Until now, no such operation has yet been carried out on a living patient, at least none has been reported, obviously, because firstly the decision to perform such a difficult intervention bears the mark of a foolhardy novice, and is difficult even for the expert; secondly, because the function of the hypophysis remains obscure and hence the consequences of extirpation of the pituitary cannot be foreseen.

Hermann Schloffer, 1906

These words were written by Hermann Schloffer 1 year before he performed the first successful transsphenoidal surgery on a living patient harboring a pituitary adenoma. Schloffer used a superior nasal route via a transfacial lateral rhinotomy incision. This was perhaps his greatest academic contribution to neurosurgery. Despite the technological limitations of that time, Schloffer’s operation was groundbreaking in that it laid the foundation for future development and refinement of transsphenoidal pituitary surgery, influencing prominent surgeons such as Oskar Hirsch and Harvey Cushing. Even after undergoing multiple modifications and a brief fall into obscurity, the transsphenoidal approach has endured through generations of surgeons and remains the preferred approach for lesions of the sella turcica to this day. Although Schloffer performed primarily abdominal surgery in his practice, his contributions to the transsphenoidal approach have had a lasting impact in the field of pituitary and skull base surgery. The authors review the life and career of Hermann Schloffer, the surgical details of his transsphenoidal operation, and the legacy that it has left on the field of pituitary surgery.

A little over a century ago, in 1907, at the University of Innsbruck, Hermann Schloffer performed the first transsphenoidal surgery on a living patient harboring a pituitary adenoma. Schloffer used a superior nasal route via a transfacial lateral rhinotomy incision. This was perhaps his greatest academic contribution to neurosurgery. Despite the technological limitations of that time, Schloffer’s operation was groundbreaking in that it laid the foundation for future development and refinement of transsphenoidal pituitary surgery, influencing prominent surgeons such as Oskar Hirsch and Harvey Cushing. Even after undergoing multiple modifications and a brief fall into obscurity, the transsphenoidal approach has endured through generations of surgeons and remains the preferred approach for lesions of the sella turcica to this day. Although Schloffer performed primarily abdominal surgery in his practice, his contributions to the transsphenoidal approach have had a lasting impact in the field of pituitary and skull base surgery. The authors review the life and career of Hermann Schloffer, the surgical details of his transsphenoidal operation, and the legacy that it has left on the field of pituitary surgery.

Hermann Schloffer and the origin of transsphenoidal pituitary surgery

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Key Words • transsphenoidal approach • pituitary surgery • pituitary tumor • Hermann Schloffer • neurosurgical history • Harvey Cushing

Early Life and Career

Hermann Schloffer (Fig. 1) was born on May 18, 1868, in the city of Graz in the Austro-Hungarian Empire. His father was a renowned lawyer, and being a part of Austrian high society, Schloffer was driven toward...
success from a young age. He was educated at the local gymnasium, or German secondary school, which he graduated from in 1886. Shortly thereafter, Schloffer began his medical training. He enrolled in medical school at the University of Graz, where he spent his first 3 semesters. Desiring a wider variety of educational experiences, Schloffer left Graz to continue his medical education in Freiburg (Freiburg im Breisgau), Germany, at the University of Freiburg. However, he returned to Graz during his final year to complete his education and eventually graduated with his medical doctorate on July 23, 1892.

In his 1st year as a practicing physician, Schloffer worked 2 jobs at both the Garrison-Hospital of Laibach, known today as Ljubljana Hospital in Slovenia, and as a volunteer in Professor Weichselbaum’s Institute of Histology and Bacteriology of the modern-day Rudolfinerhaus private hospital in Vienna. In late 1893, Schloffer returned to the University of Graz. He joined the department of surgery under Professor Anton Wölffler and began working as a volunteer in the surgical clinic. Wölffler himself was a former student of and assistant to the famous surgeon Theodor Billroth, a man considered by many to be the father of modern abdominal surgery and an important contributor to the Viennese cultural and scientific renaissance of the mid-19th century. In 1895, wishing to gain position in the burgeoning academic environment present at that time, Schloffer followed Wölffler, his mentor, to the University of Prague. It is here that Schloffer’s academic career took flight.

