

Traumatic neuroma after torticollis surgery: a rare occurrence

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We report a 15 years old girl who admitted to our hospital with signs of recurrent torticollis after two failed operations and consistent pain at the side of surgery. The past operations were performed at 1 and 6 years of age and she has been suffering pain from previous incisions with neck movements. At physical examination, the sternocleidomastoid (SCM) muscle behaved like a fibrous band, restricting the neck movements and resulting in pain. The operation was indicated for the fibrotic SCM. At operation two separate incisions were performed on each end of the SCM to remove all of the fibrotic muscle. The histopathological examination demonstrated a traumatic neuroma which respectively correlates with the pain symptoms. The patient discharged on the second postoperative day and physiotherapy was started. The patient is symptom free one year after the surgery.

Introduction

Traumatic neuroma usually occurs after partial or complete nerve transection. It is not a true neoplasm but a reactive hyperplasia in which the nerve sheath develops at the end of a proximal nerve stump. Occurrence of traumatic neuromas after neck surgery is rare, and the incidence is about 1.1–2.7% after neck dissection [1,2]. The indication for operative treatment for torticollis is failure in conservative management. The treatment modality is a unipolar or bipolar tenotomy. Recurrence can be encountered postoperatively and a redo operation is indicated. The main reason for failure is insufficient removal of the fibrotic sternocleidomastoid (SCM). Recurrence rates are especially high (7%) in unipolar release, and bipolar tenotomy is superior to unipolar tenotomy in repeat operations [3,4]. Traumatic neuroma mainly occurs secondary to various neck dissections, tumor resection and/or cervical lymphadenectomy. However, traumatic neuroma after torticollis operation has not been reported previously, according to PubMed Medline search.

Case report

A 15-year-old girl admitted to our hospital with recurrent torticollis presented with local and consistent pain at the side of surgery. The patient had been operated upon twice at 1 and 6 years of age. She had two skin incisional scars at the upper and lower ends of the right SCM and had been suffering from pain at the side of surgery on movement of the neck. On physical examination, the right SCM was found to be fibrotic but not totally inhibiting her neck movements; her posture did not point to a case of severe torticollis (Fig. 1a). Neck MRI revealed the presence of a right SCM, which was smaller than that on the left side (Fig. 2). On the basis of clinical and radiological findings, the reason for failure after

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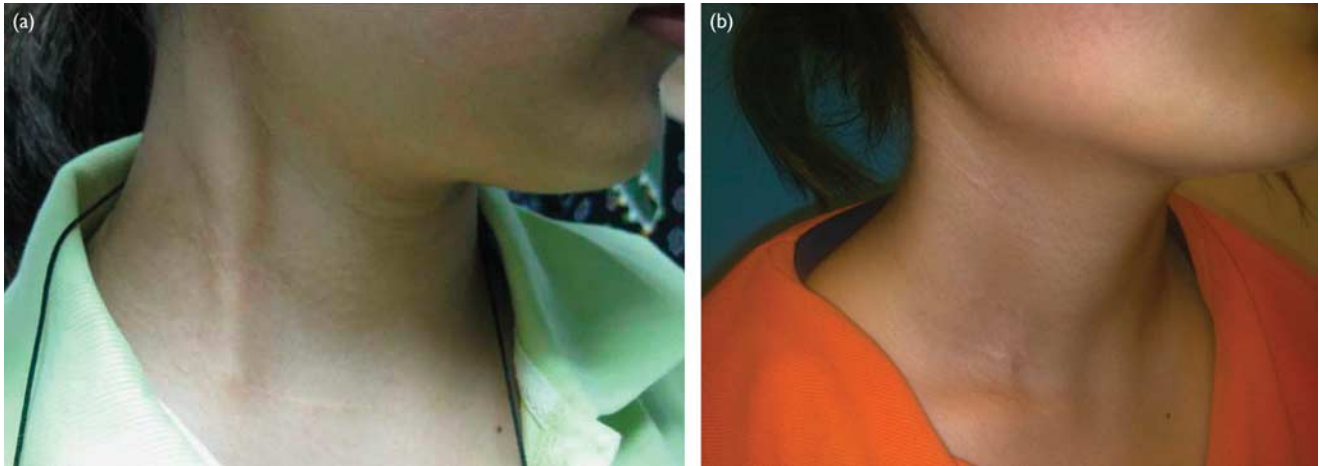
repeated operations for torticollis was determined as incomplete removal of the right SCM. We interpreted these findings preoperatively as follows: the remaining SCM behaved like a fibrous band, restricting neck movements and resulting in pain. The current status of the patient was discussed with her and her parents and consensus was established. During the operation, two wider incisions were made at the site of the old incisions. The lower and upper ends of the SCM were identified and the SCM was completely removed. Histopathological examination of the specimen revealed a traumatic neuroma. The patient was discharged on the second postoperative day and underwent neck physiotherapy for 6 months. She was symptom free at 1 month postoperatively and has been on follow-up for 1 year (Fig. 1b).

