Novel Use of Tissue Glue in Repair of Rent in Thyrohyoid Membrane After Excision of External Laryngocele

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Submitting Author:
Journal Admin ENT Scholar

Article ID: WMC003276
Article Type: Case Report
Submitted on: 19-Apr-2012, 11:16:03 AM GMT Published on: 19-Apr-2012, 04:46:41 PM GMT
Article URL: http://www.webmedcentral.com/article_view/3276
Subject Categories: OTORHINOLARYNGOLOGY
Keywords: External laryngocele, Repair, Tissue glue

How to cite the article: Thiagarajan B, Kumar S. Novel Use of Tissue Glue in Repair of Rent in Thyrohyoid Membrane After Excision of External Laryngocele. WebmedCentral:ENT Scholar 2012;3(4):WMC003276

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Source(s) of Funding: This article did not receive any funding from any agency

Competing Interests: Authors have no competing interest pertaining to the views expressed in this article

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Abstract

This paper narrates our experience of using tissue glue to seal the rent in thyrohyoid membrane following excision of external laryngocele. Thyrohyoid membrane is highly elastic, and this elasticity makes suturing the rent in the membrane very difficult. We used tissue glue with success to seal the rent.

Introduction

Laryngocele is defined as an anomalous air sack communicating with the ventricle “Virchow 1863”. It is usually located between the false cord and the inner surface of thyroid cartilage [1]. Three types of laryngoceles have been described:

1. Internal – Present between the false and true vocal folds
2. External – Presents itself in the neck through a rent in thyrohyoid membrane
3. Combined – This type has both internal and external components.

In this paper we discuss the surgical management of external laryngocele. We used tissue glue to seal the rent in the thyrohyoid ligament after removal of the mass.

Case Report

40 years old male patient came to our department with complaints of:

Swelling over the left side of the neck just below the angle of mandible of 5 years duration.

There was no associated pain. The swelling showed regression and increase in sizes during varying intervals. Patient had no difficulty in swallowing, and his speech was also normal.

On examination: A soft globular mass measuring 5 cms x 3 cms just below the angle of the mandible. It was reducible. It increased in size when the patient performed valsalva maneuver.

Surgical Procedure

Through skin crease incision in the left side of neck just below the mandible flap was elevated in the subplatysmal plane. Submandibular salivary gland was retracted out of the surgical field. The sac was identified and was resected. The rent in the thyrohyoid membrane was sealed with tissue glue and the neck wound was closed in layers.

Discussion

Tissue glue was first introduced by Tennessee Eastman lab in 1964 for industrial purposes. This same glue was used by American Military to seal the wound of soldiers who got injured during Vietnam war in 1966 [3]. Tissue glue has been used with reasonable amount of success in closing episiotomy wounds [2].

In this surgical procedure we used isobutyl based cyanoacrylate glue [4]. It has the advantage of fast setting and does not evoke granulomatous reactions. The presence of fibrin in the glue enhances wound healing by stimulating neovascularization and fibroblast proliferation.

Glue should be applied via a syringe using 27 gauge needle in droplet form. Thick application donot enhance bonding and tend to crack and loosen prematurely.

Thyrohyoid membrane is very elastic and hence repairing the rent after removal of laryngocele is a difficult task. Hence we used fibrin based tissue glue to seal the rent.

References

1. http://www.drtbalu.co.in/l_cele.html

Illustrations

Illustration 1

Clinical photograph of a patient with laryngocele

Illustration 2

Xray neck lateral view showing air filled mass
Illustration 3

CT scan neck axial cut showing air filled mass

Illustration 4

Figure showing laryngocele under clamp before being excised
Illustration 5

Figure showing tissue glue being applied to close the rent using a syringe and needle provided with the kit.
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