ORIGINAL ARTICLE

Thyroglossal Duct Cyst Excision under Magnification - How I Do It?

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ABSTRACT

Aim: To evaluate the value of microscopic magnification during thyroglossal duct cyst excision.
Methods: All the patients were studied in whom excision of thyroglossal duct cyst by Sistrunk procedure was done under microscopic magnification. Patients reviewed in follow up for recurrence of the condition.
Results: A follow up for a period six months revealed satisfactory results regarding recurrence of the disease.
Conclusions: Intra-operative identification of the thyroglossal tract with the help of microscopic magnification enhances better and safe results.
Keywords: Sistrunk procedure, thyroglossal duct cyst, Microscope.

INTRODUCTION

The thyroglossal duct is an embryologic tract that constitutes the path for the final destination of the thyroid gland from the foramen caecum to the anterior of the neck. [1],[2].This tract obliterates later in life normally but if it remains patent it leads to the formation of the thyroglossal duct cyst at any level from the foramen caecum to the thyroid gland[3]..

It is the most common variety of the developmental condition encountered in the neck. In children almost 70% of the midline neck masses are thyroglossal duct cyst with incidence of 7% in different populations[1,4,5]. Tthyroglossal duct cyst (TDC) appears as cystic, fluctuant, mobile painless, swelling in the neck, either below (infrahyoid) or above (suprahyoid) the hyoid bone mostly in the midline but may be present to one side mostly on left[6,7]. Papillary carcinoma have been reported 1% of patient with thyroglossal duct cyst[1,8,9].

In 1920 Sistrunk first describe the definitive procedure for the excision of thyroglossal duct cyst including the central portion of hyoid bone along with duct up to the foramen caecum to prevent recurrence by removing all of the remnant tissue[1,10,11,12]. When it is done properly, the recurrence rates with Sistrunk procedure are less than 3%[12,13].

The aim of our study is to evaluate the significance of using magnification with operating microscope for the complete removal of thyroglossal tract and to further decrease the chances of recurrence.

PATIENTS AND METHODS

This is a hospital based study carried out at, DHQ Hospital Sahiwal, DHQ Hospital Gujranwala, Services Hospital Lahore and Mayo Hospital Lahore,. All the patients presented with thyroglossal duct cysts and sinuses were included in this study. Aftertaking full history and proper clinical examination, ultrasound study of the neck was done to confirm the diagnosis and the presence of normal thyroid gland.Appropriate antibiotics were used to control the infection. Necessary preoperative work up, required for general anaesthesia was done. Surgery was performed after informed consent.

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Sistrunk procedure was performed for excision of thyroglossal duct cyst. Procedure was done under microscopic magnification for precise excision of the tract. After haemostasis the incision was closed with prolene. Post-operative antibiotics were used and on fifth day the stitches were removed.

RESULTS

Twenty patients were operated, of which 16 were males. Fourteen of them were less than10 year of age. Twelve patients were admitted with palpable cyst, seven with sinuses and one with fistula. All the lesions were in the midline and below the hyoid bone i.e. infrahyoid. Seventeen patients had primary excision ofthe lesion while three had previous surgery with recurrence. All the patients were followed up for six .months regarding recurrence. No recurrence was found in any of the above patients during follow up.

Table-1: Sex distribution.

Gender	Frequency	Percentage
Male	16	80%
Female	04	20%

Table-2: Age distribution.

Age	Frequency	Percentage
Less than 10 years	14	70%
More than 10 years	06	30%

Table 3

Age	Frequency	Percentage
Infrahyoid	20	100%
Suprahyoid	00	0%

DISCUSSION

Thyroglossal duct cyst is a common congenitalanomaly. It is more prevalent in male paediatric population[11]. In our study the majority of the cases with thyroglossal duct cyst are below age ten with male preponderance i.e. 16 were male and 4 were females.

Location for most of the thyroglossal duct cyst is in the thyrohyoid region in the mid line. Other less common sites are sub mental, suprasternal and intralingual[10,14,15,16,17]. In our study all the cases with thyroglossal duct cyst had lesions in infrahyoid region in the mid line adjacent to hyoid bone.

The incidence of ectopic thyroid tissue in literature is 1%[18].Ultrasonography was used to identify the ectopic

thyroid from thyroglossal duct cyst to prevent postoperative hypothyroidism. None of our patients had ectopic thyroid tissue.

Gold standard for the excision of thyroglossal duct cyst has been Sistrunk procedure[13][19]. ..The rate of recurrence was 3% in Sistrunk first series [20]. Several factors including infection, inappropriate surgical technique, subsequent surgeries and incomplete removal of tract have been associated with higher rates of recurrence [21][22][23].. .Identification of the tract and complete removal is the key factor to reduce the incidence of recurrence. The use of magnification significantly improve the identification of the thyroglossal duct cyst tract and its extensions and decreases the chances of recurrence [24]. Performing surgery under magnification we observe extremely satisfactory results without a single recurrence in any of the 20 patients included in the study.

CONCLUSIONS

It is concluded that Sistrunk procedure is the gold standard and excision of the thyroglossal duct cyst using magnification under operating microscopic is very helpful to minimize the chances of recurrence as magnification helps in better identification of the tract along with its ramifications, andcomplete excision by meticulous dissection along anatomical planes.

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