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OK-432 injection therapy for plunging ranula

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Abstract A 31-year-old woman had a ranula of the right sublingual salivary gland for 2 years. It gradually extended into the right parapharyngeal space and it was treated with intralesional OK-432 injections. After aspiration of 2 ml of the fluid, 2 ml of OK-432 (0.5 KE) was injected. A pyrexia of 39°C was observed over the first 2 days and a mild fever continued for the following 4 days. She had general fatigue and local pain for the first 2 days; the pain was controlled by oral analgesics. This mild swelling gradually settled and disappeared at 1 month post-injection. At 3 months post-injection an MRI scan confirmed resolution of the lesion. At 1 year there was no evidence of recurrence.

Keywords Ranula · OK-432 · Injection · Side effect

Introduction

Ranula is a salivary retention cyst in the oral floor and it originates from the sublingual salivary glands. It can enlarge considerably and may “plunge” down into the parapharyngeal space [1, 4]. Although surgical extirpation is thought to be the best treatment, massive lesions sometimes require a significant surgical procedure [2]. In such a lesion, OK-432 (Chugai Pharmaceutical Co. Ltd., Tokyo, Japan) injection therapy was used. OK-432 is an agent made from a penicillin-killed and lyophilized preparation of a low-virulence strain of group A *Streptococcus pyogenes* [7]. It is manufactured from the extract of the bacterial culture. When injected, it causes an immunological response with associated local inflammation and subsequent tissue shrinkage. A case of plunging ranula successfully treated with OK-432 is presented and the side effects are discussed.

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Case report

A 31-year-old woman presented with a ranula of 2-year's duration in the right sublingual salivary gland. It gradually plunged down into the right parapharyngeal space. Initially aspiration was used instead of surgical extirpation. In spite of five aspirations over a period of 2 years, the cyst recurred (Fig. 1).

On admission, OK-432 injection therapy was instituted. After aspiration of 2 ml of the cyst fluid using an #18 gauge needle and disposable syringe, 2 ml of OK-432 (0.5 KE) was injected. Over the first 2 days a temperature rising to 39°C was noted. This was due to the immunological response and only lasted for the first 2 days. A mild fever was present during the following 4 days. Over the first 2 days there was general fatigue and local pain. The latter was well controlled by oral analgesic. There was mild swelling of the floor of the mouth which lasted for a week, but this did not interfere with feeding. On the eighth day she was discharged from hospital. This mild swelling gradually settled down and disappeared a month after the injection. Three months after the injection the lesion had disappeared and this was confirmed by MRI investigation (Fig. 2). After 1 year there was no recurrence.

Discussion

Ranula is a retention cyst of the sublingual salivary gland which sometimes extends deeply into the floor of the mouth or neck. Although surgical extirpation is thought to offer the best solution for this condition, massive lesions require a significant surgical procedure. Because of this, non-surgical treatment is desirable for massive cyst and it is frequently used. [8]. We have reported successful injection therapy for ganglia [9], this was also found to be satisfactory in the retention cyst of the lip in relation to the minor salivary glands (personal observation).

OK-432 was developed as an immunopotentiator for malignant disease therapy [7]. It stimulates several immunocompetent cells and induces multiple cytokines. It causes the injected lesion to become inflamed and subsequently it shrinks. OK-432 therapy for lymphangioma is now established as an alternative method to surgical excision [5, 6]. It was felt that in this case the penetrating ranula would disappear by the same mechanism observed in lymphangioma or ganglia therapy.