

## Neck and Occipital Pain Caused by Deep Cervical Intramuscular Lipoma: A Surgical Case

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A lipoma is a slow-growing, benign tumor and is usually asymptomatic; hence, surgical intervention can often be avoided in patients with these tumors in the cervical and cranial area. Lipomas arise most commonly in the subcutaneous fat, but occasionally in muscle tissue. Intramuscular lipomas in the cervico-cranial area have rarely been reported. We describe here a patient with a large intramuscular lipoma in the deep cervical tissue. The patient experienced troublesome pain in the neck and occipital area, and surgical treatment was therefore suggested. Particularly in the cervical area, intramuscular lipomas sometimes invade the surrounding muscles and tissue layers and develop into an irregular mass, despite being benign. In addition, the cervical area has one of the most complex muscle structures. Nevertheless, surgical management of intramuscular lipoma in the cervical and cranial area is sometimes indicated, for example, in patients with clinical symptoms or masses with a tendency to grow large. (J Nippon Med Sch 2017; 84: 96–99)

**Key words:** lipoma, intramuscular lipoma, deep cervical muscle, surgery

### Introduction

A lipoma is a slow-growing benign tumor and is usually not associated with clinical signs or abnormalities. Therefore, surgical intervention is often avoided in patients with these tumors in the cervical and cranial area. If treatment is desired, including for cosmetic or plastic surgical reasons, total removal of the lipoma is essential. Lipomas arise most commonly in the subcutaneous fat, but sometimes in muscle tissue, and there are a small number of reports of intramuscular lipomas in the cervico-cranial area<sup>1–7</sup>.

In this report, we describe our surgical experience with a patient with an intramuscular lipoma associated with troublesome pain in the neck and occipital area, and we reflect on surgical management of cervical intramuscular lipomas.

### Case Report

A 73-year-old man with a right neck mass for the previous five years presented with complications of right neck

pain and dizziness. The neck pain had been worsening for the previous year, and the patient had received long-term treatment with analgesia and anti-anxiety medications from another clinic, but surgery had not been recommended. At the initial examination at our hospital, cervical magnetic resonance imaging (MRI) was performed, which revealed a mass with T1 and T2 high-intensity signals in the right deep cervical muscles. The mass was 60×40×20 mm in size and appeared to be attached to the occipital bone and laminae of C1 and C2 (Fig. 1). We informed the patient and his family that the lipoma was a benign, slow-growing tumor, and surgical removal is not unusual. The patient strongly desired removal of the mass and underwent surgical treatment. Surgery was performed with the patient under general anesthesia and in the prone position. A paramedian longitudinal incision was made. The tumor was located in the rectus capitis posterior major muscle; hence, it was relatively easy to approach with a releasing incision in the medial side of the muscle. These tumors are often

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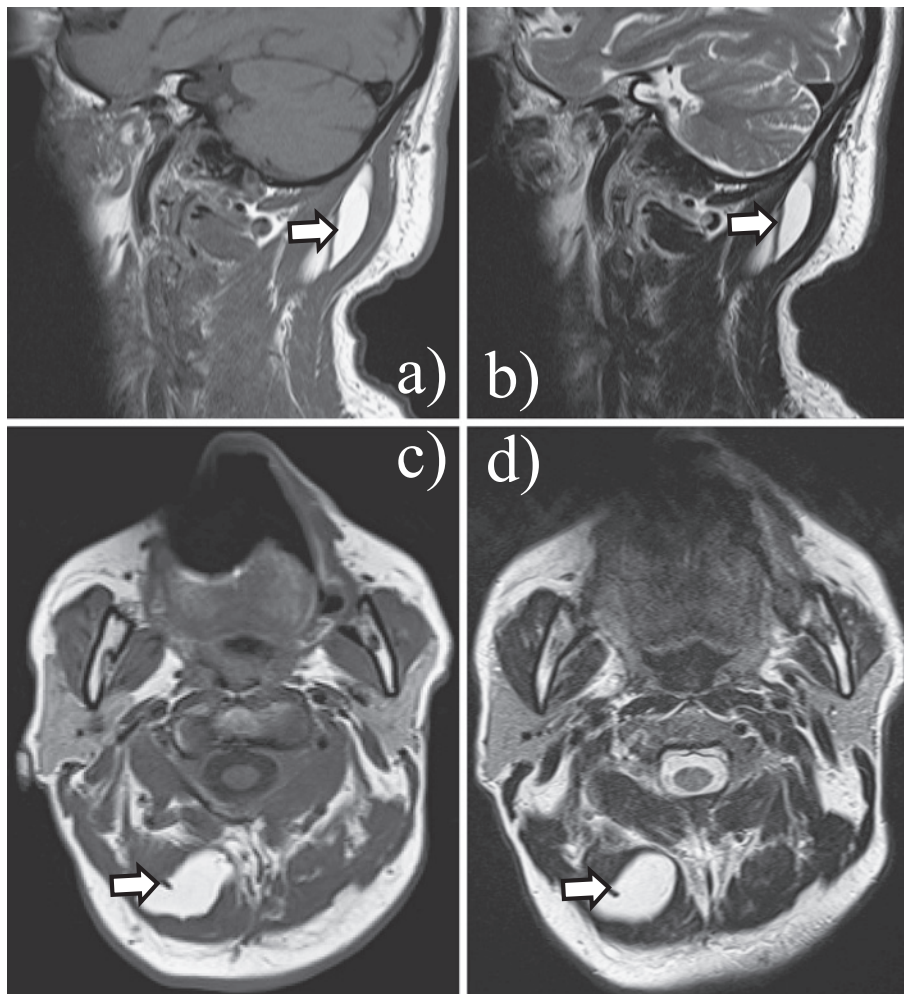


