

The Efficacy of Surgical Treatment for Neglected Congenital Muscular Torticollis

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Abstract

Neglected congenital muscular torticollis (CMT) rarely seen in adults. The most effective surgical treatment method for this anomaly is still controversial. The aim of this case was to determine the efficacy of bipolar release of the sternocleidomastoid (SCM) muscle for the treatment of neglected CMT in an adult patient. Surgical treatment led to cosmetic and psychological amelioration and it relieved our patient's pain. This treatment also caused the patient's neck tension to cease and increased range of motion.

Keywords: Congenital Muscular Torticollis; Neglected; Adult

Introduction

Congenital muscular torticollis (CMT) is a rare disease which accompanied with shortening of the sternocleidomastoid muscle (SCM) [1]. The incidence of the CMT ranges between 0.3% - 1.8% in newborns. Shortening of the SCM cause the head to tilt towards the affected side and the chin to turn to the contralateral side [2]. If CMT diagnosed in time it can be recovered without the necessity of surgery most of the time [3]. Nevertheless there are rare cases of CMT seen in adults if neglected [4]. Surgical intervention in adults with CMT have beneficial effects both in functioning and cosmetic appearance based on former researches [5]. In our report we have a case of neglected CMT in a 22 years old female patient who was successfully operated by bipolar tenotomy of the SCM.

Case Presentation

A 22 years old female patient presented to our clinic with headache, right cervical rotation restriction and serious tension and swelling at the left SCM's proximal and distal attachment level. She also had aesthetic complaints such as facial and shoulder asymmetry.

She has diagnosed with cervical scoliosis when she was 7 years old. She was treated with corset for cervical scoliosis, which made the CMT even worse. After this treatment her family was not satisfied with the results so they see another clinic. This time she was diagnosed with CMT however surgery was not considered as necessary, instead she had treated with physical therapy for 4 years. She had slight resolution of torticollis after physical therapy however still reported pain, tension, rotational deficit and postural retrogression.

On examination in our clinic, there was asymmetry in her eyes, but there was no strabismus. She also had facial and shoulder asymmetry (Figure 1). She had 10° right sided rotational deficit and 30° lateral flexion deficit. Additionally to physical exam, we palpated a hard mass in the left SCM. Before surgery, ophthalmological examination was done to exclude the possibility of developing strabismus after operation. Then surgery preparations started.



Figure 1

Surgical technique

The patient had significant tension at both cranial and caudal regions of sternocleidomastoid muscle, so bipolar tenotomy of the SCM was the chosen technique for surgery. At first, resection at the caudal end of SCM was performed. Secondly, the cranial end of SCM was resected. Tension of the SCM disappeared during surgery. After surgery the patient was put on cervical corset for 3 weeks and told to do stretching exercises at home (Figure 2). Cervical rotation restriction and serious tension and swelling were ended at the first control after 3 weeks. Patient's pain was released. Her neck rotational deficit improved from 10° to 2° and lateral flexion deficit improved from 30° to 3° at postoperatively six months (Figure 3). There was no complication or recurrence during the 6 months of follow-up. Her aesthetic complaints were resolved, her quality of life improved and psychological condition was ameliorated.



Figure 2



Figure 3

Discussion

CMT is one of the most common congenital musculoskeletal malformation with a rare incidence [6]. The exact cause of CMT still remains unknown however trauma at birth is considered as the main reason [7]. When CMT diagnosed in early age it is easier to be managed but in adult patients with neglected CMT, treatment options are varies and the management becomes more difficult.

During infancy, recommended treatment for CMT is stretching of the SCM and physical therapy, surgical release of the muscle is not warranted. According to the study that Sönmez., *et al.* run, 95% of patients diagnosed and treated before one year old, did not need surgical treatment [8]. If CMT continuous for 1 year it will not resolve automatically therefore needs to be resolved by surgery [9].

If CMT left untreated for any reasons it becomes neglected and conservative treatments are no longer a solution for patients. In patients with neglected CMT, surgery is recommended as a treatment method in order to prevent any other worsening [9].

There are numerous surgery options for treatment of neglected CMT in adults [10]. Such as: bipolar release of the SCM, unipolar release of the SCM, Z-plasty and endoscopic release of the SCM. The most effective surgical technique is still contradictive, however in our case the chosen technique was bipolar tenotomy of the SCM. Bipolar release of the SCM is based on tenotomy of the both clavicle and mastoid attachment sides of SCM. According to one study that Lee., *et al.* published, bipolar release of the SCM gave good results for adult patients by improving the head tilt, facial asymmetry and quality of life [11]. Besides these advantages of this procedure hypesthesia and postoperative pain are two disadvantages, however these complaints end in a short time after surgery.

Unipolar release of the SCM is based on tenotomy of the sternal or clavicular attachment level of SCM. The decision of which side to incise become clear during surgery based on tension of the muscle or tumor inclusion [12]. In Mohan., *et al's* case report, unipolar release method was used for their 18 year old female patient with CMT and the results were satisfactory [13]. They report range of motion and head tilt improvement. Apart from all these there was a slight change in facial asymmetry.

Burstein defined the endoscopic release technique for CMT in 1998 [14]. Wang reported a series of 69 patients underwent endoscopic release of CMT with radiofrequency under local anesthesia [15]. 94% of their patient had good or excellent results and no patients showed poor results according to Cheng's scoring table. This technique ensures minimal invasion and provides cooperation between the patient and surgeon since it is done under local anesthesia.

In this study we reported a case of neglected CMT in a 22 year old female patient. Her aesthetic complaints were resolved and her quality of life improved after surgery. In addition to these, her range of motion enhanced and her psychological condition ameliorated.

Conclusion

In this report we agree that neglected torticollis surgery met our expectations and when the results of the surgery were considered, we can suggest surgery as a treatment method for neglected CMT in adults.

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