Discussion

We successfully treated a patient who presented to us with pain and persistence of torticollis after two repeated torticollis operations. We performed bipolar tenotomy and the reason for failure of past operations was determined as inadequate removal of SCM. The outcome was uneventful. The patient is currently free from pain and signs of torticollis have disappeared. The finding that was unusual was the documentation of traumatic neuroma at the site of the removed SCM (Fig. 3). We performed a PubMed search and did not find any patient who had presented with traumatic neuroma after a torticollis operation.

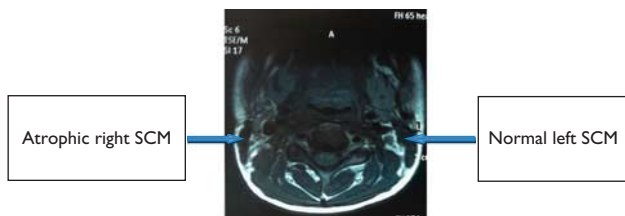
The occurrence of traumatic neuromas after neck surgery is rare [1,2]. It is not a true neoplasm but represents a reactive hyperplasia of nerve tissue and usually occurs at the proximal end of a severed nerve in any part of the body. In the head and neck region, traumatic neuromas are mostly reported to occur in 1.1–2.7% of patients after neck dissections [1,2].

Fig. 1



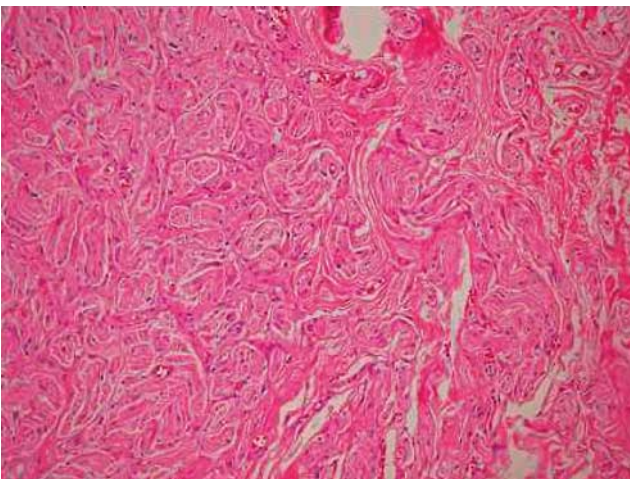
Preoperative and postoperative views show the presence of a fibrotic scar (a) and resolution after surgery (b).

Fig. 2



Neck MRI. SCM, sternocleidomastoid.

Fig. 3



Traumatic neuroma, consisting of small proliferated nerve fascicles.

They present as painful, firm, subcutaneous nodules and are typically located posterior to the carotid artery near the second cervical nerve [1]. Painful hypersensitivity or paresthesia is a characteristic symptom of traumatic neuroma, although asymptomatic patients are not rare as stated in the literature. If traumatic neuromas are detected during MRI, unnecessary operations can be avoided, as most of these can be managed conservatively [5–7].

We re-evaluated the patient again in the light of our findings and the established characteristics of traumatic neuroma. In our case, the patient did not manifest with painful hypersensitivity or paresthesia but had pain on neck movements at the side of surgery. We did not find any palpable nodule either.

MRI is an efficient method for detecting traumatic neuromas [6]. Therefore, after torticollis surgery, MRI is indicated for patients presenting with pain, especially after failed operations. However, we did not document any signs of nodules on MRI preoperatively and retrospectively. This patient did not have any macroscopic identifiable nodule, but there was presence of traumatic neuroma on microscopic examination. The patient experienced relief from pain after the removal of remnant SCM, and we attributed the pain as being possibly secondary to traumatic neuroma.

The question is, if we had documented any identifiable nodule preoperatively on MRI resembling traumatic neuroma in this particular patient, would operative treatment have been indicated? For our patient, the answer is yes, as the past operations had not removed the SCM and signs of torticollis were present. We did not focus our attention on pain preoperatively; however, after the documentation of traumatic neuroma postoperatively we now advocate careful historical examination for pain. Besides, MRI or ultrasound is indicated for the investigation of nodules of traumatic neuroma after torticollis operations if the patient is suffering from pain.

Conclusion

This case demonstrates a rare occurrence of traumatic neuroma after redo torticollis surgery. Traumatic neuroma should be included in the differential diagnosis for persistent pain after surgical treatment for torticollis, especially if redo operation is indicated.

Acknowledgements

Conflicts of interest

There are no conflicts of interest.

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