CORTISONE AS AN AID IN THE SURGICAL TREATMENT OF CRANIOPHARYNGIOMAS*

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The surgical treatment of the craniopharyngiomas has been attended by a high mortality rate in the past, especially when total removal was attempted. An operative mortality of 41 per cent, and even higher, has been reported.1,2,4,5,6 The close relationship of most craniopharyngiomas to the hypothalamus exposes the latter to operative trauma and in the past, postoperative death has usually been attributed to this cause. Another factor that was thought to contribute to this high mortality, and with good reason we now believe, was the longstanding direct pressure effect of the tumor on the pituitary gland itself.

Patients in whom the anterior lobe of the pituitary gland has been compressed with resultant hypopituitarism are a poor risk for any type of surgical procedure. They may die of adrenocortical collapse either during or shortly after operation. Even in patients without preoperative evidence of hypopituitarism, removal of a craniopharyngioma may necessitate extension of the dissection into the sella turcica with resultant damage to the hypophysis. This may lead to loss of endogenous adrenocorticotropic hormone upon which survival depends.

At the University Hospital the craniopharyngiomas have been approached for the past 30 years with the idea that total removal would be performed whenever possible. In cases in which the tumor extended beneath the optic chiasm to invade the third ventricle, or when it was densely adherent to the optic nerves or internal carotid arteries, only the accessible portions were removed. In the series reported by Gordy, Peet, and Kahn4 total removal was believed to have been accomplished in 25 of 51 cases. Recurrence was known to have taken place, however, in 6 of these patients. The operative mortality in the entire series was 41 per cent. The majority of deaths were attributed to severe hypothalamic reactions as a result of operative trauma.

We are reporting a series of 21 patients all operated upon by one of us (E.A.K.) since 1936. Since there has been little change in operative technique over this period of time, it is our opinion that the greatest variable affecting the markedly improved postoperative survival has been the use of

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cortisone. With this drug it has been possible to prevent postoperative adrenocortical failure and to effectively combat hyperthermia, which in itself may cause death. With the reduction in postoperative complications that the administration of cortisone has permitted, total extirpation of these tumors should be attempted in many more cases. In 1952 Ingraham, Matson and McLaurin reported good results with the use of cortisone in operations upon 5 patients with craniopharyngiomas and with ACTH in another pa-

![Figure 1](image_url)

**Fig. 1.** Photograph of the specimen removed from Case 1 of the cortisone series, a 2-year-old child with signs of hypopituitarism preoperatively. Total removal was believed to have been accomplished. Only the irregular solid portion of the tumor contained calcium. Microscopically some pituitary gland substance was attached to the tumor. This child has done well postoperatively but blindness which was present preoperatively has persisted. (Reprinted with permission from Charles C Thomas, Publisher.)