

Oral Stings Caused by Sperm Bags of Squid

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ABSTRACT

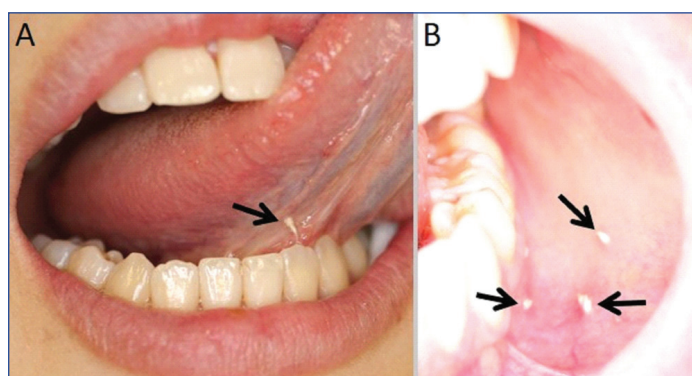
With the increasing global popularity of Japanese delicacies made of raw seafood, such as sashimi and sushi, sufficient attention should be paid to the conditions caused by raw-food consumption. It is recognised that in ingesting raw squid, bacterial or planktonic toxin, and anisakid larva often cause food-poisoning and anisakiasis, respectively. Oral stings caused by sperm bag of squid are rare. A 21-year-old female had severe pain in her oral cavity immediately after eating a raw squid (*Todarodes pacificus*), and consulted the department of oral and maxillofacial surgery. Oral examination showed several small whitish, club-shaped foreign bodies stuck in the surface of the floor of mouth and left buccal mucosa. Because the removal with forceps was difficult due to the tight attachment to the mucosa, foreign bodies were removed completely using forceps with slight incisions under local anaesthesia. The stings were diagnosed as a sperm bag of squid.

Keywords: Floor of the mouth, Larva, Seafood

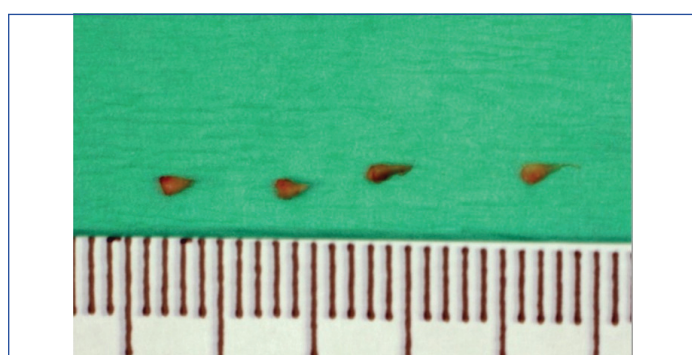
CASE REPORT

A 21-year-old female had an acute severe sharp pain in her oral cavity immediately after eating a raw squid (*Todarodes pacificus*), and consulted the department of oral and maxillofacial surgery of the hospital one hour later. There was no significant medical history. There were no gastric or intestinal symptoms.

Oral examination showed several small whitish, club-shaped foreign bodies on the surface of the floor of mouth and left buccal mucosa [Table/Fig-1a,b]. Because the removal with mosquito forceps was difficult for tight attachment to the mucosa, these were removed completely with slight incisions under local anaesthesia. The stings were later found to be sperm bag of squid [Table/Fig-2].



[Table/Fig-1]: Oral stings by sperm bags of squid (Arrows). a) Floor of mouth; b) Left buccal mucosa.



[Table/Fig-2]: Removed sperm bags of squid. One long bar to another long bar is 5 mm.

DISCUSSION

Sashimi and sushi are few among the popular seafoods that are made of raw seafood [1]. It is recognised that ingesting raw squid, bacterial or planktonic toxin, and anisakid larva often cause food-poisoning and anisakiasis, respectively [2].