Starting only as a volunteer, Schloffer was quickly promoted after 1 year to the status of first assistant in the surgical clinic. Schloffer maintained his status as first assistant for the next 5 years, continuing his training. In 1899, Schloffer traveled extensively to various academic centers across Europe to complete his training. He made trips to France, Switzerland, and England, where he studied under many of the great European surgeons of the time. In Glasgow, Schloffer visited the department under Professor William MacEwen, a prominent orthopedic and neurological surgeon known for his development of bone grafting techniques and tumor resections based on localized neurological findings. At the Bern University Hospital in Switzerland, Schloffer spent time in the surgical department under Professor Theodor Kocher, a man widely known for numerous contributions to the practice of surgery that ultimately earned him the Nobel Prize in Medicine a decade later. Having finished his studies as a traveling apprentice, Schloffer returned to the University of Prague. On May 9, 1900, after defending his dissertation, titled Über traumatische Darmveränderungen (About Traumatic Causes of Bowel Changes), Schloffer was declared docent, a title given to young European academics who were fully versed in their field and could meet the requirements of a teaching position but were not given a professorship title. In the following years he continued to work at the University of Prague as a manager of the surgical clinic, where he assumed both a practicing and a teaching role.

In 1902, Schloffer was finally appointed as a full professor at the University of Prague; however, he did not remain there for long. In the academic environment of Austria at that time, it was customary for professors to tour through multiple universities in various settings. Often, their careers would start in a junior position at a smaller university followed by continued training at a large city university. After assuming a full professorship, they would likely be promoted to a senior or chair position at a smaller university before finishing their careers as a senior professor or departmental chair at another large university in a major city, usually either Prague, Budapest, or Vienna. Schloffer’s career followed this pattern. He started his training at the University of Graz, a smaller city, finished his training and obtained his professorship at the University of Prague, and in 1903, he left the University of Prague to assume the role of director of surgery at the University of Innsbruck in Austria, a comparatively smaller institution (Fig. 2). As one of 4 candidates considered for the position of director, Schloffer faced stiff competition from his colleagues who were also coming from large, prestigious city universities. Among his competitors were Walther Petersen from the University of Heidelberg, Eugen Enderlen from the University of Marburg, and Albert Narath from the University of Utrecht. Interestingly, Schloffer was not the first choice to fill this position, but rather the third choice (Fig. 3). Narath, another protégé of Billroth and contributor to the development of hernia surgery, was initially offered the position but turned it down, instead assuming the position of chair of surgery at the University of Heidelberg 3 years later. Although Innsbruck was a much smaller institution than the one in Prague, it offered Schloffer the chance to per-
form his own academic research and develop his own practice. Most notably, it was at Innsbruck that Schloffer performed the first transsphenoidal pituitary surgery on a living patient, paving the way for the future of pituitary surgery.

Schloffer’s Influences

Schloffer’s decision to approach the pituitary through the sphenoid sinus was the product of extensive study on the plausibility of removing pituitary tumors through both transcranial and transsphenoidal approaches. One year prior to the surgery, Schloffer published a review on this topic and discussed not only the difficulty of performing such an operation, but also the lack of certainty with regard to outcomes, as the physiology of the pituitary and the effects of removing it were not well understood. There had been previous attempts at accessing and removing pituitary neoplasms, but they were largely unsuccessful in providing long-term benefits with acceptable rates of postoperative mortality. Due to the lack of operative records kept by Sir Victor Horsley, a prominent surgeon who had conducted multiple studies on the possibilities of pituitary surgery, the first surgery for a pituitary lesion is typically credited to Caton and Paul of the Royal Liverpool Infirmary, who performed their procedure on February 2, 1893. Following the work and direct advice of Horsley, Caton and Paul performed a lateral subtemporal decompression in a patient with acromegaly and chronic headaches suspected to be due to a pituitary tumor. Despite the temporary relief provided by decompression, the tumor was never resected and the patient died 3 months after the surgery. Nevertheless, this operation laid the foundation for a series of pituitary operations later performed by Horsley, who used both subfrontal and lateral middle fossa approaches in 10 patients between the years of 1904 and 1906, with an overall mortality rate of about 20%. While this mortality rate is very high by today’s standards, it was a substantial improvement over the mortality rates of Horsley’s colleagues, which ranged from 50% to 80%. In 1905, another surgeon from Germany, Fedor Krause attempted an intracranial removal of a pituitary tumor using a frontal transcranial approach to the sella turcica. While not a direct influence on Schloffer’s procedure, Krause’s approach ultimately served as the foundation for the development of later transcranial approaches to the pituitary.

