Norman Dott, Gerard Guiot, and Jules Hardy: Key Players in the Resurrection of Transsphenoidal Surgery

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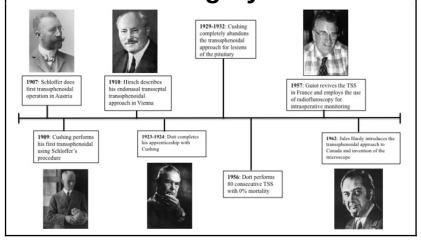
Introduction

Developed over a century ago, the introduction of the transsphenoidal approach to access lesions of the pituitary gland and sella turcica has transformed the field of neurosurgery, largely due to the work of Oskar Hirsch and Harvey Cushing. Furthermore, its use and modification in the early 1900s was perhaps one of Cushing's greatest legacies to skull base surgery. However, there was a period of time from 1929 to 1932 when use of the transsphenoidal approach almost became extinct. Cushing, who had worked relentlessly to improve the transsphenoidal route to the pituitary region, abandoned the approach in his pursuit to master transcranial approaches. At the time, few surgeons including Hirsch continued to do transnasal surgery with great success on a smaller scale.

The Resurrection and Preservation of Transsphenoidal Surgery

Following the pathway of this historical giant, Norman Dott, Gerard Guiot, and Jules Hardy became key players in the resurrection of transsphenoidal surgery, each working to further improve the procedure. The transsphenoidal approach was all but lost if not for the work of Harvey Cushing's dedicated disciple Norman Dott, who continued to use the approach and developed the lighted nasal speculum for its advancement. Dott's excellent results inspired Gerard Guiot to emulate his technique and improve it with the utilization of radiofluoroscopy for intraoperative image guidance. Guiot's fellow, Jules Hardy, avidly learned the approach and introduced the operative microscope, thus transforming the field with a new emphasis on microsurgery and selective adenomectomy.

History of Transsphenoidal Surgery



Timeline of the key players in the creation, resurrection, and evolution of transsphenoidal surgery.

Norman Dott of Edinburg, Scotland

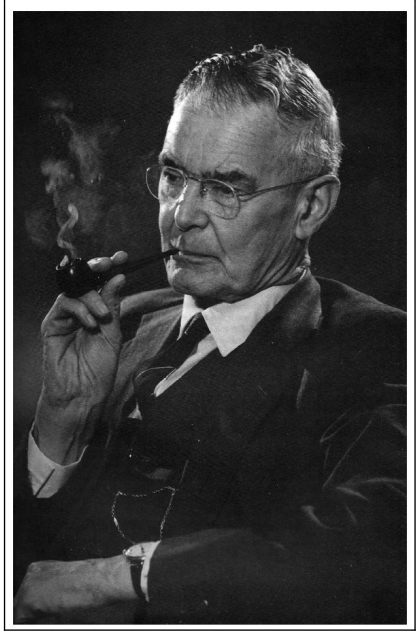


Figure 1. Dott, Cushing's apprentice from 1923-1924, brought his experiences with transsphenoidal surgery to Edinburgh, Scotland and along the way, developed the lighted nasal speculum to provide better illumination in the narrow working area.

Gerard Guiot of Paris, France

Figure 2. Guiot (pictured above), inspired by Dott, adopted his technique and further added radiofluoroscopic technique.

"It is perhaps surprising today to propose the transsphenoidal route to extirpate certain tumours of the hypophysis…In France, notably, the intracranial route is used exclusively: the transsphenoidal route is practically forgotten…its advantages should be reconsidered and its indications retained…" A year later, in a report of his experience with the transsphenoidal procedure, he further stated, *"Shouldn't one stop referring to this approach as 'historic' and 'passé'? Isn't it right to admit its advantages and retain its indications? Without doubt."* ***- Gerard Guiot, 1959***

Jules Hardy of Montreal, Canada

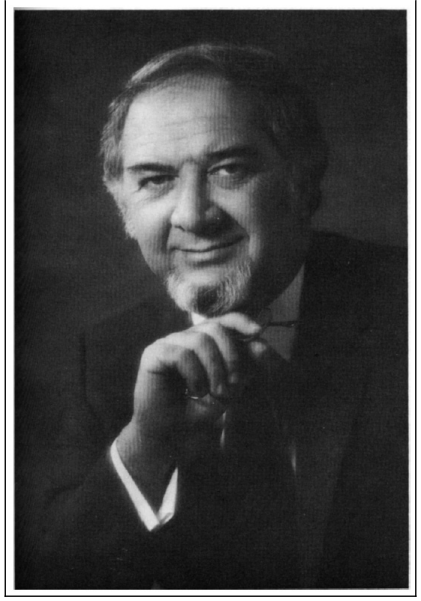


Figure 3. Hardy (pictured above), a fellow of Guiot's, from Montreal, Canada, gave microsurgery a whole new meaning with his introduction of the binocular microscope to transsphenoidal surgery.

