

Modified Sistrunk Operation of Thyroglossal Cyst–Fistula

Dear Editor,

The thyroid gland develops around the 3rd week of gestation. It originates at the base of the tongue (foramen caecum) and then it descends caudally to its normal position in the neck anterior to the trachea. During its migration, the thyroid tissue (pyramidal lobe) remains connected to the base of the tongue via an epithelial-lined tube known as thyroglossal duct. During the 5th–8th week of gestation, the thyroglossal duct loses its luminous and completely obliterates. Failure of normal obliteration of this migrating tract of the thyroid gland leads to cyst formation, these cysts appear in any position along the thyroglossal duct, and it represents the most common congenital midline cervical cystic mass in children and young adults.^[1] The incidence of this developmental abnormality may be as many as 7% of the population.^[2,3] Patients with thyroglossal duct cysts usually present with a midline cystic mass that moves with swallowing and tongue protrusion. Cysts may become infected by oral bacteria, usually *Staphylococcus aureus*, leading to sinus formation secondary to spontaneous rupture or surgical drainage of the cyst abscess.^[4]

A prospective study was conducted on 38 patients of thyroglossal duct and fistula who were admitted and managed in Missan Teaching Hospital, Iraq, over a period of 3 years between October 2013 and October 2016. After detailed history and examination, the following data were obtained and analyzed for each patient: age, sex, presenting symptoms and its duration, and complications and recurrence of the fistula. Relevant investigations were done, including the ultrasonic study. Preoperative infection of the cyst has been treated and controlled before surgery. Elliptical incision of the skin extended to platysma and deep cervical fascia. We trace the fistulous tract upward. The centrum of the hyoid bone is cleared of muscle attachment and wedge resection of the bone by a bone cutter and or bone nibblers; keeping the posterior rim intact, the intraglossal part of the duct was removed with surrounding cuff of muscle. After securing homeostasis, the surgical field was drained and the wound was closed in layers. Patients were followed up at 1 week, 3 months, 6 months, and 1 year. Complications were assessed for postoperative recurrence.

Regarding age and gender, the results showed that of a total of 38 cases, a high proportion of patients was in the age group of <10 years (55%) with female: male ratio of 2:1. The mean age was 10 years. Two-third (65.8%) of the patients were female and one-third (34.2%) were male patient. The most common presenting symptom in our study was discharging sinus (55%). Cervical lumps were in 23.7% of the patients and abscess in 21.3%. Regarding sites of thyroglossal cyst–sinus, the results found that of 38 symptoms, the most frequent

position was infrahyoid (97.4%), whereas only 1 (2.6%) was suprahyoid.

Overall outcome – there is no recurrence of thyroglossal cyst–sinus after our surgical procedure and without major complication.

Thyroglossal cysts–sinuses are the most frequently encountered cervical developmental anomaly in children aged <10 years.^[1] The common cause of postoperative recurrence of thyroglossal cyst–fistulas is ineffective excision of intraglossal part of the duct.^[5] In our study, we preserve a thin rim of posterior border of hyoid centrum intact, which represents a skeleton to facilitate the healing process and bone gap filling, so we preserve the hyoid bone function which plays an important role at the interface between three dynamic compartments: the floor of the oral cavity, larynx, and pharynx. This specific location of hyoid bone allows human to make different sounds generated in the larynx and facilitate the process of swallowing.^[6] Fifty-five percent of our patients were in the age group of <10 years with female: male ratio of 2:1 and this is comparable to worldwide literatures.^[4] There is no recurrence in our study and this is comparable to Sistrunk operation reported by Hirshoren *et al.* and Turkyilmaz *et al.*^[7,8] Satter *et al.* reported a case of recurrent after thyroglossal duct cyst excision with hyoid bone resection; such patient was successfully managed by core excision of the foramen caecum, thus encouraging our belief that incomplete excision of remnant thyroglossal duct near foramen caecum should be taken into consideration in most of the recurrent cases.

On conclusion, modified Sistrunk operation with wedge resection of the hyoid bone centrum is a safe, simple procedure, with relatively low complications and the incidence of recurrence. It seems to be a good surgical technique for the management of thyroglossal cyst–fistula.

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Conflicts of interest

There are no conflicts of interest.

Ali Abdul-Aziz Al-Shawi

Department of Surgery, College of Medicine, Misan University, Misan, Iraq

Address for correspondence: Dr. Ali Abdul-Aziz Al-Shawi,
Department of Surgery, College of Medicine, Misan University, Misan, Iraq.
E-mail: ali.alshawi@uomisan.edu.iq

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Letter to Editor

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