The molecular classification of ependymoma has recently progressed. Ependymomas occurring in the posterior fossa are classified into subtypes PF-A and PF-B. PF-A ependymomas show clinical characteristics of a predilection for younger patients (including infants), lateral extension, a tendency to disseminate, and poor prognosis. Here we discuss tips for surgery according to pathological findings from PF-A ependymomas.

**MATERIALS AND METHODS:** We retrospectively evaluated the surgical and pathological findings for pediatric patients with ependymoma treated in our institute from 2001 to 2015. We examined cases of PF-A ependymoma occurring in the posterior fossa and progressing laterally to the cerebellopontine angle. Confirmation of the molecular diagnosis is ongoing.

**RESULT:** Two cases of PF-A ependymoma were evaluated. Surgical findings revealed that the tumors occurred at the foramen of Luschka, and progressed medially into the fourth ventricle and laterally to the cerebellopontine angle. The tumors engulfed the local cranial nerves and vertebrobasilar artery, but did not invade and were easily separated out. Pathological findings showed that the forward parts of the tumors were polypoid and comprised four layers: a superficial layer of linear cuboidal epithelium, resulting in a clear boundary; a GFAP-positive layer; an AE1/AE3-positive layer; and the innermost tissue of anaplastic ependymoma.

**DISCUSSION:** The macroscopic features in our cases were similar to those described as "plastic ependymoma" in the World Health Organization classification. We conclude that the "plastic" feature is a special characteristic of PF-A ependymoma that needs to be considered when dissecting the tumor from adjacent nerves and arteries.