Fig. 1 Cervical MRI images showing an intramuscular lipoma in the dorsal neck area. A band of muscle fibers (arrow) transects the lipoma. Sagittal T1-weighted (a) and T2-weighted images, and axial T1-weighted (c) and T2-weighted (d) images.



Fig. 2 The excised intramuscular lipoma. The edges are well defined, except for the segment with attached muscle fibers, which showed adhesion to the adjacent muscle tissue.

relatively well defined and easily separated from the surrounding tissue, and the tumor in this case could be dis-

sected out almost intact except for one portion (Fig. 2). The surgery time was 46 minutes, and bleeding was negligible. Histopathological examination confirmed that the tumor was a benign intramuscular lipoma. On postoperative follow-up, the patient reported that the pain had resolved and the MRI showed that the intramuscular lipoma in the deep cervical muscle had disappeared (Fig. 3).

The patient has provided written consent for publication of the case, and the study design was approved by the ethics review board of Nippon Medical School Tama Nagayama Hospital.

### Discussion

Although lipomas within the muscle layers of the head and neck have been reported previously, pain symptoms associated with these tumors have been less frequently reported. The neck pain experienced by the patient in the

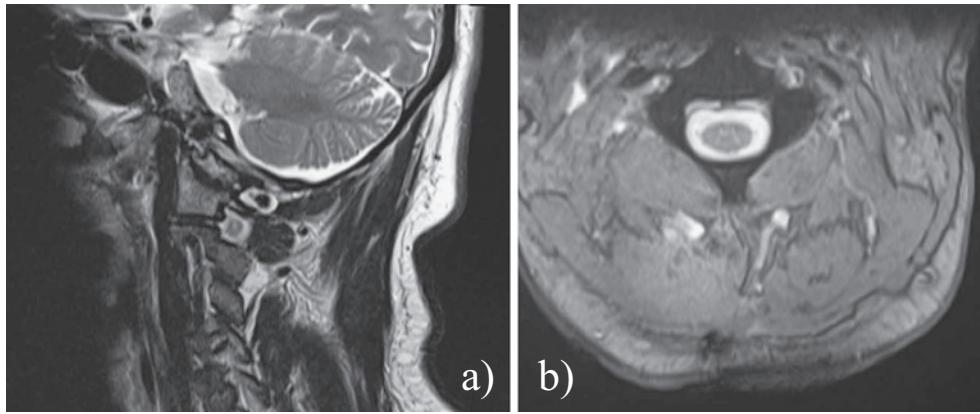


Fig. 3 Postoperative cervical MRI images. There is no evidence of the intramuscular lipoma in the deep cervical muscle. Sagittal (a) and axial (b) T2-weighted images.

present case might have been related to the localization of the tumor. It was located within the course of the greater occipital nerve and compressed the nerve with resultant neurogenic pain. However, the greater occipital nerve could not be identified during the surgery, so indirect pressure on this nerve may be considered as one possible cause of pain. Intramuscular lipomas have a tendency for invasive expansion into the surrounding muscle layers and a high rate of recurrence, so removal of adjacent muscle layers has been recommended together with follow-up imaging, such as MRI<sup>2</sup>. In the present case, the tumor could be dissected from the surrounding muscle tissue almost intact, so it was possible to perform removal of the lipoma only. Tsumuraya et al. described an intramuscular lipoma that occurred in the masseter muscle, and was removed with part of the masseter muscle because of its adhesion to the muscle<sup>1</sup>. Sohn et al. reported an intramuscular lipoma that occurred in the sternocleidomastoid muscle and emphasized that recurrence is more likely for lipomas in this site than in other sites<sup>2</sup>.

Atypical histopathological types of lipomas have been described, such as osteolipoma by Yang et al.<sup>8</sup> and atypical lipoma<sup>9-11</sup>. Therefore, accurate histological diagnosis using either biopsy or excisional samples is essential for planning appropriate treatment and follow-up procedures. In addition, surgical intervention in the head and neck area after an intramuscular lipoma has become massively enlarged poses greater risk of complications<sup>12</sup>, because despite being benign, lipomas in the cervical muscle may involve many complicated structures.

In conclusion, clinicians should consider that disregarding surgical removal as a treatment for lipomas may be inappropriate, particularly in cases involving the cer-

vical and head area. This report is an example of a case of intramuscular lipoma that developed in the dorsal cervical area and in which surgical removal resulted in resolution of troublesome neck pain.

**Conflict of Interest:** None of the authors have any conflicting financial support or relationship pertaining to the publication of this case.

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