The intracranial approaches attempted prior to Schloffer’s efforts laid important groundwork for pituitary surgeries, but the extremely high mortality rates seen with these procedures stimulated other surgeons to explore safer alternative extracranial routes. Davide Giordano, a prominent Italian scientist and surgeon, did extensive work on cadavers, paving the way for Schloffer’s transsphenoidal surgery. In 1897, Giordano used his cadaveric studies to propose the first extracranial transsphenoidal approach to the pituitary gland. His procedure involved a transglabellar-nasal approach, requiring resec-
tion of both the anterior wall of the frontal sinus and the external nose (Fig. 4). First, nasal-glabellar degloving was accomplished with a bilateral paranasal and frontal incision. This was followed by removal of the ethmoid bone and severing of the exposed olfactory fibers at the cribiform plate. With the anterior wall of the sphenoidal fossa exposed, the sphenoid sinus could be widely opened, allowing removal of the anterior and inferior aspects of the sella turcica.1

Despite being restricted to cadavers, Giordano’s work introduced the idea of a transsphenoidal approach to Schloffer, who specifically endorsed Giordano’s method in his extensive review of proposed surgical approaches to the pituitary.1,38,40,43 In Schloffer’s 51-page review entitled Zur Frage der Operationen an der Hypophyse (On the Question of Surgery on the Pituitary), published in Beiträge zur klinischen Chirurgie in 1906,40 he eloquently summarized the current state of pituitary surgery and its known physiology. In this extensive review, he not only discussed existing procedures for accessing the pituitary, but brought to light many of the limitations and concerns for performing such operations on a living patient (Figs. 5 and 6). Schloffer was primarily concerned about the increased risk of meningitis with the adoption of an extracranial approach. By establishing a communication between the nasopharynx and the sella, a transsphenoidal approach could drastically increase the potential for central nervous system infection compared with the more sterile intracranial approaches. Furthermore, Schloffer addressed the general lack of understanding of pituitary physiology at that time.30,40 The symptoms associated with pituitary tumors, including headaches, vision changes, and polyuria, were well established, but the underlying hormonal changes as a result of altered pituitary function, namely hyper- or hyposecretory states associated with these tumors, were relatively unknown. Most of the understanding of pituitary physiology at that time was based on the work of Pierre Marie and Oskar Minkowski.34 Marie released a landmark paper in 1886 in which he discussed 2 patients with acromegaly who were found to have enlarged pituitary glands on autopsy.35 Minkowski later confirmed this observation 1 year later with a publication suggesting that pituitary tumors were frequently present in patients with acromegaly.36 Nevertheless, pituitary physiology remained in obscurity until the publications of Cushing12 and Aschner2 (1909 and 1912, respectively). Despite limited knowledge on the endocrinological functions of the pituitary and the unforeseen risks associated with the procedure, Schloffer suggested that the symptoms associated with mass effect from the tumor, namely headaches and visual field defects, could be relieved by surgical reduction in tumor size, warranting resection as a possible treatment. It is likely a direct result of Schloffer’s review that the patient he treated with transsphenoidal surgery was referred to his care 1 year later.30

