

# Dysphagia as the Only Symptom in Submandibular Gland Sialolithiasis: A Case Report

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## Abstract

Sialoliths are a common occurrence in salivary glands. Here, we report a case of a giant submandibular gland sialolith in a patient presented with dysphagia as the only symptom. The sialolith measured 24 mm in length and weighed 4.7 g. A preoperative computed tomography scan revealed displacement of the hyoid bone at rest position on the non-affected side. The right submandibular gland that contained the sialolith was extirpated under general anesthesia, following which, the symptoms of dysphagia were resolved. However, no improvement in displacement was noted postoperatively. Dysphagia may have occurred due to disturbances in hyoid bone movements caused by the large sialolith. The absence of any changes in the position of the displaced bone at rest after removal of the sialolith may be attributed to the fixation of the bone in the underlying tissues due to the long-term existence of the sialolith.

*Key Words: Submandibular gland sialolithiasis, Dysphagia, Hyoid bone, Displacement*

## Introduction

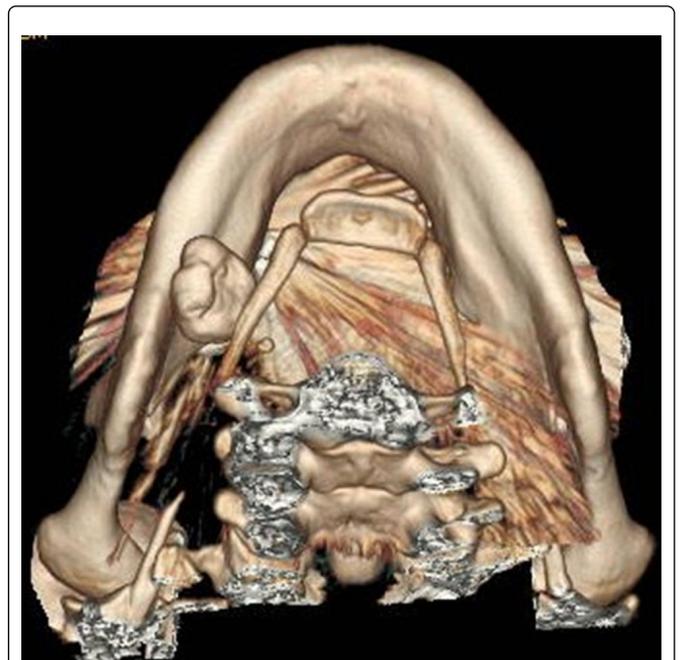
Sialolithiasis is a common condition characterized by the presence of a calcified mass (calculus) in salivary glands, especially the submandibular gland. Patients with submandibular sialolithiasis generally present with chief complaints of swelling and pain due to obstruction of the Wharton's duct [1-4]. Here, we present a case of a giant submandibular gland sialolith measuring 24 mm in length and 4.7 g in weight. Dysphagia was the only symptom experienced by the patient.

## Case Report

A 47-year-old male was referred to the Fukui General Hospital in Japan in November 2012 with a diagnosis of submandibular gland sialolithiasis. He complained of dysphagia for the last three years during tooth brushing and while eating noodles; however, he had never experienced the common symptoms of submandibular gland sialolithiasis, such as pain and swelling. The patient was taking medication for hypertension. The hematological examination did not reveal abnormalities. Similarly, extraoral and intraoral examinations did not reveal any significant findings. Orthopantomography demonstrated the presence of a radiopaque lesion in the right submandibular region. Three-dimensional Computed Tomography (CT) was used to indicate a sialolith on the inside of the body of the right mandible body. The rotational and horizontal displacement of the hyoid bone was observed on the non-affected side (Figure 1). Based on these findings, a diagnosis of right submandibular gland sialolithiasis was reached. Subsequently, the right submandibular gland was extirpated via an extraoral incision under general anesthesia. The extirpation was difficult owing to strong bonding and adhesion to the surrounding tissues. No complications were observed during and after the surgical procedure. The postoperative course was uneventful and the dysphagia had disappeared.

