; Neg.: Negative; Abs.: Absent. Note: Patient 6 received subsequent therapies for concurrent cutaneous T-cell lymphoma (CTCL) rather than primary sinonasal disease.

Morphologically, three cases (Patients 1, 2, and 3) showed mixed mature plasma cells with atypia and plasmablastic morphology (Figures 1 and 2), while the remaining three (Patients 4, 5, and 6) were purely plasmablastic (Figure 3).

FIGURE 1. Case 1: Plasmablastic cells, with areas of mature appearing plasma cells. Some of the cells show prominent nucleoli, and binucleate and multinucleate forms are also present. (H&E; 400x).

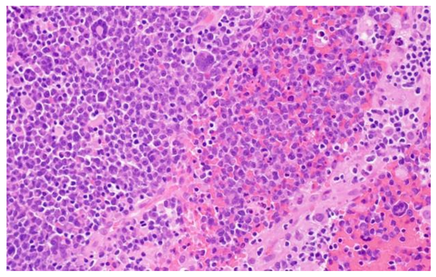
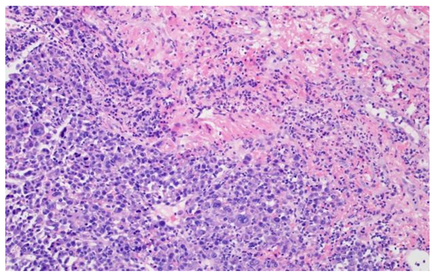
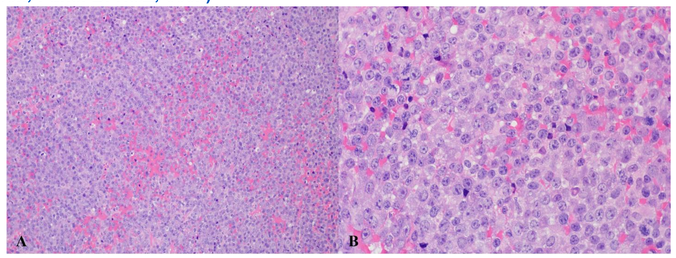


FIGURE 2. Case 3: Plasmablastic cells, with areas of mature appearing plasma cells and necrosis. (H&E ; 200x)



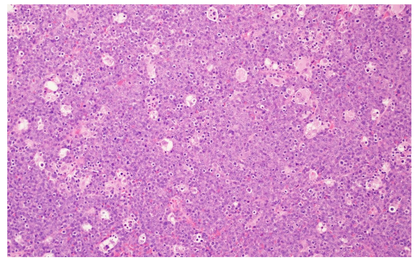
RESULTS

FIGURE 3. Case 6: Sheets of plasmablastic cells with large eccentrically placed round nuclei, vesicular chromatin, prominent nucleoli and modest amount of eosinophilic cytoplasm with prominent mitotic figures. (Panel A: H&E; 200x; Panel B: H&E; 600x)



High-grade features were inconsistent; "starry sky" was present only in Patient 1 (Figure 4), necrosis only in Patient 3 (Figure 2), and Ki-67 was 50% in the only assessed case (Patient 4).

FIGURE 4. Case 1: Starry sky appearance (H&E; 200x).



Immunophenotypically, all six cases were positive for EBV, CD138, and monotypic light chains (kappa in Patients 1, 2, and 6; lambda in Patients 3, 4, and 5); CD20 was negative in four (Patients 1, 4, 5, and 6) and patchy positive in Patient 2, PAX5 was negative in two assessed cases (Patients 4 and 6), and Patient 3 had t(11;14) identified by bone marrow FISH.

CONCLUSIONS

- Sustained remissions (9–13 years) in this cohort are atypical for conventional PBL, suggesting these cases may represent an indolent subset of EBV-positive plasma cell neoplasms.
- Marked overlap exists between EBV-positive plasmacytoma and PBL; when applying proposed criteria, most cases did not favor a classic PBL diagnosis, though data were limited.
- Favorable outcomes imply these tumors are either unusually responsive PBL or, more likely, a biologically distinct, less aggressive EBV-driven neoplasm.
- Recognizing this potential clinicopathological profile may help guide therapeutic decisions and avoid unnecessary treatment intensification.

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