Schloffer’s Transsphenoidal Surgery

On March 16, 1907, at the University of Innsbruck, Hermann Schloffer performed the first successful resection of a pituitary tumor through a superior nasal transsphenoidal approach (Fig. 7). The patient was a 30-year-old man with a 6-year history of decreasing vision and worsening headaches. On presentation, the patient exhibited minor visual field defects and signs of hypogonadism, including hypotrichosis and small testes. He also had excruciating headaches. The suspected presence of a pituitary mass was confirmed by radiographic imaging showing an enlarged sella. After 3 weeks of careful observation and planning, the patient was sent for surgery.38 The surgery consisted of a 3-stage procedure similar to the method used to treat sphenoid sinus disease.52 The first stage of the operation began with the application of cocaine to produce a local anesthetic effect followed by a long incision from the left nasolabial furrow up to the glabella (Fig. 8).10 The entire nose pedicle was then reflected to the right, much like a trap door, and the nasal turbinates and septum were subsequently removed (Fig. 9). Cocaine was further applied to the newly exposed areas to provide enhanced local anesthesia. Using measurements based on preoperative radiographs, the second stage of the surgery consisted of removing the vomer and the rostral aspect of the sphenoid bone, allowing the sphenoid sinus to be

![Fig. 4. Drawing by Giordano, representing his transglabellar-nasal approach to the pituitary gland in a cadaveric dissection. From Artico et al: Neurosurgery 42:909–912, 1998, public domain.](image-url)
opened (Fig. 10). In the final stage of the surgery, Schloffer removed the mucosa of the sphenoid sinus and used a chisel to carefully open the floor of the sella turcica, exposing the pituitary gland (Fig. 11). With the pituitary exposed, Schloffer was able to debulk the pituitary tumor. Following removal of a significant portion of the tumor, Schloffer closed the wound and kept the patient under his care for close observation.

In the early postoperative period, the patient displayed significant improvement. Primarily, the unrelenting headaches had completely resolved, indicating that the primary goal of the surgery had been accomplished. Furthermore, the patient showed improvements in his visual field defects, appetite, sleep pattern, and subjective muscle strength improved. However, the patient did experience some minor neurological symptoms, including transient dizziness with walking, mild diplopia on far right lateral gaze from medial rectus palsy, decreased sense of smell and decreased sensation along the left side of the nose in the distribution of the maxillary branch of the trigeminal nerve. Schloffer attributed many of these symptoms to minor complications from incisions made during the surgery. The patient also experienced significant CSF leakage following the surgery. He never got meningitis, however, and the leak spontaneously resolved after 14 days. At 1 month after the surgery, the patient had made a considerable recovery. He was allowed to take day trips throughout Innsbruck and even expressed the desire to return home to work as a tailor in his father’s business, but Schloffer decided to keep the patient at the hospital for continued evaluation and follow-up of laboratory results.

Unfortunately, 2 months after the surgery, on May 22, the patient began to experience significant headaches, nausea, and obstipation. The symptoms improved the following morning with the prescription of a laxative and bed rest, but they returned again 3 days later and again spontaneously subsided. On May 29, 1 week after his troubling symptoms began, the patient experienced a seizure followed by severe headaches, vomiting, bradycardia, and hypothermia. His condition acutely worsened over the following day, and at 5 AM on May 31, the patient died. An autopsy revealed extensive residual tumor compressing the foramen of Monro, with enlarged lateral ventricles (Fig. 12). A diagnosis of hydrocephalus was given as the cause of the patient’s death, ultimately the result of incomplete tumor resection.

The unfortunate outcome of this case raised multiple questions regarding the plausibility of this technique for future cases. Schloffer published a discussion of the procedure, autopsy, and results in a 1907 publication titled *Weiterer Bericht über den Fall von operiertem Hypophysectomietumor* (Additional Report on the Case of Removed Pituitary Gland Tumor). Although the patient ultimately