Based on the assumption that the dysphagia might have occurred due to the displacement of the hyoid bone following compression by the giant sialolith, we compared the position

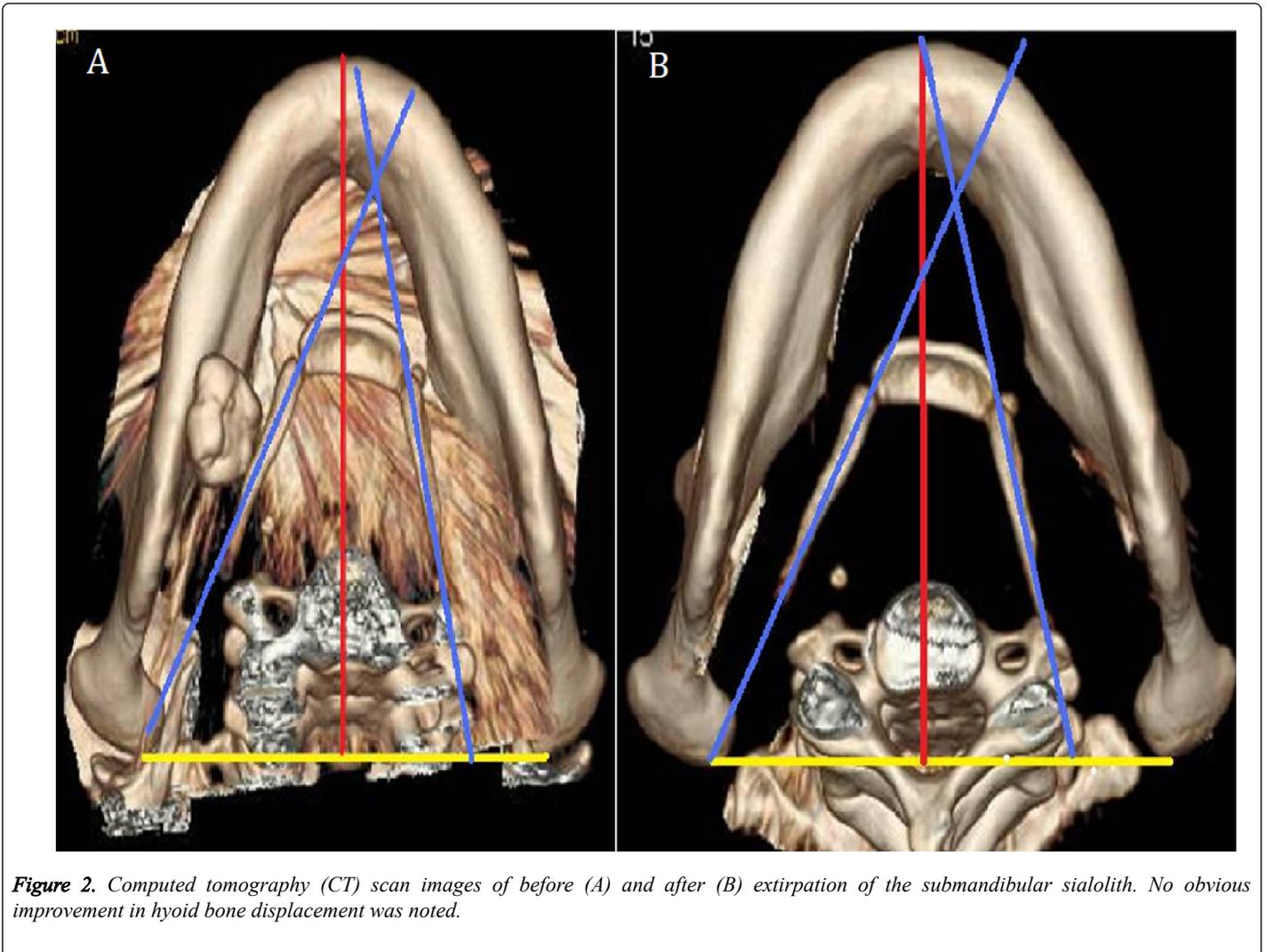
of the hyoid bone using CT images before and after surgery. The reference line was defined as the line passing through the menton and midpoint of the line passing through the most posterior points of both condyles. Rotational displacement of the hyoid bone was indicated by the angle measured between the long axis of the cornu majus and the reference line (preoperative, 28.5°; postoperative 30.0°).



