Introduction

Transsphenoidal hypophysectomy

EDWARD R. LAWS JR., M.D.

Department of Neurosurgery, Stanford University, Stanford, California

After Harvey Cushing abandoned the use of the transsphenoidal approach to pituitary tumors in 1927, most of the other neurosurgeons in the world followed suit. These relatively common, benign lesions were more or less effectively treated via a frontal or frontotemporal craniotomy. Most were large lesions—what we now call macroadenomas—and patients harboring these tumors presented with headache and visual loss. Hyperfunctioning tumors associated with acromegaly or Cushing’s disease were less often treated surgically, and prolactinomas were unrecognized.

Cushing’s Scottish trainee, Norman Dott of Edinburgh, continued to utilize the transsphenoidal route, and he taught it to Gerard Guiot of Paris. Guiot, in turn, inspired his Canadian pupil Jules Hardy and, incidentally, this commentator, to use the transsphenoidal technique, which he had begun to perfect through the use of a special lighted retractor and the x-ray image intensifier. It was Jules Hardy, however, who popularized the method, technically by introducing the operating microscope and microsurgical technique and conceptually by introducing the notion that the microadenoma could be selectively removed, sparing normal pituitary function.

In his 1971 paper, based on a personal series of 300 cases, Hardy presented a convincing argument for the use of transsphenoidal microsurgery. He demonstrated its effectiveness in performing hypophysectomies in cases of breast and prostate cancer and diabetic retinopathy, in removing pituitary tumors of all sizes, and in surgery for other sellar lesions such as craniopharyngiomas. In this paper one can see the genesis of the current-day explosion of applications of Hardy’s basic concepts—that is, the minimally invasive transnasal extended endoscopic approaches to a variety of difficult lesions involving the skull base, from the crista galli to C-2.

We now know that sellar and parasellar lesions represent nearly 20% of surgically treated primary brain tumors. Thanks to Dr. Hardy and his mentors and his followers, this approach has become a mainstay of contemporary neurosurgical practice and has benefited countless numbers of our patients. (DOI: 10.3171/JNS-07/08/0458)