![Fig. 5. Original drawings of pathological specimens of pituitary tumors from Schloffer’s review article Zur Frage der Operationen an der Hypophyse. "Sagittaler Medianschnitt" (median sagittal cut); Ch = “Chiasma” (optic chiasm); Cl = “Clivus” (clivus); f = “zeigt die fast papierdünne Lehne des Türkensattels eine Fraktur” (the nearly paper-thin dorum sellae shows a fracture); Fp = “Felsenbeinpyramide” (petrous part of the temporal bone); H = “Hinterlappen der Hypophyse” (posterior pituitary); K = “Keilbeinhöhle” (sphenoid sinus); N = “Nasenrachenraum” (nasopharynx); pa = “Proc. Clinoid. Ant.” (anterior clinoid process); pp = “proc. clinoid. post.” (posterior clinoid process); St = “Stiel der Hypophyse” (pituitary stalk); T = “Tumor” (tumor). The Roman numerals II–VI denote cranial nerves. From Schloffer: Beitr Klin Chir 50:767–817, 1906, courtesy of The New York Academy of Medicine.](image-url)
died, Schloffer claimed the surgery as a success because it accomplished the primary objective of symptomatic relief. He attributed the poor outcome to technological limitations and his own hesitation to probe the sella aggressively or excise the pituitary excessively. Radiological imaging was still in its infancy, and one of its major shortcomings included its difficulty in accurately establishing the exact size and position of intracranial soft tissue masses, a problem that was not resolved until 12 years later with the development of pneumoencephalography in 1919. Schloffer himself stated, “In the future it will be more correct to not attach too much significance to the larger tumors resting on the saddle and x-rays of these larger tumors because much of the tumor may have grown out considerably from the sella and sellar entrance.” Furthermore, Schloffer’s hesitation to operate aggressively ultimately stemmed from his decision to limit what he felt was an unnecessary risk in a novel procedure (Fig. 13). While discussing the autopsy results, Schloffer critically addressed his own hesitations as lessons to improve the technique in future attempts:

The tumor had outgrown the sella and entered the base of the frontal lobe with a great cone-like appendix; the entry of the sella was much wider than I initially had expected after the examination with the probes. The reason why I overlooked the part of the tumor that was outside of the sella was partly because I did not want to risk entering the area of the assumed infundibulum with the probes, and because I intended to leave part of the pituitary gland there. In order to avoid unnecessary injuries, I did not try to examine the borders of the sella, and so I was unable to see the significant expansion. In a future case, it would be beneficial to be more risk-taking in this respect. Additionally, while the patient never contracted meningitis, Schloffer anticipated that this risk might limit the use of the procedure until further advancements in the prevention of meningitis were realized. He felt that since it still posed a significant risk, the surgery should be reserved for the “right selection of cases,” where the potential relief of severe symptoms by removing an easily accessible, large, and compressive tumor outweighed the potential for meningitis. Ultimately, despite the poor outcome for the patient, Schloffer remained convinced that his proposed procedure offered a relatively safe and effective method for the resection of pituitary tumors. He established this procedure as the foundation for future procedures in pituitary surgery.

**Fig. 6.** Additional drawings from *Zur Frage der Operationen an der Hypophyse*. Panel labels correspond to the respective drawings in Fig. 5. “Dasselbe, von der Schädelhöhle aus gesehen” (the same, seen from the cranial cavity). C = “Carotis int.” (internal carotid); H = “Hypophysentumor; die denselben bedeckende Dura mater ist z. T. abgerissen” (pituitary tumor; the covering dura mater is partially cut off); mS = “mittlere Schädelgrube” (middle cranial fossa); t = “linker Tractus opticus” (left optic tract, cut); vS = “vordere Schädelgrube” (anterior cranial fossa). Regarding x, Schloffer wrote: “bis zur punktierten Linie bei X reicht die Dura” (the dura extends to the dashed line marked x). From Schloffer: *Beitr Klin Chir* 50:767–817, 1906, courtesy of The New York Academy of Medicine.
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ture developments in transsphenoidal surgery by stating, “My opinion remains unchanged in relation to the direct possibility of excision of pituitary tumors by the nasal routes.”

