The index tumor showed focal papillary and predominantly solid areas with mitotc index of 1-3/10 high power fields. The tumor was characteristically positive for PanCK. Synaptophysin, NSE and EMA staining was also observed with Ki67 proliferation index of 5%. Immunohistochemical and ultrastructural features suggest that these tumors originate from the remnants of specialized ependymal cells of the subcommissural organ. On electron microscopy, PTPR reveals ultrastructural features indicative of ependymal differentiation, including abundant microvilli at the apical cell pole.[6] Recurrent chromosomal imbalances include loss of chromosome 10 as well as gains on chromosome 4. No syndromic association or evidence of genetic susceptibility has been documented. Gozchzik et al have described PTEN mutation and activation of PI3K/Akt/mTOR pathway in the pathogenesis of PTPR.[7]

These tumors are often complicated by local recurrences. Incomplete resection tends to be associated with decreased survival and recurrences. Ki67 is an important determinant of prognosis. Tumors that have Ki67 proliferation index of greater than and equal to 10% have a median progression-free survival time of 29 months versus 67 months for those whose tumor have a Ki67 proliferation index of <10%. Radiotherapy has been described as an effective modality for the treatment of PTPR as the surgical excision is often difficult due to the critical location of the tumor.[8]

One of the many tumors seen in this region is Pineocytoma, that is a rare neoplasm accounting for about 20% of all the pineal parenchymal tumors and affects adults with a mean age of 43 years. It is a well differentiated pineal parenchymal neoplasm composed of uniform cells forming large pineocytomatous rosettes and/or of pleomorphic cells showing gangliocytic differentiation. Pineocytomatous rosettes vary in number and size with anucleate centres composed of delicate, enmeshed cytoplasmic processes resembling neuropil. The index tumor did not show rosettes or gangliocytic cells. On the contrary, the tumor cells were arranged in the form of papillae and solid sheets. Pineocytomas usually show a strong immunopositivity for synaptophysin, neuron specific enolase and NFP with a mean Ki67 proliferation index of less than 1%. The index case depicted diffuse positivity for PanCK that helped in differentiating it from pineocytoma. Moreover Ki67 proliferation index of 5% was seen. The other tumor of the pineal gland is Pineal parenchymal tumor of intermediate differentiation (PPTID). This tumor is in between Pineocytoma and pineoblastoma. There are clearly delineated areas of pineoblastoma admixed with pineocytoma. There are sheets