



## Pathology & Biology Section – 2005

### **G73 Rathke's Cleft Cyst: Alleged "Brain Tumor" in a Middle-Aged Cocaine Abuser**

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This presentation, will show the histology of a congenital anomaly that may present in a forensic case as a history of "brain tumor."

A 47-year-old female complained of chest pains at home, but failed to seek medical treatment. She collapsed at home later that day in the presence of a family member. She had a history of chronic cocaine use, and relatives were concerned that she might have used the drug on the day of her death. Her only other condition was an unclear history, according to the family, of a "brain tumor." The tumor had reportedly been present for some time, but she had received no recent medical care or treatment for it.

At autopsy, gross inspection of the uncus region revealed an enlarged tan-brown mass beneath the pituitary stalk. The stalk itself was fluctuant to pressure, but did not appear to be enlarged. Sectioning of the brain revealed a focal 0.4 cm diameter mass, with an apparent necrotic or caseous center, abutting the optic chiasm on one side, and the mammillary bodies on the other. Microscopic evaluation revealed the mass to be cystic, with a true wall of squamous epithelium, surrounding a center of amorphous fluid and squames. This is believed to be a Rathke's cleft cyst.

Rathke's cleft cysts are found in all age groups, but mean occurrence is 40-50 years. They are typically asymptomatic and found incidentally at autopsy. During embryologic development, Rathke's pouch is formed from an evagination of oral ectoderm that grows toward the midbrain. When the anterior lobe of the pituitary gland is formed from this ectoderm, the pouch is reduced to a residual cleft. Cysts are formed when the cleft persists, becomes enlarged, and its secretions accumulate. The cyst fluid can be yellow and thin, or green or brown thick mucus. It is lined with columnar or cuboidal epithelium in most cases, but mixed cell epithelium or pseudostratified squamous epithelium has been found. Ciliated columnar cells and goblet cells are also present in a majority of the cases. Most Rathke's cleft cysts are asymptomatic, but they can produce a mass effect causing headaches, visual changes, and pituitary dysfunction. Pituitary histology in this case appeared normal. Rathke's cleft cysts are usually located within the sella turcica. Rarely, they are found in a suprasellar location, as in this case.

Death was due to the complications of chronic cocaine abuse, with hypertensive and atherosclerotic cardiovascular disease. The family could be assured that the "brain tumor" had been located at autopsy, but had nothing to do with her death.

**Rathke's Cleft Cyst, Rathke's Pouch, Forensic Pathology**