A 64-year-old female presented with personality changes, acalculia, falls, headache and nausea. CT and MR imaging of the head revealed a homogeneously contrast-enhancing 7 cm x 4.4 cm x 4.4 cm right frontal dural-based mass, concerning for a meningioma. She underwent a right frontal craniotomy with complete resection. Post-operative pathology demonstrated sheets of lymphocytes and plasma cells with small numbers of germinal cells present. The infiltrate was limited to the dura and leptomeninges. Immunophenotype as demonstrated by immunohistochemistry and flow cytometry was diagnostic of an extranodal marginal zone lymphoma with extensive plasmacytic differentiation. Given the normal bone marrow biopsy and absence of disease on CT chest, abdomen, and pelvis, she was diagnosed with an extranodal primary dural-based marginal zone B-cell lymphoma (MZL) with plasmacytic differentiation. Primary dural lymphomas are a well-described subset of primary central nervous system (CNS) lymphomas that most commonly present as low grade lymphomas. MZLs generally carry a much better prognosis than typical diffuse large B-cell lymphomas. This case illustrates that hematopoietic malignancies should be considered in the differential diagnosis of dural based masses in addition to meningiomas or less common dural metastases, solitary fibrous tumors, leiomyosarcomas, and hemangiopericytomas. Typically dural based lymphomas have increased vasogenic edema compared to meningiomas. Unlike other extranodal MZLs, dural based MZLs have no strong association with chronic inflammatory conditions, infections, or immunosuppression. The literature supports that MZLs are very radiosensitive; with excision and low dose-localized radiation therapy, patients may remain disease free locally. However, systemic recurrence may occur, possibly because the dura is outside the blood brain barrier. Appropriate diagnosis is important as it has both prognostic and treatment implications.