As described by Guiot, the inability to differentiate between normal and abnormal pituitary tissue had been one of the largest setbacks at the time as the treatment of pituitary lesions required total hypophysectomy.
Hardy stated that this problem was:

"…so upsetting to me so that when I decided to use the surgical microscope, I soon became aware of a new fact. At higher magnification I was able to distinguish in some cases the residual normal pituitary gland quite separate from the tumoral tissue. As a result I decided to make all effort to preserve the pituitary to prevent new deficits." ***- Jules Hardy***

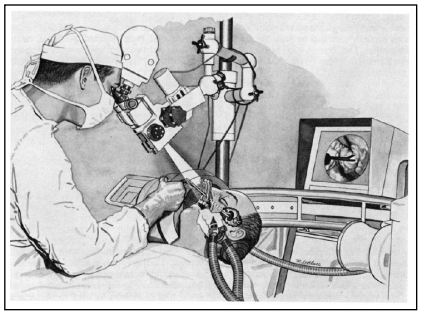


Figure 4. An illustration of the operative setup that Hardy used for transsphenoidal surgery.This arrangement allowed him to simultaneously use the binocular operative microscope as wellas televised intraoperative radiofluoroscopic guidance.

Conclusions

Through the work of these pioneering surgeons, the art of transsphenoidal surgery has been preserved and has continued to evolve with technological advances into the contemporary era. Today, it remains the preferred route to access sellar and parasellar lesions.

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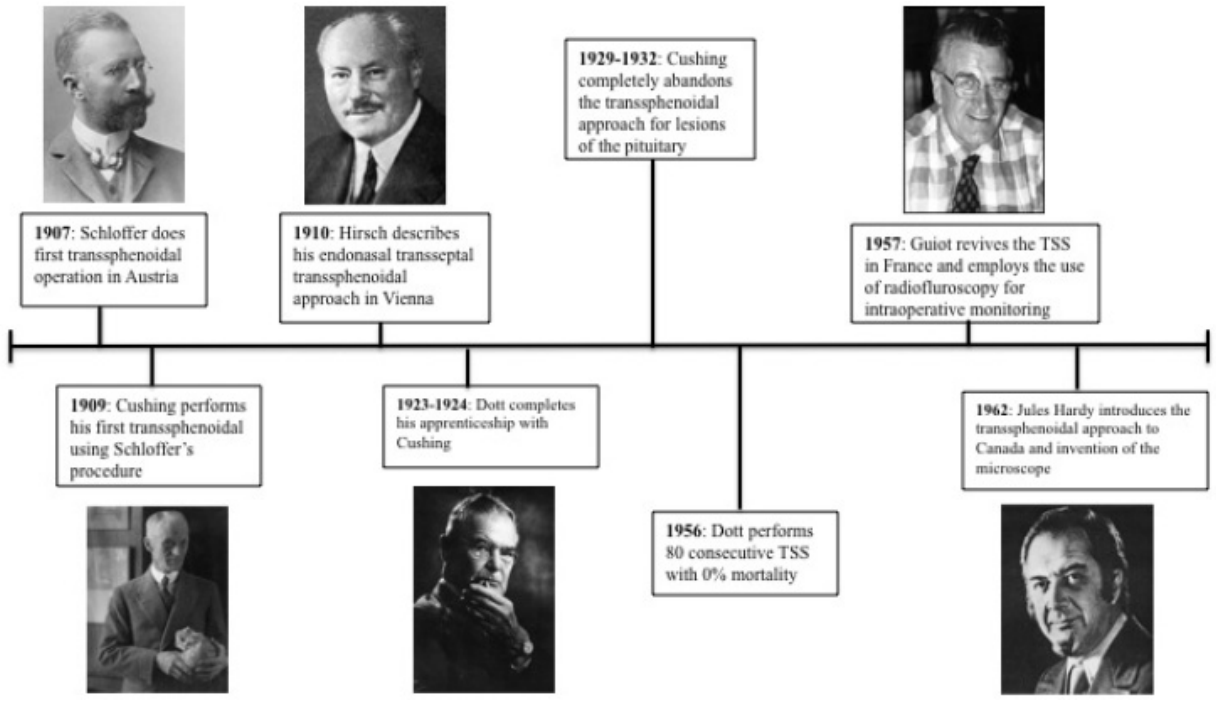