Impact on the Neurosurgical Community

The success of Schloffer’s superior nasal transsphenoidal approach caught the attention of the medical community and spurred extensive interest. The procedure was initially repeated in a similar fashion only a few months later by Anton von Eiselsberg. Within 3 years, Schloffer’s procedure had been performed by numerous surgeons in 10 different patients with varying degrees of success. Included among these cases was the first pituitary surgery performed for acromegaly, conducted in Vienna in 1908 by Julius von Hochenegg, who modified the procedure by adding the resection of the frontal sinuses. His patient not only survived the surgery and immediate postoperative period but lived for many years afterward.

In 1909, using Schloffer’s superior nasal approach as a foundation, Harvey Cushing performed his first transsphenoidal resection of a pituitary tumor in a patient with acromegaly. Cushing adopted his own modifications of this procedure, including the use of ether-based anesthesia administered through a tracheostomy to avoid obstruction from the patient’s enlarged tongue, the use of a sea sponge in the posterior nares to prevent blood from entering the posterior nasopharynx, swabbing the nasal mucosa with 10% adrenaline to lower the potential for hemorrhage, and the use of an omega-shaped incision around the nose and over the frontal sinus as opposed to the incision used by Schloffer. The altered opening incision permitted the frontonasal flap to be reflected inferiorly, allowing for a better cosmetic effect postoperatively. Although Cushing only resected part of the tumor, the patient experienced significant improvement of his symptoms and lived for another 21 years after the operation. The successes of Hochenegg and Cushing confirmed that the transsphenoidal approach to the sella turcica suggested by Schloffer’s work was indeed a feasible procedure for the removal of pituitary lesions.

Despite the promise suggested by Schloffer’s transsphenoidal approach, however, the technique was not without limitations. As mentioned by Schloffer, the potentially devastating threat posed by meningitis in the pre-antibiotic era limited the adoption of this approach. This threat was realized in 1912, when von Eiselsberg reported 5 cases of meningitis in 16 operations performed using Schloffer’s technique. Of those 5 patients, 4 succumbed to the infection. Furthermore, Schloffer’s procedure and the variations performed by Hochenegg, Cushing, and others resulted in severe facial deformities. While patients may have experienced some symptomatic relief, the stigma associated with the severe aesthetic defects would greatly affect their quality of life postoperatively. Cushing himself commented on the disfiguring nature of the superior nasal approaches by stating, “All of the foregoing operations necessitate more or less decortication du visage, to use the descriptive French term; and not only are they needlessly mutilating, but they are apt to leave permanent nasal deformations.”

Fig. 7. Schematic of Schloffer’s approach to the pituitary. d = direction of approach (unlabeled); f = “sinus frontalis” (frontal sinus); K = “verengte Keilbeinhöhle” (narrowed sphenoidal sinus); o = “Orbitadach” (roof of the orbit); sm = “Sulcus für die Arteria meningea media” (sulcus for the middle meningeal artery); sph = “Fossa sphenomaxillaris” (sphenomaxillary fossa). From Schloffer: Wien Klin Wochenschr 20:621–624, 1907, courtesy of The New York Academy of Medicine.

commented on the shortcomings of Schloffer’s procedure by describing them as not only unnecessarily disfiguring, but also requiring excessive resection of paranasal sinuses. As a result of these limitations, superior nasal approaches were further modified or abandoned in favor of less invasive procedures.

In the following years, Schloffer’s approach ultimately led to the development of a number of significant advancements in pituitary surgery. Numerous surgeons adopted and modified the transsphenoidal approach that he proposed to improve the technique, incorporate new technologies, limit complications, and improve patient outcomes. The details of the history and evolution of transsphenoidal surgery are well documented elsewhere, but most notably it was Harvey Cushing who brought pituitary surgery into mainstream practice by obtaining low mortality rates and popularizing his modified transsphenoidal approach using an inferior oronasal rhinoseptal route via a sublabial incision. The procedure, although nearly lost due to Cushing’s abandonment of the transsphenoidal approach, was maintained and preserved through one of his disciples, Norman Dott, who passed it down to Gerard Guiot, and was ultimately brought into the microsurgical era by Jules Hardy with the integration of the intraoperative microscope. Today, mortality rates for transsphenoidal pituitary surgeries in the hands of an experienced surgeon range between 0% and 1%, proving it to be a safe and effective treatment for pituitary tumors.