Surgeons sometimes encounter foreign bodies in the oral cavity, but foreign bodies during eating are very rare [1]. Oral stings caused by sperm bags of squid are very rare [1-4]. As a much rarer case Nakashima H et al., reported gastric stings caused by sperm bags of squid [3]. The sperm bag constitutes an outer tunic, sperm mass, cement body, ejaculatory apparatus and some fluid [5]. The genital organ of a mature male *T. pacificus* is its right fourth arm. The sperm bag is pressed against the female by the squid when the ejaculatory apparatus releases the bag and cement body attaching itself to the female. If a squid having sperm bag and an ejaculatory apparatus is consumed, ejection of the bag occurs injuring the oral mucosa [1]. In the present case, sperm bags of *Todarodes pacificus* were released by mechanical chewing of raw squid and stuck into her oral mucosa.

Anisakiasis also is known to be caused by the ingestion of raw seafood, and is typically classified into gastric, intestinal, and ectopic anisakiasis, though 95% of cases are gastric in nature [6]. Acute symptoms including nausea, vomiting, epigastric pain, and low-grade fever typically begin 2–12 hours after the ingestion of the infected seafood [6]. Gastrointestinal anisakiasis accounts for more than 99% of the cases [7]. Ectopic or extragastrointestinal anisakiasis is very rare and includes cases involving the oral mucosa, tonsil, pleural cavity, subcutaneous tissue, and parametrium [6,8,9]. Anisakis is a parasite with an average length of 20–30 mm and a width of 0.4–0.6 mm [10]. In contrast, the sperm bag of squid is slender and cylindrical, about 30 mm in length and about 1 mm in diameter [5]. Therefore, anisakis and sperm bag of squid in the oral cavity can be distinguished by the size.

CONCLUSION(S)

It is important to distinguish between sperm bag and anisakis by the shape and size. Although oral stings by spermatophores of squid as foreign bodies are very rare, this case suggests that surgeons and physicians should have knowledge of oral stings by sperm bags immediately after eating raw squid.

REFERENCES

- [1] Shiraki Y, Kawai K, Kojima S, Suzuki Y, Ono K. Stinging in the oral cavity caused by ingestion of the sperm bags of a squid: A case report. *Pathol Int.* 2011;61:749-51.
- [2] Nagakura K, Nakano M, Kanamaru M. Two cases of oral-stings by sperm bag of squid. *Tokai J Exp Clin Med.* 1992;17:195-97.
- [3] Nakashima H, Akagi M, Miyabe S, Iwasawa H. Two unusual cases of a foreign body in the oral cavity caused by eating raw squid. *Acta Otolaryngol Suppl.* 1996;522:104-07.
- [4] Park GM, Kim JY, Kim JH, Huh JK. Penetration of the oral mucosa by parasite-like sperm bags of squid: A case report in a Korean woman. *J Parasitol.* 2012;98:222-23.
- [5] Takahama H, Kinoshita T, Sato M, Sasaki F. Fine structure of the spermatophores and their ejaculated forms, sperm reservoirs, of the Japanese common squid, *Todarodes pacificus*. *J Morphol.* 1991;207:241-51.
- [6] Choi SK, Kim CK, Kim SH, Jo DI. Anisakiasis involving the oral mucosa. *Arch Craniofac Surg.* 2017;18:261-63.
- [7] Hajjar R, Chakravarti A, Malaekah H, Schwenter F, Lemieux C, Maietta A, et al. Anisakiasis in a Canadian patient with incarcerated epigastric hernia. *IDCases.* 2020;20:e00715.
- [8] Kumagai K, Hirose Y, Yoshida S. Woman with foreign body on her tongue. *Ann Emerg Med.* 2018;72:e121-22.
- [9] Takano K, Okuni T, Murayama K, Himi T. A case study of anisakiasis in the palatine tonsils. *Adv Otorhinolaryngol.* 2016;77:125-27.
- [10] Noh JH, Kim B, Kim SM, Ock M, Park MI, Goo JY. A case of acute gastric anisakiasis provoking severe clinical problems by multiple infection. *Korean J Parasitol.* 2003;41:97-100.

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