

A Local Steroid Injection Method for Olfactory Loss due to Upper Respiratory Infection

Keijiro Fukazawa

Department of Otorhinolaryngology, Hyogo College of Medicine, 1-1 Mukogawa-cho, Nishinomiya City, Hyogo 663-8501, Japan

Correspondence to be sent to: Keijiro Fukazawa, e-mail: fukazawa@hyo-med.ac.jp

Key words: olfactometer, olfactory loss, phantosmia, steroid, troposmia, upper respiratory infection

Introduction

Upper respiratory infection (URI) is a common causative disease of olfactory loss. Although a method for the treatment for olfactory loss after URI has not been established, corticosteroid has usually been used for patients in Japan. A steroid drop method has been widely used as a means of steroid administration, or corticosteroid has been orally administered. The steroid nasal drop method has the advantage of requiring only a small amount of steroids. In this method, patients must let their head lean back. This position is not be comfortable for patients, it is quite difficult to direct the steroid solution to the olfactory cleft and patients must administer the drops themselves every day. So, the steroid dose depends on the patient and is imprecise. On the other hand, when steroids are administered orally, the patients are guaranteed a steroid effect. But patients must take a relatively high dose and it can be problematic for patients with a gastric ulcer or another complications.

Therefore, we have introduced a new method—local injection of steroids (Fukazawa *et al.*, 1999).

Patients

In our hospital, we treated 630 patients with olfactory disturbance from 1995 to 2001. One hundred and sixty-two of 630 patients (25.7%) presented olfactory loss after URI. URI was the second causative disease of olfactory disturbance. One hundred and thirty-three of the 162 patients were treated by our new method. They were 24 males and 109 females with a mean age of 56.9 years. None of them had rhinosinusitis or allergic rhinitis.

Method

The new method involved injecting the steroid into the nasal mucosa near the olfactory cleft (Figure 1). The advantage of this method is the need for only a small amount of steroids, as in the nasal drop method; additionally, the steroid was certainly administered. Suspended steroid was used for this method because the steroid suspension should be slowly spread in the nasal mucosa near the olfactory cleft, thus being effective at the local area. Dexamethasone acetate suspension or betamethasone sodium acetate suspension (5 mg/2 weeks) were used in this therapy. We injected the steroid eight to ten times at intervals of 2 weeks, in principle. When olfactory loss improved earlier, we ended the therapy at that time. Olfactory acuity was measured with T&T olfactometer (Toyota *et al.*, 1978). When the averaged recognition threshold decreased more than one point, we considered that olfaction was improved. Subjective symptom was evaluated with the visual analogue scale (VAS) (McCormack *et al.*, 1988).

Results

The improvement rate just after the treatment was 49.6%. The mean points of VAS improved from 10.2 ± 18.5 (SD) at pre-treatment to 39.5 ± 29.3 (SD) after the treatment. No major complications resulted from this method.

Discussion

First of all, one should consider the characteristics of olfactory loss after URI. (i) Olfactory loss after URI occurs suddenly. Most patients present olfactory loss after they having URI. (ii) Many patients present anosmia or severe hyposmia. In our experience, ~70% of patients present severe hyposmia or anosmia as measured by T&T olfactometry. (iii) Flavor disorder is seen in ~18% and in ~33% patients this is accompanied by taste disorder. (iv) Some patients present troposmia (~16%) or phantosmia (~7%). (v) The olfactory clefts are usually normal.

How, then, do we treat olfactory loss after URI? If it is soon after URI, we can expect a strong steroid effect on the inflammation of the olfactory cleft. But, if treatment is attempted a long time after the URI, how effective will the steroids be? Hitherto, there has not been an established method of treatment of olfactory loss after URI. In Japan, steroids have generally been used for the treatment, although it was not clear how steroids act. On the other hand, it is a fact that there is not an effective therapy that should be employed. In this study, we found that there was improvement in half of the patients.

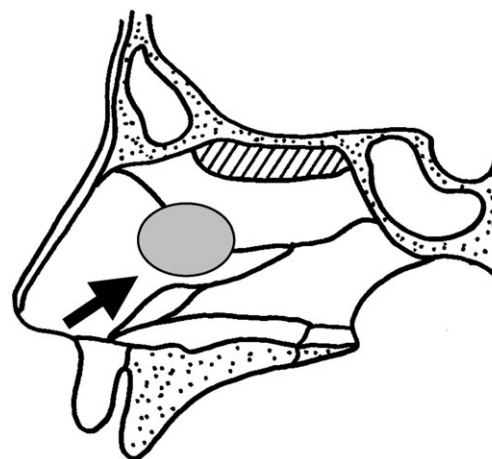


Figure 1 The injection site at the nasal septum. Steroid suspension was slowly injected into the round area (arrow).

There is a possibility of spontaneous remission in some patients, so further study will be needed.

References

- Fukazawa, K., Fujii, M., Tomofuji, S., Ogasawara, H., Seo, W. and Sakagami, M.** (1999) *Local injection of dexamethasone acetate suspension into the nasal mucosa in cases of olfactory disturbance*. *J. Otolaryngol. Jpn.*, 102, 1175–1183 [in Japanese].
- McCormack, H.M., Horne, D.J. and Sheather, S.** (1988) *Clinical applications of visual analogue scales: a critical review*. *Psychol. Med.*, 18, 1007–1019.
- Toyota, B., Kitamura, T. and Takagi, S.F.** (1978) *Olfactory Disorders—Olfactometry and Therapy*. Igaku-Shoin, Tokyo.