

SURGICAL TREATMENT FOR SEVERE CONGENITAL TORTICOLLIS

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Key words: Congenital Torticollis

ANAMNESIS:

A 14 year-old male patient was submitted from another Hospital because of an advanced congenital torticollis with fibrosis and severe shortening of the right sternocleidomastoid (SCM) muscle, due to a lack of follow-up in his reference Hospital. He was derived to our Hospital's Spine Team to make an assessment.

He had no Drug's Allergic Reactions or any important past illnesses.

PHYSICAL EXAM:

In repose, we could see the right shoulder more elevated than the contralateral one, and an asymmetry because of a head displacement to the left. Moreover, he presented a head right tilt and a chin left tilt (figure 1.1). Also, a fibrous cord could be seen at the right SCM (figure 1.2).

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With the active movement, we could see a

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35° restriction for the right rotation movement (figure 1.3), as well as a limitation for the complete neck extension at 25°. The patient referred pain when we touched the right Sternocleidomastoid.

Neurological and vascular exams did not present any complication.

COMPLEMENTARY TESTS:

A head and neck TC was solicited in order to discard any vertebral malformation or any C1-C2 subluxation sign. They were discarded, because only an odontoid little asymmetry, smaller than 15mm was seen (figure 2.1).

In the RMI, we could discard the atlo-axoid luxation. We saw that the atlo-axoid joint transverse ligament was entire. It also was appreciated a very small approximation between the odontoid and the atlas lateral mass, secondary to the torticollis. The vertebral bodies and the

intervertebral discs were non-altered (figure 2.2).

EMG: a study from the sternocleidomastoid-dependent muscles was done, but no pathology events were found.

DIAGNOSIS:

Congenital torticollis, due to the right sternocleidomastoid shortening.

TREATMENT:

Due to the long evolution of the pathology, it was decided to perform a surgical intervention, starting with a medial supraclavicular approach on the distal tendons of the right sternocleidomastoid (figure 3). Then proceeded to dissect by planes until the transverse dissection of the platysma of the neck. After the release of adhesions and fibrosis, the sternal and clavicular tendons of the right sternocleidomastoid were identified, and a tenotomy was performed.

After checking, by manipulating the patient's head, that a high limitation degree persisted for neck mobility, a longitudinal approach was performed on the proximal and posterior border of the SCM. During the dissection by planes, the sensory branch (Greater Auricular nerve) of the Facial Nerve was identified, dissected and referenced (Figure 4) and the External Jugular vein was identified, too (figure 5). After the release of fibrosis and adhesions in the proximal insertion of the SCM, we proceeded to section the insertion of the SCM in the mastoid apophysis (Figure 6).

After this second approach, a clear improvement in head's mobility was observed, although there was still a partial

limitation due to the fibrosis of the SCM's deep fascia, which led to its release.

Then, a final manipulation of the neck was done, in order to check that an adequate mobility had been achieved, and after checking the integrity of the neural potentials by the Neurophysiology team (figure 7), the wounds were closed by planes, leaving a drainage tube to avoid possible bruising.

The intervention was performed under general anesthesia, in the supine position and after administering antibiotic prophylaxis with Cefazolin 1 gram. After the surgery, the patient was carried to the Hospitalization floor.

EVOLUTIVE CARES:

The patient presented an immediate postoperative period without complications, beginning the ambulatory and rehabilitation exercises on the 2nd postoperative day, and a bivalve corset was placed to keep the head tilted to the left and with a slight rotation of the chin to the right, which must be worn by the nights. After evaluating corset and rehabilitation exercises tolerance by the patient, he went home 7 days postoperatively, and was referred to external consultations of the Spine Team after two weeks, where it was observed that the evolution of the scar was good, and the appearance and mobility of the neck had improved, but there was yet a residual deformity, very difficult to improve totally (Figure 8). At that moment the staples and stitches were removed, the scar was healed, and the patient was urged to continue with the prescribed rehabilitation exercises, until the next visit in a month.

DISCUSSION:

Torticollis is a deformity of the patient's neck, which can have multiple causes as a substrate. To classify it, it is usually taken into account whether the deformity was present at birth (congenital) or is acquired, and whether or not it produces pain (1). The most frequent form is congenital muscular torticollis, due to the involvement of the SCM. (1,2,3)

Normally, the diagnosis of congenital torticollis is made by Physical Examination, since the congenital muscular torticollis produces some very striking appearance, consisting of the deformity of the neck, because there is a tilt of the head towards the involved side of the affected SCM, and a rotation of the chin towards the contralateral shoulder (1,2,3,4). Usually, this look is accompanied by a prominence or fibrous cord on the side of the neck, which goes from the proximal insertion of the SCM in the mastoid process to the insertions in the sternum and clavicle (1,2). When this pathology is diagnosed, it is necessary to include in the differential diagnosis bone abnormalities that can cause a similar appearance (3).

As usual, the favourite treatment for congenital muscular torticollis is conservative, because by means of massage and rehabilitation exercises, an acceptable correction of deformity and an adequate range of mobility is achieved in approximately 90% of cases (2,5). Normally, the rehabilitation exercises consist of rotation movements of the chin towards the ipsilateral shoulder, and tilting the head towards the contralateral shoulder, as well as forcing the active rotation towards the affected side (1,2).

Due to the great effectiveness of conservative treatment, the surgical treatment option is reserved only for 10% of patients who do not achieve an adequate range of mobility (those in which 30 or more degrees are lacking to reach full rotation) or whose deformity is still excessive at the aesthetic level (1,5).

In addition, we must bear in mind that surgical treatment can have many disadvantages for young children, because the scar that occurs can cause new fibrosis, and that the functional results do not differ if surgery is performed in a bit older children, so which surgery usually takes place at school age (5-6 years) (1). However, it must be borne in mind that if it is not treated at this age, advanced torticollis can cause pain, neck deformities difficult to repair despite surgical treatment, as in the case we are occupied with, or complications such as the loss of the SCM column or the presence of lateral bands (5).

When it is decided to perform the surgical treatment, the surgical technique must be carefully planned. There are many options, but the one preferred by many authors is the bipolar approach of the SCM, through which adhesions and fibrosis are released both in the distal end of the SCM and in the proximal insertion in the mastoid process, since a very satisfactory functional and aesthetic result is usually achieved (1,2,6). A variant of this approach is the Unipolar one, which is used for less severe cases, in which resolution is achieved by releasing only the fibrosis of the distal insertions of the SCM (1,3).

The main complications of this technique that have been seen in the literature are the involvement of the Auricular Nerve, sensitive branch of the facial, which crosses below the SCM, and the involvement of the veins of the neck, especially the External Jugular, which runs along its posterior border (1).

Less important complications are the recurrence of fibrous bands in the clavicular space that can be seen in almost 50% of the patients, but fortunately without functional or aesthetic consequences, and the loss of the SCM muscle relief in the neck, which is observed in almost 80% of the patients (2,3).

CONCLUSION:

To sum up, we can obtain two conclusions from the analysis of this clinical case. The first is that torticollis is a pathology that, if treated early, responds well to conservative treatment, but if there is a lack of follow-up and it becomes an evolved torticollis, it can be difficult to correct even with surgical treatment. So that, the best age range for the surgical treatment of the congenital torticollis is between 1 to 4 years of age. (4)

The second is that, within surgical treatment, for advanced torticollis the most appropriate approach is bipolar, releasing both the proximal and the distal insertion of the sternocleidomastoid (5).

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