

Sistrunk's 1920 description of thyroglossal cyst excision

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Abstract

In 1920 Walter Ellis Sistrunk described the classic operation of thyroglossal cyst excision including the central portion of the hyoid bone and a core of tissue around the thyroglossal tract to open into the oral cavity at the foramen caecum. We present this paper and discuss its relevance to current practice.

Keywords

Sistrunk; Sistrunk's operation; thyroglossal cyst; thyroglossal duct cyst.

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Introduction

Walter Ellis Sistrunk (1880–1933) was born in Alabama and graduated in medicine from New Orleans in 1906^[1]. As head of surgery at the Mayo Clinic, Rochester, Minnesota, he published a review of the Mayo Clinic's experiences in dealing with thyroglossal cysts^[2]. This paper includes his seminal description of a surgical technique to remove the thyroglossal cyst with a core of normal tissue including the central portion of the hyoid bone, thereby reducing the recurrence rate. Although excision of the central portion of the hyoid bone had previously been described by Schlange in 1893^[3], it was Sistrunk's addition of further excision of a core of normal tissue above the hyoid bone that was crucial in further reducing the recurrence rate. Sistrunk's operation remains the operation of choice to this day and compared with simple excision of thyroglossal cysts reduces the recurrence rate from 50% to 4%^[4].

Sistrunk's operation

The thyroglossal tract commences at the foramen caecum and descends through the tongue musculature, attaching to the hyoid bone and finishing at the thyroid isthmus. Thyroglossal cysts can occur anywhere in this tract. There is a significant risk of recurrence if a thyroglossal cyst is excised leaving a remnant of this tract.

Sistrunk recognised that above the hyoid bone the tract was small and friable, easily broken and difficult to remove. After failing to cure patients when attempting to dissect out the tract in its entirety, he learned that better results were obtained by removing a core of tissue one-eighth of an inch around the duct between the hyoid bone and the foramen caecum. In his paper^[2] he describes simple dissection of the cyst and its tract from beneath the sternohyoid muscles up to the hyoid bone. A quarter inch central portion of the hyoid bone is resected in continuity along with a core of soft tissue of the same diameter up to and including the foramen caecum. The oral cavity opening is repaired and the muscles and hyoid bone are approximated. In a subsequent description of his operation in 1928^[5], he no longer includes the dissection into the oral cavity.

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Sistrunk does not give any figures on the success rate of his operation only stating that 'better results are obtained . . .'. We do know now that his operation results in a 96% success rate^[4].

Conclusion

In recent years, some authors have advocated an extended Sistrunk's operation to deal with a failed Sistrunk's operation and in particular the treatment of infrahyoid thyroglossal duct remnants^[6]. But, for simple excision of thyroglossal cysts, the operation as originally described by Sistrunk in 1920 (with or without excision of the foramen caecum) remains the operation of choice and reduces the recurrence rate from 50% to 4%^[4].

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