

## A NOVEL CAUSE OF SWOLLEN TONGUE

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### INTRODUCTION

Acute swelling of tongue is a rare phenomenon which can result in airway obstruction and is potentially fatal. Most cases are due to haemorrhage, oedema, infarction or abscess. We present a case of acutely swollen tongue due to entrapment by a rubber ring which required examination under anaesthesia for diagnosis and removal of rubber ring to relieve impending emergent situation.

### CASE REPORT

A 10 years old girl reported to casualty department with three days history of swollen tongue, painful swallowing and drooling of saliva. According to father she was chewing sugarcane before the symptoms appeared. There was no history of trauma, insect bite, drug intake, exposure to chemicals or dental problems. There was no history of any previous attack of tongue swelling, recurrent facial or neck oedema, or any allergy. There were no diseases or allergies running in the family. Examination revealed a conscious and cooperative girl with saliva drooling out of mouth and swollen tongue (Fig. 1).

She was afebrile, pulse was 90 beats per minute and respiratory rate was 24 per minute. There were no signs of respiratory distress. Intraoral examination was limited as swollen tongue was hampering adequate view and tongue movements were extremely painful so no assessment could be made. Rest of clinical examination was unremarkable. She was hospitalized as a case of glossitis, and started with parenteral co-amoxiclav, metronidazole and intravenous fluids. Her blood complete picture and urine routine analysis were normal. She was later seen by dermatologist, General and ENT surgeons. Keeping in view the history of chewing sugarcane a suspicion of

haematoma/abscess was made. Due to inadequate intraoral exposure and continued swelling of tongue which could culminate in respiratory embarrassment it was decided to examine her under anaesthesia and proceed further according to circumstances. She was assessed by anesthesiologist and labeled a case of difficult airway. She was anaesthetized with option of tracheostomy in case of failed intubation, however endotracheal intubation was done successfully. Examination under anaesthesia revealed extensive slough which was removed to reveal swollen discoloured tongue. Pulling out the tongue with the help of suture revealed a circumferential constriction roughly at the junction of anterior one third and posterior two thirds of tongue (Fig. 2). In depth of constriction a rubber material was felt, which on removal was found to be a complete rubber ring /band -which seemed to be the initial portion of a balloon (Fig. 3). Colour of tongue immediately started to improve after removal of rubber ring. Patient had uneventful postoperative recovery, tongue regressed in size and colour improved (Fig. 4). She initially denied application of rubber ring either by herself or by anybody else but later after much effort came out with the fact that she had herself applied the ring during playing but once the tongue swelling started she was frightened and concealed the truth. She was discharged on

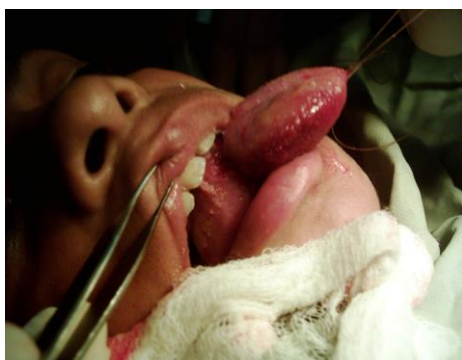


**Fig. 1: Patient with tongue swelling & drooling of saliva**

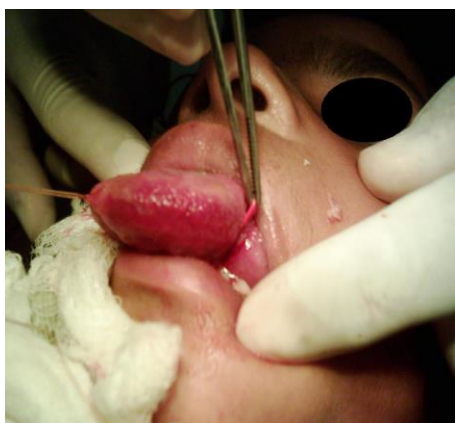
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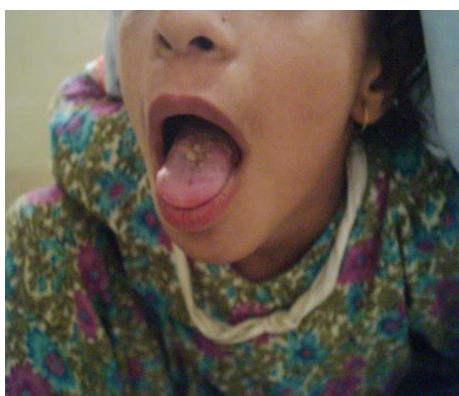
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**Fig. 2: Constriction of tongue**



**Fig. 3: Rubber band found at depth of constriction**



**Fig. 4: Patient before discharge**

third post operative day.

## DISCUSSION

Swelling of tongue is not a very common disease. Macroglossia is traditionally defined as a resting tongue that protrudes beyond the teeth or alveolar ridge. Diagnosis is usually based on this sign and comparison with an apparently normal tongue (objective measurements of size are unreliable) [1]. The term should be reserved for cases of long term

painless enlargement of the tongue and is distinct from rapid growth of the tongue due to acute parenchymatous glossitis<sup>1</sup>. There are many causes of macroglossia including Congenital conditions like Hemangioma, Lymphangioma, Down syndrome, Beckwith-Wiedemann syndrome, Mucopolysaccharidoses and Acquired causes like Hypothyroidism, Cretinism, Actinomycosis, Uremia, Myxedema, Hypertrophy Acromegaly, Surgery, Hemorrhage, Direct trauma (eg, biting), Intubation injury, Radiation therapy, Lingual thyroid, Carcinoma, Amyloidosis and Sarcoidosis [2].

Acute swelling of the tongue (acute macroglossia) may obstruct the upper airway and become a life-threatening condition. Most of the cases are due to acute hemorrhage, edema, infarction, or abscess [3]. Bleeding can result from trauma, bleeding within a vascular malformation, and hemorrhagic disorders. Acute edema of the tongue is mostly caused by allergy and angioedema. Although tongue is exposed to many pathogens infection/abscess formation is rare [4]. Trauma to the tongue can occur from ragged or carious teeth, ill-fitting dentures, biting (during eating or an epileptic fit), or penetration by a foreign body (e.g. a fish bone). Although constriction injuries can cause acute swelling of tongue, but there are very few cases reported so far. Typical signs of acute lingual abscess are onset of tongue swelling, painful swallowing, difficulty in speaking, protrusion of the tongue, and dribbling of saliva, all of which develop within hours or a few days. Dyspnea and dysphagia are the most dangerous complications and should be treated immediately [4]. Our patient had all these signs and symptoms. As far the etiology in our patient is concerned there was a vague history of chewing sugarcane which led to belief that a sharp fiber may have stuck in tongue which subsequently could have led to either haematoma or abscess formation. Examination without anaesthesia was difficult and anaesthesia was dangerous due to difficult airway. Once the patient was examined after being safely anaesthetized the true pathology was revealed. The importance of etiology of constriction injury cannot be overemphasized

by the fact that if there were a clear history of rubber band exposure, it could have been removed without general anaesthesia and much earlier relief of agony of patient. There are occasional reports of tongue entrapment in bottles [5], cans [6] and in a comatose patient with contractures and severe trismus [7].

After going through the literature we could not find any case of tongue swelling due to application of rubber ring. Children play with variety of things and are liable to do strange things. A high index of suspicion is essential in all children presenting with acute tongue swelling, a thorough history and meticulous clinical examination is needed to reach to a diagnosis. These cases need prompt

management as progressive swelling can culminate in a fatality.

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