Precocious Puberty Caused by A Large Suprasellar Glioependymal Cyst in A Child

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Poster ID: 1475
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Introduction

Glioependymal cysts are a rare, benign intracranial lesion. Their presentation depends on the size, location and mass effect on adjacent brain or cranial nerves. We present a rare case of suprasellar glioependymal cyst causing precocious puberty in a child. Surgical excision successfully improved his clinical condition.
Methods

Review of patient’s medical notes and images
Results

A 7 year-old boy presented with features of precocious puberty, including sudden growth spurt, deepening of voice and enlargement of external genitalia. He also had occasional headache, vomiting and blurring of vision.

MRI brain: large cystic lesion (maximum diameter 5.7cm) arising from the suprasellar region expanding the third ventricle. Posteriorly, it extended into the interpeduncular and prepontine cisterns, exerting mass effect on the midbrain and pons. The 4th ventricle was compressed, with gross hydrocephalus but without CSF transudation.

Pituitary hormone profile: raised testosterone level (3.5nmol/L).
He underwent **right pterional craniotomy and excision of the cyst**. Intra-operatively, the lesion was noted to be compressing on the right optic nerve. It had a thick wall and the cyst fluid was clear. His headache and vision improved post-operatively, and he was discharged after 4 days.
Post-op CT brain: Excision of suprasellar cyst. **Reduction in size of lateral and third ventricles.** 4th ventricle is not dilated.

**Histology:** cyst wall with an attenuated lining, resting directly on brain parenchyma, and rimmed by a thin layer of loose fibrous tissue. GFAP, S100 and vimentin are positive in the glial tissue. The diagnosis was **glioependymal cyst.**

At 3 months follow up, he remained neurologically intact with **improved control of his precocious puberty**, e.g. decreased testicular size.
Discussion

Glioependymal cyst is a rare type of intracranial cyst. The presenting symptoms may vary according to the location and extent of compression on the adjacent intracranial structures.

We present here a case of precocious puberty caused by a large glioependymal cyst arising from the suprasellar region.

Surgical excision of the cyst successfully relieved the mass effect on neighboring structures and improved control of his precocious puberty.
Summary points

Glioeependymal cyst is a rare type of intracranial cyst. Neurosurgeons should be aware of the different possible diagnoses of cystic lesion in the suprasellar region, including rare entities such as glioeependymal cyst.

Surgical excision is indicated in cases of large cysts with significant mass effect or if symptomatic.