Late Career and Legacy

The introduction of the transsphenoidal approach into neurosurgical practice was a monumental step for the treatment of pituitary lesions. What began as a concept studied on cadavers was brought into the limelight with the successful surgery conducted by Hermann Schloffer. His bold attempt at accessing the pituitary through an extracranial approach represented the academic attitudes of the time, where experimental procedures, often revolutionary in their conceptualization, were being conducted with the hope of improving patient mortality rates that were considered well above an acceptable range. In 1911,
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4 years after his inaugural transsphenoidal surgery and following the traditional route of academic surgeons at the time, Hermann Schloffer returned to the prestigious University of Prague as a professor of surgery. Throughout the rest of his career, Schloffer continued to make significant impacts in the field of surgery. As Schloffer was specialized in both neurological and abdominal surgery, he also pioneered numerous abdominal procedures. His most notable contribution in this regard included a 3-phase resection of the large intestine for complicated diverticulitis and rectal carcinomas. He also coined the terms “Schloffer tumor” and “Schloffer broth,” the first referring to a rare pseudotumor resulting from chronic granulomatous inflammation secondary to scarring from abdominal surgeries and the latter referring to a urine agar used for the cultivation of Corynebacterium diptheriae.

In addition to his academic contributions to the field of surgery, Schloffer was also an active member in Austrian high society, receiving extensive recognition in that regard. In 1913, Schloffer became a full member of the Society for the Support of German Arts, Research, and Literature. He also served as an honorable member of the Society of Physicians in Vienna and as a member of the Correspondents of Medical Societies in Innsbruck and Budapest. However, the greatest honor Schloffer received was the third-class medal of the Order of Emperor Franz Josef I. Despite tumultuous geopolitical upheavals, societal changes, and global war, Hermann Schloffer spent the rest of his career in Prague as a professor of surgery. He died on January 21, 1937, at the age of 68. In recognition of Schloffer’s contributions, his legacy is still honored by the Charles University of Prague to this day. Visitation to his tomb (number 55 at the Olšanské cemetery) remains part of the walking tour and is offered by the Cabinet of the History of Medicine at Charles University in Prague to students, faculty, and the public on a regular basis.

Being the first surgeon to successfully perform transsphenoidal surgery on a living patient was the greatest of Hermann Schloffer’s academic contributions to neurosurgery. Despite the limitations of his procedure, it was groundbreaking in that it provided a foundation for other surgeons experimenting with alternative extracranial approaches to the pituitary. Even after undergoing multiple transformations and a brief fall into obscurity, the transsphenoidal approach introduced by Schloffer has proven itself through generations of surgeons and now remains the standard approach for lesions of the sella turcica. Although there is no way Schloffer could have foreseen the full impact his transsphenoidal procedure would have over time, he clearly recognized its tremendous potential as an alternative route to accessing the skull base. While the approach itself has radically changed to incorporate new technologies and improvements in clinical and aesthetic outcomes, the fundamental concept has remained the same, and echoes of Schloffer’s bold attempt at reaching the pituitary through the sphenoid sinus still resonate in operating rooms to this day.

Disclosure

The authors report no conflict of interest concerning the materials or methods used in this study or the findings specified in this paper.

Author contributions to the study and manuscript preparation include the following. Conception and design: Liu. Acquisition of data: Schmidt, Takkellapati. Analysis and interpretation of data: Liu, Schmidt, Choudhry, Takkellapati. Drafting the article: Schmidt, Choudhry. Critically revising the article: Liu, Schmidt, Choudhry, Eloy, Couldwell. Reviewed submitted version of manuscript: Liu, Schmidt, Choudhry, Eloy, Couldwell. Approved the final version of the manuscript on behalf of all authors: Liu. Study supervision: Liu.

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