Suprasellar germ cell tumors (S-GCTs) are rare, presenting in either solitary or multifocal fashion. In this study, we retrospectively examine 22 solitary S-GCTs and 20 bifocal germ cell tumors (GCTs) over a 30-year period and demonstrate clinical, radiographic, and prognostic differences between the two groups with therapeutic implications. Compared to S-GCTs, bifocal tumors were almost exclusively male, exhibited a higher rate of metastasis, and had worse rates of progression-free and overall survival trending toward significance. We also introduce a novel magnetic resonance (MR) imaging classification of suprasellar GCT into five types: an IIIrd ventricle floor tumor extending dorsally with or without an identifiable pituitary stalk (Type Ia, Ib), ventrally (Type III), in both directions (Type II), small lesions at the IIIrd ventricle floor extending to the stalk (Type IV), and a tumor localized in the stalk (Type V). S-GCTs almost uniformly presented as Type I-III, while most bifocal GCTs were Type IV with a larger pineal mass. These differences are significant as bifocal GCTs representing concurrent primaries or subependymal extension may be treated with whole ventricle radiation, while cerebrospinal fluid (CSF)-borne metastases warrant craniospinal irradiation (CSI). Although further study is necessary, we recommend CSI for bifocal GCTs exhibiting high-risk features such as metastasis or non-germinomatous germ cell tumor histology [1)].

1)
Esfahani DR, Alden T, DiPatri A, Xi G, Goldman S, Tomita T. Pediatric Suprasellar Germ Cell Tumors: A Clinical and Radiographic Review of Solitary vs. Bifocal Tumors and Its Therapeutic Implications. Cancers (Basel). 2020 Sep 14;12(9):2621. doi: 10.3390/cancers12092621. PMID: 32937871; PMCID: PMC7565935.