

# Surgical Microscope History

German physician Saemisch introduced compound lens magnification to medicine in 1876. In the early part of the 20th century, Carl Nylen, a 30-year-old Swedish otolaryngologist, inspired by Maier and Lion's observations of endolymph movement, conceived and built the world's first operative microscope. In 1921 he used his monocular microscope for humans for the first time in a case of chronic otitis media. Gunnar Holmgren, Nylen's chief at the Stockholm clinic, improved on Nylen's monocular design and attached a light, creating the first binocular surgical microscope in 1922. The original surgical microscopes were crude, usually requiring fixation to the bony structures of the skull<sup>1)</sup>.

During the ensuing decades, otolaryngologists and ophthalmologists continued to refine and expand the use of the operating microscope.

Theodore Kurze was the first to use the operating microscope in the discipline of neurosurgery. In 1957 he used the device to remove a vestibular schwannoma in a 5-year-old patient in Los Angeles. The procedure was a success, but Kurze grappled with the draping technique. He tried several materials and techniques including turkey bags with elastics to fit the microscope handles—an attempt that produced immense heat and smoke in one case.

He continued his refinements and worked to establish the world's first cranial base microsurgical laboratory. His work with the microscope introduced many neurosurgeons to the vast possibilities of such a tool. As Kurze proceeded with his work, an industrious and insightful neurosurgeon began his own observations and practical utilization of the operating microscope on the opposite coast:

Raymond Madiford Peardon Donaghy

<sup>1)</sup>

Kriss TC, Kriss VM: History of the operating microscope: from magnifying glass to microneurosurgery legacy. Neurosurgery 42:899-908, 1998

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