Pineal apoplexy associated with anticoagulant therapy

Case report

MICHAEL L. J. APUZZO, M.D., LYCURGUS M. DAVEY, M.D., AND ELIAS E. MANUELIDIS, M.D.

Division of Neurological Surgery, University of Southern California School of Medicine, Los Angeles, California, and Divisions of Neurological Surgery and Neuropathology, Yale University School of Medicine, New Haven, Connecticut

A case is presented with the acute development of a pineal region syndrome secondary to hemorrhage into a pineal cyst in a patient who was under anticoagulant therapy. Resolution of the symptoms and signs followed excision of the lesion.

KEY WORDS pineal • pineal cyst • intracranial hemorrhage • anticoagulation • pineal surgery

A n apoplectic event may be the first manifestation of a neoplasm of the central nervous system. The syndrome of pituitary apoplexy has been particularly well defined. It has been suggested that the administration of anticoagulant medication in the presence of an underlying neoplasm may increase the risk of hemorrhage associated with that lesion.16,19

This report documents the evolution of a pineal region syndrome secondary to a hemorrhage into a pineal cyst in a patient under anticoagulant therapy.

Case Report

This 56-year-old man had suffered the acute onset of severe occipital headache and nausea 96 hours prior to admission. Within 6 hours of the onset of symptoms he had become mildly lethargic and disoriented with an unsteady gait, and was admitted to a community hospital.

Six months earlier, the patient had been placed on bishydroxycoumarin therapy because of the development of multiple pulmonary emboli while he was hospitalized for myocardial infarction. He made a complete recovery and returned to work, but remained on anticoagulant medication.

On admission to the community hospital, his blood pressure was 130/90. He was disoriented, confused, and manifested a profound deficit of both past and recent memory. He had marked limitation of upward gaze with decreased reactivity of the right pupil, nystagmus on lateral gaze, which was more marked to the right, and generalized hyperreflexia which was greater on the left, with a left extensor plantar response. There was no neck stiffness. Lumbar puncture revealed an opening pressure of
M. L. J. Apuzzo, L. M. Davey and E. E. Manuelidis

FIG. 1. Pneumoencephalogram demonstrating a mass with a calcified rim encroaching on the posterior third ventricle and quadrigeminal cistern. 160 mm H2O. The fluid was crystal clear with no cells and a protein of 54 mg%. Skull films, echoencephalogram, and brain scan were considered to be normal. Prothrombin time was 27.5 seconds with a control of 11.5 seconds.

The patient was placed on dexamethasone, 4 mg four times daily, and thiamine, 100 mg twice daily; thebishydroxycoumarin therapy was discontinued. After a period of observation, the patient was transferred to the Neurological Service of the Yale-New Haven Medical Center.

Examination. His blood pressure was 120/70, and the neurological deficit had remained static. Prothrombin time was 15.8 seconds with a control of 11 seconds. A plain skull series was interpreted as demonstrating posterior and inferior pineal displacement. Angiography disclosed ventricular enlargement with the suggestion of a mass lesion in the posterior third ventricle. Pneumoencephalography confirmed the ventricular enlargement and demonstrated a mass encroaching on the posterior portion of the third ventricle which appeared on tomography to have a calcified rim (Fig. 1).

Operation. A posterior fossa craniectomy was performed, and the pineal region was approached via the infratentorial supracerebellar route. With the aid of an operating microscope, a well-defined, 2.5-cm cystic lesion was totally excised from the region of the posterior third ventricle and superior quadrigeminal bodies.

Pathological Examination. On gross examination, the cyst wall was tan with a gold speckled appearance, and measured ap-
Pineal hemorrhage during anticoagulation

approximately 1 mm in thickness. The central portion of the cyst contained a chocolate-colored, semi-liquid material suggestive of hemorrhagic breakdown products.

Microscopically, the periphery of the lesion was composed of glial tissue with foci of mineralization. The outer edge of the glial rim in some areas displayed ciliated ependymal lining. A thin band of normal pineal tissue was seen within the glial wall. This was bounded externally by a thin fibrous strip (pineal capsule). Adjacent to the cavity, remnants of organizing hematoma were seen displaying striking proliferation of fibroblasts and capillaries along with numerous hemosiderin-laden macrophages. Within the cavity a relatively fresh hemorrhage was seen with early organization in parts (Fig. 2).

Postoperative Course. Within 1 week of the operative procedure, the patient had complete resolution of his gaze palsy and clearing of his mentation. One month postoperatively he was fully ambulatory. Examination 1 year postoperatively disclosed minimal nystagmus on vertical and horizontal planes with a slight left hyperreflexia and difficulty with tandem gait.

Discussion

Intracranial neoplasms are responsible for 4% to 6% of intracerebral hemorrhages. This complication is more often associated with metastatic tumors, especially melanomas and chorionepitheliomas. Oldberg's review of 832 gliomas disclosed that a hemorrhagic event was the initial manifestation in 0.84% of the cases. Although over 180 cases of pituitary apoplexy have been reported, little reference is made to these lesions in series dealing with primary or secondary intracranial hemorrhages. A review of the literature has disclosed no definite reports of either primary hemorrhage into a pineal gland or a pineal area neoplasm.

Hemorrhages in various organs are a well-recognized complication of anticoagulant administration. When the central nervous system is involved, these are likely to be manifested as intracerebral, subdural, subarachnoid, or spinal epidural hematomas. The risk of intracranial hemorrhage in normotensive patients with prothrombin levels maintained at greater than 20% is considered to be negligible, unless there is an un-

recognized underlying cerebral lesion, most commonly a glioma.

This patient was consistently normotensive, and his prothrombin level as recorded on admission was consistently above the "safe" level of hypocoagulability. However, the presence of a pineal cyst, of the type similar to that described by Ringertz, et al., possibly provided a complicating lesion in a patient with a state of hypocoagulability. Indeed, histological examination of the surgical specimen indicates that this patient had had minor small hemorrhages within and adjacent to the cyst in the stage of organization prior to the recent bleeding that caused his hospital admission.

References

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Address reprint requests to: Michael L. J. Apuzzo, M.D., Los Angeles County-U.S.C. Medical Center, 1200 North State Street, Suite 5046, Los Angeles, California 90033.