

## Trends and current information

At the end of the year 1873 the first total laryngectomy in humans was performed by the German surgeon Theodor Billroth. The surgery was enabled by former experimental studies of larynx ablation in dogs, the cuffed cannula hindering aspiration of blood during laryngeal surgery, and the artificial larynx to restore vocalization post-laryngectomy.

The first patient was a 36-year-old with a tumor lodged in the left side of the larynx above the glottis. Billroth attempted both local cauterization, tracheotomy and then thyrotomy, however as the patient deteriorated a few days later Billroth decided to perform a total laryngectomy.

The patient was offered an artificial larynx, designed by the Austrian surgeon Carl Gussenbauer early 1874, to restore vocal function. The artificial larynx produced clear and loud speech, audible throughout a large room when reading aloud. Despite their ingenuity, these artificial larynxes with pharyngeal phonation were often abandoned by patients in favor of simpler options. With advancements in laryngectomy techniques, this type of artificial larynx became obsolete.

The first meta-analysis of total laryngectomy between 1873 and 1887 by British laryngologist Morell Mackenzie, indicated a mere 5.8%

## References

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## Special Issue: Billroth 150th Anniversary

success rate and 36.2% died in the immediate postoperative phase.

The German surgeon Themistocles Gluckin played a significant role in the development of total laryngectomy. A few years after the first total laryngectomy he introduced primary closure of the pharyngeal mucosa, the circular tracheostoma to prevent fatal pneumonia, systematic neck dissection, a diligent surgical technique, and an adapted postoperative protocol.

The introduction of these techniques resulted in a remarkable decrease in postoperative death rate from 56% to 2%, transforming a once risky procedure into a safer and more efficient operation. In the 20th century total laryngectomy has shown an astonishing transformation with a 1-year survival rate at 26.2% 150 years ago to 88.6% survival rate in the present.



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# **BILLROTH MEMORIAL LARYNGECTOMY CONFERENCE**

*150th Anniversary of Total Laryngectomy*

**Amsterdam, November 23-24, 2023**

Read more about Theodor Billroth and the NKI conference, and find a link to the registration page on the Atos website:

