

Case Report

Omohyoid muscle syndrome

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ABSTRACT

Omohyoid muscle syndrome is a rare cause of a bulging lateral neck mass that occurs on swallowing that often a worrisome observation because of the concern of malignancy and cosmetic deformity. The first case has been documented on 1969. A 12 years old male came to Surgical Oncology Outpatient Clinic with chief complaint a protruding right lateral neck mass during swallowing. He noticed this complaint since three months prior. He had no previous history of medical illness. He had history of multiple chokehold trauma when playing with his friend 6 months ago. He had no symptoms besides the mass occurring on his right neck. The patient went through the cervical radiograph and neck ultrasonography examination. There were inconclusive results. The patient was informed that the implication of these findings was strictly cosmetic and did not pose any risk of long-term consequence. Corrective cosmetic surgery was recommended as an option if he was concerned about the cosmetic appearance and conservative management was recommended to observe any pain or dysphagia he might experience in the near future. He denied surgery and did not seek further care for his condition. Omohyoid muscle syndrome is a rare condition that might occur after trauma such as chokehold to the neck. Imaging on this syndrome quite challenging especially when there were no other symptoms experienced. If it is proven to be strictly cosmetic, most patients will choose to have a conservative therapy.

Keywords: Chokehold, Muscles, Omohyoid, Protruding

INTRODUCTION

Omohyoid muscle syndrome is a rare cause of a bulging lateral neck mass that occurs on swallowing that often a worrisome observation because of the concern of malignancy and cosmetic deformity.¹⁻⁴ The first case has been documented on 1969.^{1,2} The mass cannot be detectable without a swallowing movement, and is located approximately in the lower lateral part of the neck and may deviate toward the anterior midline.⁴⁻⁶ Most case report have been presented in Eastern Asia.^{6,7} The prevalence of this syndrome has not been determined. Patients with omohyoid muscle syndrome might have a mild uncomfortable sensation over the lateral neck, dysphagia-like symptoms, or a foreign body sensation

during swallowing.^{7,8} The patient may be concerned about the possibility of a malignancy or cosmetic problems. The exact pathophysiology of this syndrome remains in question. It may be noted at any age, and various hypotheses have been proposed, including omohyoid muscle fiber degeneration and failure of the muscle to lengthen, myofiber dysplasia, and failure of the fascial retaining mechanism of the omohyoid muscle.⁷

CASE REPORT

A 12 years old male came to Surgical Oncology Outpatient Clinic with chief complaint a protruding right lateral neck mass during swallowing. He noticed this complaint since three months prior. The mass

disappeared right after swallowing. It made him and his parents uncomfortable, feared the possibility of malignancy. He had no previous history of medical illness. He had history of multiple chokehold trauma when playing with his friend 6 months ago. He denied any changes in voice or local tenderness in the neck, esophageal reflux, unexplained weight loss, and related family history. He did not experienced breathing difficulty nor stiff neck.

The mass was not palpable at rest but was prominent when swallowing (Figure 1A). The anterior neck did not reveal any visual evidence of soft tissue masses or localized swelling (Figure 1B). Active and passive cervical ranges of motion were full and pain free. Cervical radiograph, diagnostic ultrasound examination of the neck was all inconclusive (Figure 2 and Figure 3). The patient was informed that the implication of these findings was strictly cosmetic and did not pose any risk of long-term consequence. Corrective cosmetic surgery was recommended as an option if he was concerned about the cosmetic appearance and conservative management was recommended to observe any pain or dysphagia he might experience. He denied surgery and did not seek further treatment.

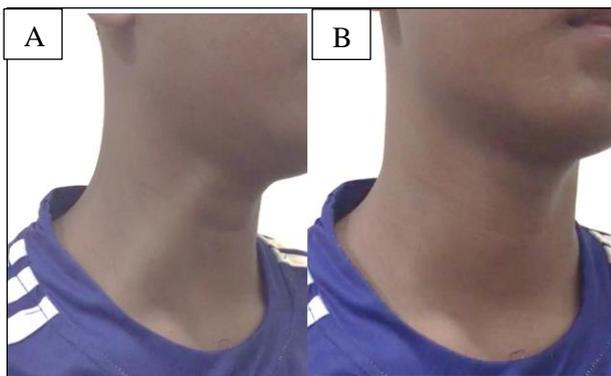


Figure 1: A) (left) the mass was not palpable at rest but was prominent when swallowing. B) (right) the anterior neck did not reveal any visual evidence of soft tissue masses or localized swelling.

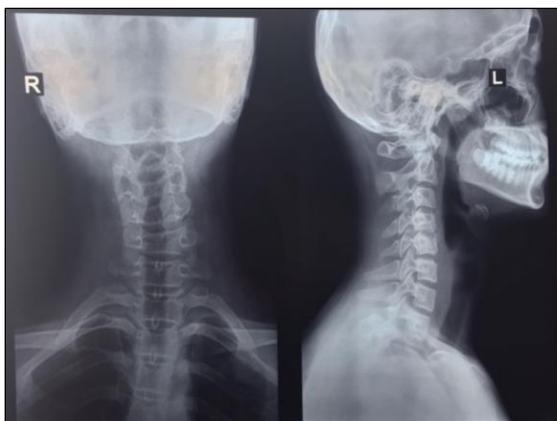


Figure 2: Normal cervical radiograph.

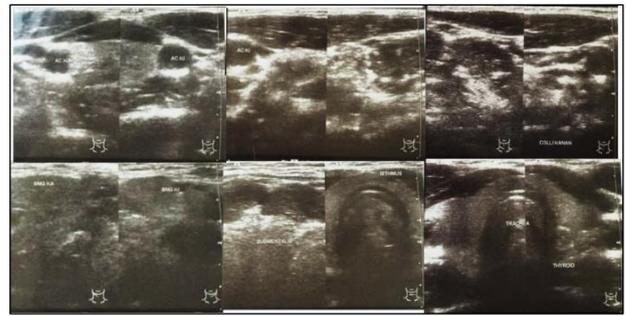


Figure 3: Normal diagnostic ultrasound examination of the neck.

DISCUSSION

The omohyoid muscle is an infrahyoid muscle of the neck, and it is formed when the superior and inferior bellies are united at an angle by an intermediate tendon.^{3,4} It arises from the superior border of the scapula and suprascapular ligament. Passing superomedially, it becomes tendinous to form the intermediate/central tendon, which passes through a fascial sling attached to the medial end of the clavicle. Continuing as a slender muscle, it ascends medially from the sling to insert into the inferior border of the hyoid bone. Functions of the omohyoid muscle are debatable. Obviously, this muscle depresses the elevated hyoid bone during swallowing.⁷

Omohyoid muscle syndrome is a rare clinical condition that shows unmistakable signs of an X-shaped lateral neck mass caused by displacement of the sternocleidomastoid muscle superficially due to aberrant movement of the omohyoid muscle. Historically, a similar terminology, omohyoid syndrome, was used in a report published in 1969 to describe a case with characteristic symptoms, including pain and tenderness in the neck, voice changes, and swallowing difficulties most likely due to acute spasm or cramping of the omohyoid muscle.^{5,6} However, the patient did not show any neck mass or anatomical disconfiguration during swallowing. Thus, this case is not compatible with the current concept of omohyoid muscle syndrome. The first description of a patient with OMS who showed a bilateral neck mass during swallowing was reported in a Chinese journal in 1978 by Ye who also reported in the English literature in 1980.⁸ Interestingly, this rare clinical syndrome has been reported only in countries in eastern Asia, including mainland China, Japan, and South Korea.⁸ However, the geographical and racial distributions of omohyoid muscle syndrome remain largely unknown. There have been several hypotheses about the mechanism responsible for this syndrome. The first proposed mechanism is that it is caused by failure of omohyoid muscle to lengthen due to muscle fiber degeneration. A recent anatomical study regarding morphologies of the superior belly of omohyoid muscle reported that four types of intermediate morphologies were observed in 18 of 67 samples, and four of them were considered to be caused by the poor development of the myofibers. This then limits the

upward movement of the hyoid bone and results in the tenting or lifting upward and outward of the overlying sternocleidomastoid muscle during the laryngeal elevation phase of swallowing. However, this mechanism is not feasible based on authors observation. Unless the omohyoid was actually able to bowstring, tenting would not be possible. The other hypothesis regarding omohyoid muscle is that it is caused by a failure of the fascial-retaining mechanism of the omohyoid muscle. Loosened fascial attachment of the intermediate tendon permits relatively free motion of it, and the elevated sternocleidomastoid muscle and underlying omohyoid muscle form an X-shaped tent in the lateral neck during upward movement of the hyoid bone when swallowing. The etiology responsible for the loosening of this attachment is not known for certain, but anatomical variation or congenital weakness in development, racial predisposition, chronic fatigue, or trauma may contribute to the development of the omohyoid muscle.⁹

CONCLUSION

Omohyoid muscle syndrome is a rare condition that might occur after trauma such as chokehold to the neck. Imaging on this syndrome quite challenging especially when there were no other symptoms experienced. If it is proven to be strictly cosmetic, most patients will choose to have a conservative therapy.

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