

# The pioneer of precision: Wolfgang Steiner and the evolution of transoral laser surgery

BY VINIDH PALERI

It is rare that a single clinician entirely changes the course of the management of a particular condition. Steiner was one such clinician.

**W**olfgang Steiner was to transoral laser microsurgery what Grandmaster Flash was to hip-hop or James Brown was to funk – he introduced to the world an entire genre of surgical practice.

Like many surgical trainees of the time, I first heard about the legend that Wolfgang Steiner was when he is said to have interrupted one of the symposia during the 2nd World Congress on Laryngeal Cancer in 1994, proclaiming that treating early larynx cancer with radiation therapy is a crime.

The term ‘paradigm shift’ is used too loosely these days, but it truly captures what Wolfgang Steiner’s work on transoral laser microsurgery (TLM) delivered to the specialty of head neck oncology. His work moved us from the Halstedian era of en bloc surgical extirpation to precision mosaic (piecemeal) surgical resection, the latter being an anathema to cancer surgeons of the day. I distinctly remember the moment that I cut through the epiglottic tumour for my first TLM supraglottic laryngectomy, when two thoughts interleaved in me: admiring the courage it must have taken to break dogma enshrined over decades, while relishing the beautiful exposure that this midline epiglottic cut offered in that confined space.

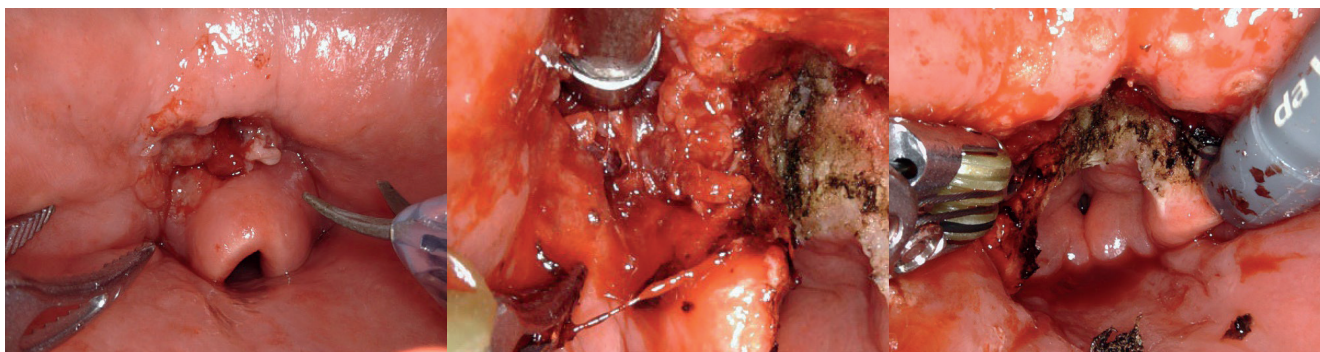
From his earliest papers (the 1987 article [1], that another Wolfgang, my colleague and friend, kindly translated), Steiner very clearly and succinctly, in true Germanic fashion, set out the data that espoused the efficacy of TLM. His first English-language paper in the *American Journal of Otolaryngology* [2], describing excellent outcomes of 240 larynx cancer patients out of a 1200 patient cohort, was dropped on an unsuspecting head and neck community, propelling the procedure (and Steiner) to fame.

Most of us TLM surgeons know that performing a cordectomy for a glottic cancer is one thing, but resecting a tongue

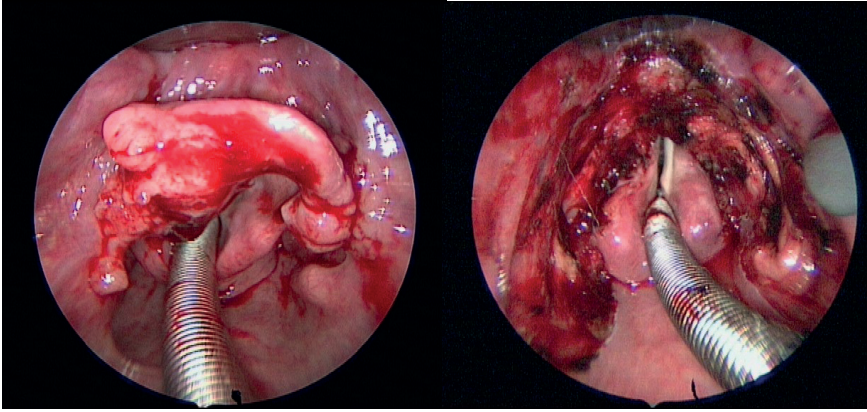
base tumour through the mouth is another beast entirely. Steiner did not stop with limiting TLM to the larynx. He gradually expanded the envelope and applied this philosophy successfully to other sites including the tongue base and hypopharynx; Steiner’s work on the tongue base was one of the first papers on the topic [3]. I must have reread this paper over a dozen times while embarking on my own TLM programme, not to count the numerous times I have referenced it in my talks and panel discussions. Collaborating with Petra Ambrosch, his long-term colleague and friend, Steiner’s textbook on TLM that brings together all this expertise in one tome, continues to be the leading technical manual for both trainees and established practitioners [4].

The strong data supporting TLM, which has since been replicated across many centres, has helped advance the vistas of transoral surgery. This advancement includes technology that offers superior visualisation (robot, exoscope, endoscope), utilises other cutting tools (ultrasound, monopolar cautery), a complete overhaul of the anatomy taught to head and neck trainees (requiring a nearly perfect understanding of inside-out anatomy), and new indications for surgery (such as

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Resection of a new squamous cancer in the vallecula, arising in a previously radiated field, via a transoral robotic approach. Note how the epiglottis has been divided through the middle to offer better view and access. Wolfgang Steiner’s work laid the foundation for this type of treatment for recurrent cancer.



Before and after resection of a supraglottic cancer by transoral laser microsurgey. This type of resection was not done before Wolfgang Steiner's breakthrough publications.

unknown primary tumours, transoral reconstructions and recurrent cancer) that were previously considered unsuitable for minimally invasive procedures.

Known for his acerbic wit, I never was fortunate to enjoy Wolfgang's company at length apart from the odd conference he attended. However, I did get to know him through Petra, who I had the pleasure of entertaining at meetings I organised.

The head and neck clinical community owes Wolfgang Steiner a debt of gratitude: for showing us a kinder way to treat cancer and challenging us to think different.

**References**

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