**Figure 1.** Three-dimensional computed tomography (CT) scan image shows the presence of a sialolith on the inner side of the body of the right mandible. Displacement of the hyoid bone is observed on the non-affected side.

The horizontal displacement of the hyoid bone was measured as the distance of a perpendicular line from the midpoint of the most anterior border of the bone to the reference line (preoperative, 3.0 mm; postoperative, 2.5 mm). These findings suggested that the rotation and horizontal displacements of the hyoid bone at rest were not significantly improved (Figure 2).

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**Figure 2.** Computed tomography (CT) scan images of before (A) and after (B) extirpation of the submandibular sialolith. No obvious improvement in hyoid bone displacement was noted.

### Discussion

Sialoliths are most frequently seen in the submandibular gland. They vary in size from less than 5 mm to more than 10 mm in diameter, while their weight can vary from less than 0.5 g to more than 1.0 g [1-4,5-7]. In this report, we have described a case of a giant submandibular gland sialolith measuring 24 mm in length and weighing 4.7 g in a patient presented with dysphagia as the only complaint.

Dysphagia was present when the patient brushed his teeth or slurped his noodles. Mechanical disorders of the oropharyngeal area sometimes occur dysphagia. Anatomical anomalies, abscess in the retropharyngeal space, infections and neoplasms of the oropharyngeal area, and lesions localized in the tongue base may cause dysphagia [2,8]. There are a few reports of patients who complained of dysphagia along with submandibular or sublingual gland sialolithiasis [2,3,9]. In two studies, dysphagia and speaking difficulty were caused due to the presence of giant or multiple sublingual gland sialoliths [2,3]. Pasquale et al. [9] reported a case of dysphagia as a result of chronic submandibular swelling, which was caused by a sialolith in the submandibular salivary gland. The patients in these cases presented with dysphagia caused by a sublingual or submandibular swelling. In contrast, the patient in the present report had dysphagia without any swelling in the sublingual or submandibular region.

In the present study, it was difficult to ablate the submandibular gland from the surrounding soft tissue during the surgical procedure; hence, the long-term existence of chronic inflammation around the sialolith was suspected. However, no swelling or tongue compression was noted in the patient. To the best of our knowledge, this is the first report of a patient with submandibular sialolithiasis presenting with dysphagia as the only symptom, without any sublingual or submandibular swelling.

As seen in the preoperative CT scan, the sialolith was in close proximity to the hyoid bone. Thus, disturbances in the movement of the hyoid bone due to the sialolith may account for the occurrence of dysphagia in the patient. Although there is no swelling of soft tissue and no compression of the tongue by the sialolith, dysphagia could occur depending on the shape or location of the sialolith without other symptoms of common submandibular sialolithiasis.

The symptom of dysphagia had disappeared after extirpation of the sialolith. It is believed that there was an improvement in the movement of the hyoid bone during swallowing.

Nevertheless, improvement in hyoid bone displacement at rest was not confirmed via CT scanning ten months after the surgical procedure. In general, when the hyoid bone is displaced due to soft tissue swellings such as phlegmon, the

condition is restored to normal when the swelling subsides. The absence of an improvement in hyoid bone displacement at rest position in the present case study may be due to fixation of the hyoid bone. The course of the muscles surrounding the hyoid bone might have been altered due to the long-term existence of the sialolith along with the presence of chronic inflammation.

### Conclusion

Here, we describe the case of a patient presented with submandibular sialolithiasis and dysphagia. The absence of other symptoms such as pain, soft tissue swelling, or tongue compression indicates that dysphagia may have occurred due to disturbances in hyoid bone movements caused by large sialolith.

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### Ethical Approval

No ethical approval was required for this study.

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