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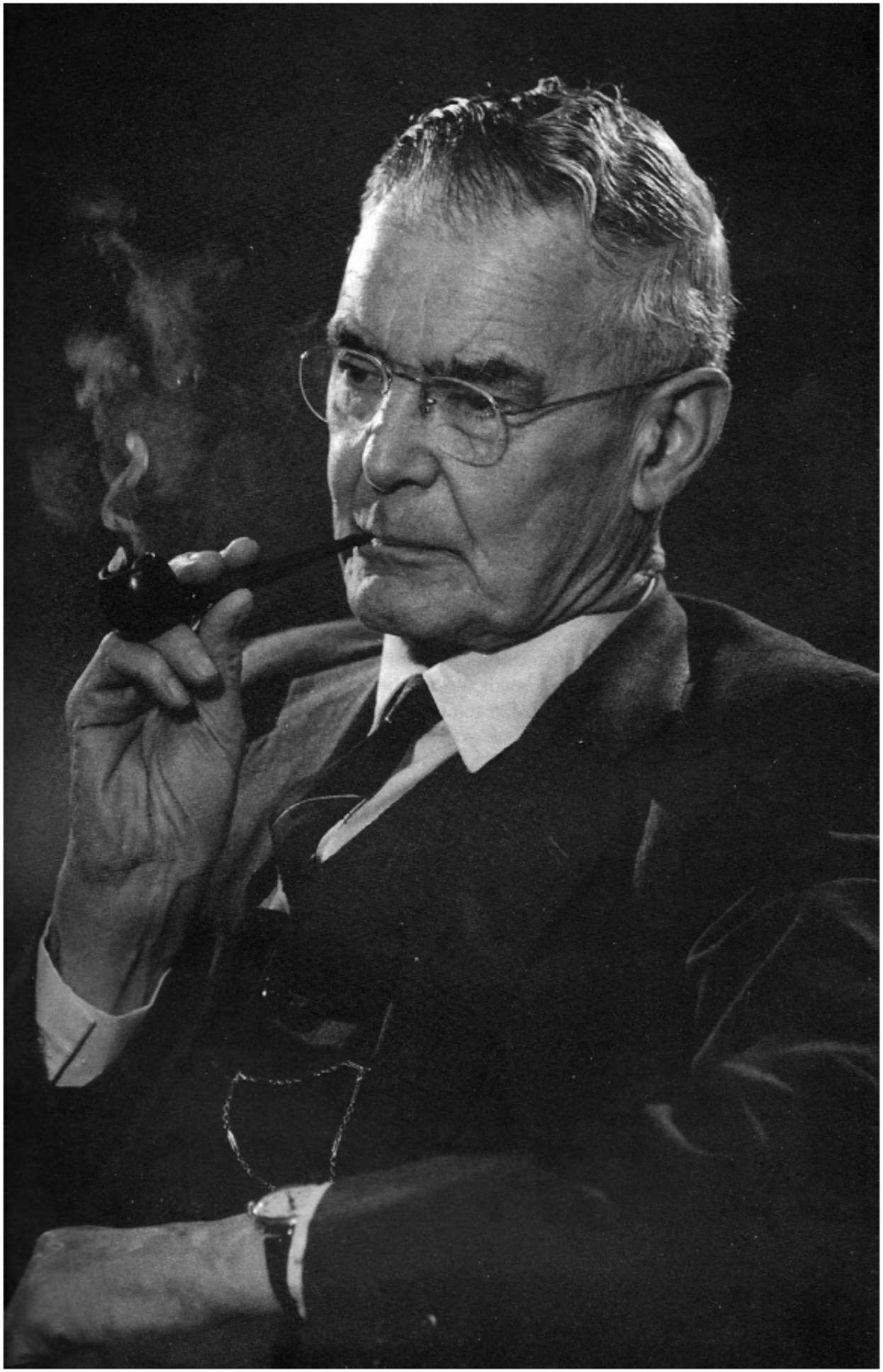

Gerard Guiot of Paris, France

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