Case report macroglossia: Review and application of tongue reduction technique

Bilommi R. Irhamni*

Pediatric Surgery Division, Gatot Subroto Army Hospital, Jakarta, Indonesia

**ARTICLE INFO**

Article history:
Received 19 January 2015
Received in revised form 1 March 2015
Accepted 8 March 2015

Key words:
Macroglossia
Tongue reduction
Glossectomy

**ABSTRACT**

Congenital macroglossia is uncommon condition. Enlargement can be true as seen in vascular malformations or muscular enlargement. It may cause significant symptoms in children such as sleep apnea, respiratory distress, drooling, difficulty in swallowing and dysarthria. Long-standing macroglossia leads to anterior open bite deformity, mucosal changes, exposure to potential trauma, increased incidence of upper respiratory tract infections and failure to thrive. Tongue movements, sounds and speech articulation may also be affected. It is important to achieve uniform global reduction of the enlarged tongue for functional as well as esthetic reasons. The multiple techniques advocated for tongue reduction reveal that an ideal procedure has yet to emerge. In our case report we describe a modified reduction technique of the tongue globally preserving the taste, sensation and mobility of the tongue suitable for cases of enlargement of the tongue as in muscular hypertrophy. It can be used for repeat reductions without jeopardizing the mobility and sensibility of the tongue.

© 2015 The Author. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Congenital macroglossia is uncommon. Macroglossia, or increased tongue size relative to the oral cavity. Enlargement can be true as seen in vascular malformations or muscular enlargement. Macroglossia may occur due to muscular enlargement due to hyperplasia of muscle fibers. Histological examination of the excision specimens showed no hypertrophy of muscle fibers, nor fatty infiltration or significant fibrosis. Nerve and muscle tissue is typically normal. In children, it may cause significant symptoms such as sleep apnea, respiratory distress, drooling, difficulty in swallowing and dysarthria. Long-standing macroglossia leads to an anterior open bite deformity, mucosal changes, exposure to potential trauma, increased incidence of upper respiratory tract infections and failure to thrive. Tongue movements and sounds are often affected by the macroglossia. Speech articulation may also be affected [1–4].

The indications for tongue reduction are clear. There has been no general agreement as to optimal timing of tongue reduction in infants. Kopriva and Classen recommended that the optimal time for tongue reduction procedures is after 6 months of age, coinciding with a reduction in the rate of tongue growth [3,4].

- There are 2 primary goals of this surgery:

  1. To restore the size and shape of the tongue for function.
  2. To preserve the existing functions of the tongue including articulation, deglutition, and taste.

It has been suggested that the reduction procedure should result in a tongue that remains behind the lower dental arch at rest, yet can wet the lips on protrusion.

1. Case report

16 month old boy brought to Gatot Subroto Army Hospital with chief complain enlargement of his tongue. His weight was 8 kg. He had a large globular tongue $5 \times 6 \times 2$ cm and with no associated features of palpable hepatomegaly, nor other organs enlargement. At 1 year of age, he began to have feeding problems, he was not able to close his mouth properly and was constantly drooling. He had noisy breathing at rest and respiratory distress in the supine position. Hypothyroidism, Acromegaly and Beckwith-Wiedemann syndrome was excluded.

We plan to do Tongue Reduction or partial glossectomy with modified Stellate/wedge surgical technique (Figs. 1–4).

---

*Corresponding author.
E-mail addresses: runbilommi@live.com, ruankhabi@gmail.com.
2. Discussion

The aim in this case was to reduce the tongue globally while preserving the taste, sensation and mobility of the tongue. The multiple techniques advocated for tongue reduction reveal that an ideal procedure has yet to emerge [1,2,4,5].

This is understandable as the condition is relatively rare with a variation in the degree of macroglossia. While reducing the tongue, it is important to preserve the lingual nerve and hypoglossal arteries. Bracka’s has shown that the lingual arteries run as a pair on the ventral surface of the tongue on either side of the mid-line septum. The sensory nerve for the anterior two-thirds of the tongue is the lingual nerves. It runs in the floor of the mouth together with the artery progressing towards the tip of the tongue [1,5–8].

3. Conclusion

In our technique, provided that the excision does not encroach onto the base mid-line of the tongue to preserve the lingual nerve and hypoglossal arteries. It can be used for repeat reductions and in
muscular hyperplasia without jeopardizing the mobility and sensibility of the tongue.

References