

## **Neglected case of congenital muscular torticollis treated with Bipolar release: a Case Report**

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**Abstract:** Neglected congenital muscular torticollis (CMT) is a common presentation in developing countries like India. The primary concern of the patients is cosmetic. There are only a few case reports that indicating efficacy of surgery for neglected case of CMT. We report a case of neglected CMT in an 18-year-old female patient which was successfully managed by performing a bipolar resection with z plasty lengthening of the sternocleidomastoid muscle (SCM). After surgery, the range of neck movement and head tilt improved. We emphasize that surgical management of adult patients with neglected congenital muscular torticollis is a treatment option yielding good cosmetic and functional outcome.

**Keywords:** Torticollis, Bipolar release, z plasty, Sternocleidomastoid.

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### **INTRODUCTION**

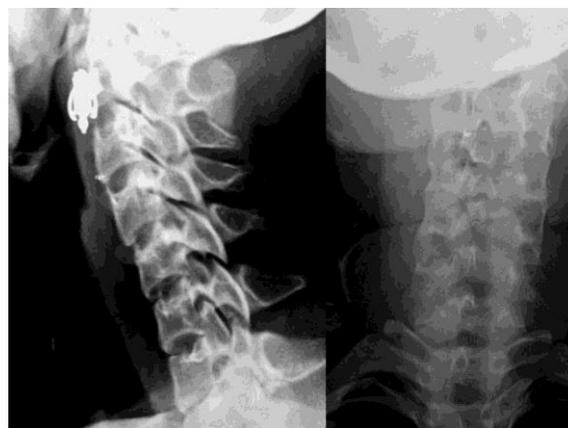
Congenital muscular torticollis is the third most common congenital musculoskeletal anomaly after dislocation of the hip and clubfoot [1]. Congenital muscular torticollis secondary to contracture of sternocleidomastoid is common with an incidence of 0.4% of live births [2]. The term congenital muscular torticollis refers to a neck deformity that primarily involves shortening of the sternocleidomastoid muscle that leads the head to turn toward the affected side and the chin to point to the opposite side [3]. If that is delayed beyond a certain point in time it needs surgical efforts to correct the deformity [4]. Ling et al have stated that the optimal time for surgery is between 1 and 4 years [5, 6]. However, there are only a few reports that indicate the efficacy of surgery for neglected cases in adults [7, 8]. We report experienced a case of neglected muscular torticollis in an 18-year-old patient and the efficacy of bipolar tenotomy with z plasty lengthening of the sternocleidomastoid muscle (SCM) for this adult patient.

### **CASE REPORT**

An 18-year-old female patient had a CMT from birth. However, her treatment was neglected until she began to care about her cosmetic appearance [Fig 1]. She came to our clinic when she was 18 years of age. She had slight facial asymmetry with a 8° right side rotational deficit and 35° lateral flexion deficit before surgery. A fibrotic mass in the SCM in her left neck was palpable. X-ray findings showed scoliotic tilt but no bony anomalies [Fig-2].



**Fig-1: Clinical picture showing preoperative torticollis in patient**



**Fig-2: X ray images of patient showing changes due to chronic head tilt**

Patient was planned for bipolar release surgery. Two incisions were made, one 1 cm above the medial third of clavicle and the other just below the tip of the mastoid process. Adequate release was done for all the contracted soft tissues (fasciae and muscles). Care was taken to protect the facial nerve in the upper incision and the jugular veins in the lower incision. The neck was put through a full range of motion before closure of the wound. Bipolar resection with z plasty of SCM was performed. Rotation and lateral flexion at the

left side improved, and tension of the SCM disappeared during surgery.

There was no significant complication after surgery. Patient was put neck brace for 1 week following surgery. Twelve months after the surgery her neck rotational deficit improved to 3° and lateral flexion deficit to 5°[Fig 3]. There was no complication or recurrence during the 12 months of follow-up.



**Fig-3: Clinical photograph demonstrating improved range of motion and cosmesis.**

## DISCUSSION

Congenital muscular torticollis is the third most common congenital musculoskeletal anomaly after dislocation of the hip and clubfoot [1]. Congenital muscular torticollis secondary to contracture of sternocleidomastoid is common with an incidence of 0.4% of live births [2]. Congenital muscular torticollis is an entity on which there are not many published reports from the Indian subcontinent, however there are certain points over which some consensus has been developed over the years. CMT is a fibromatosis that affects the sternocleidomastoid muscle primarily and if left untreated leads to secondary shortening of other soft tissue structures in the neck. Till the age of infancy conservative management in the form of passive stretching may help in the resolution of the deformity. When irreversible contractures have developed in sternocleidomastoid muscle surgery may be of benefit.

A scoring system proposed by Lee et al [Table 1] which includes function and cosmetic results, has been used for assessing the surgical outcome [9]. The neck movement and lateral band are compared with the uninvolved side, and the head tilt and operative scar

were evaluated by clinical observation and a questionnaire (Table 1; modified from [9]). The total possible score is 18 points. For both pre- and postoperative assessment, the following system is used: 17-18 points, excellent result; 15-16 points, good result; 13-14 points, fair result; and <12 points, poor result. Our patient's preoperative score was 7. The postoperative score improved to 16 (good result), and the patient's satisfaction was excellent.

The timing of surgery is controversial. Canale et al reported that full recovery of facial asymmetry after the age of 4 is difficult to achieve [6]. Lee et al [9], Minamitani et al. [10], and Chen and Ko reported that late release of sternocleidomastoid muscle for patients more than 6 years of age could yield acceptable results. On the other hand, there have been few reports of surgical treatment for adults (over 20 years old) [7, 8]. Eighteen adult and skeletally matured patients (18 to 32 (average 21.9) years) were surgically treated for neglected CMT and prospectively followed, and surgical results for most patients were excellent or good [7]. Twelve adult patients with neglected CMT (17 to 31 (average 24) years) were surgically treated and were

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followed up for a minimum of two years. Most patients showed excellent results in the range of neck movement and head tilt improved in all 12 patients and cosmesis improved in 11 [8]. In the current study, we also showed good surgical results in a patient with neglected CMT. In this regard, we recommend surgical treatment for adult patients.

A surgical method for adult patients with neglected CMT has been reported [7, 8]. Surgical bipolar sectioning of the SCM should be considered, even in adults with irreversible facial and skeletal deformities [7]. Moreover, surgical management of adult patients with neglected congenital muscular torticollis using a bipolar release of the SCM gives excellent results [8].

In this case bipolar release was performed i.e. the release of both the inferior (clavicular and sternal) heads and superior (mastoid) head using the Ferkels modified technique.

#### CONCLUSION

Bipolar release is a very viable option for correction of neglected and relapsed congenital muscular torticollis. There is a very important role of postoperative well planned physiotherapy schedule that needs to be closely observed for achieving results.

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