Although most common loci of intracranial primary germinoma (IPG) are pineal and suprasellar regions, there are some reports of unusually located IPG which makes confusion of differential diagnosis of the tumor. Especially within posterior fossa area, IPG is hardly considered because of its extreme rareness and unmatched clinical characteristics comparing with supratentorial IPGs. Most usual areas within posterior fossa are known as fourth ventricle and medullar oblongata. With the best of our knowledge, there are only less than twenty reported cases of fourth ventricle IPG, yet. Herein, we presents a case of 24 years old female patient who had a large fourth ventricle tumor which turned out to be germinoma. The tumor had been suspected as an ependymoma with consideration of age of patient and features of imaging findings. But, intraoperative and pathologic findings were differ from ependymoma, and finally defined as a germinoma. After chemotherapy with consecutive radiation therapy, complete remission of the tumor without neurological complications was acquired.