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Case Report

Autologous blood injection into the articular cavity for the treatment of recurrent temporomandibular joint dislocation: a case report

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Abstract: Autologous blood injection around the articular capsule and/or into the articular cavity, which is one of the treatments for recurrent temporomandibular joint dislocation, was recently reintroduced. Here, we present the management of recurrent temporomandibular joint dislocation by autologous blood injection in an 84-year-old female. After the treatment, although the right condylar process had settled just beneath the articular tubercle, the dislocation had improved and the patient was able to close her mouth without difficulty. (J. Oral Sci. 49, 237-239, 2007)

Keywords: autologous blood injection; temporomandibular joint; recurrent temporomandibular joint dislocation.

Introduction

A number of techniques have been advocated for the treatment of recurrent temporomandibular joint (TMJ) dislocation (1). The injection of sclerosing solution around the articular capsule and/or into the articular cavity has been proposed as a non-surgical treatment (2), but unfavorable side effects have prevented its more widespread use (1). Autologous blood injection around the articular capsule and/or into the articular cavity has also been previously described (3,4), and this treatment was recently reintroduced (5-7). Autologous blood injection is a simple treatment yet clinical cases have rarely been reported in the literature. The reason for its lack of popularity is unclear, but it has been speculated that blood injected into the articular cavity may cause articular cartilage degeneration (8). Here, we present the case of an 84-year-old female with recurrent TMJ dislocation who was treated with autologous blood injection.

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Case Report

An 84-year-old female was referred to our clinic with symptoms of frequent dislocation of the TMJ on both sides. Eighteen months before, she had suffered from cerebral hemorrhage and had received ventricular drainage and a ventriculoperitoneal shunt. Subsequently, she had undergone gastrostomy placement to improve feeding, but she was also able to take small amounts of pureed food orally. She had been living in a nursing hospital for rehabilitation after her cerebral bleeding. Five months before attending our clinic, she had suffered dislocation of both TMJs, for the first time, while yawning. Since then, she experienced frequent dislocation, and her mandible was fixed with an elastic bandage. She was noted to exhibit subconscious wide mouth opening, with repeated dislocation, sometimes more than five times a day. Reduction of the dislocation was difficult, and required treatment at a nearby clinic. At this point, the doctor referred the patient to our clinic.

When she visited our clinic, slight dementia was apparent but she appeared otherwise healthy (Fig. 1). Oral examination revealed that she was edentulous and wore full upper and lower dentures. When the mouth was wide

open, dislocation of both sides of TMJ occurred easily. Oral dyskinesia was not apparent.

The patient and her family were not willing to undergo surgical treatment for the dislocation, so it was decided to treat the recurrent dislocation by autologous blood injection. The procedure was performed under local anesthesia in an outpatient clinic, as previously described (5). Local anesthetic (1% lidocaine) was injected into the periauricular region, and a 21-gauge needle was inserted into the superior articular cavity of each TMJ. Subsequently, 10 ml of peripheral blood was collected from a peripheral vein. Of this, 3 ml was injected into the superior articular cavity and 1 ml was injected into the tissue around the articular capsule of both TMJs (Fig. 2). The mandible was fixed with a bandage and she returned to the nursing hospital. The first night after the injection, she had subluxation while yawing but was able to reposition it herself. Further subluxations occurred over the next several days, but then ceased. Use of the bandage was continued for one month as a precaution. Though she was able to close her mouth without difficulty, radiographs taken five months later revealed that her right condylar process was located beneath the articular tubercle (Fig. 3). As it was difficult to correct the position of the condylar process and it did not seem to affect her daily life, i.e., feeding via the mouth, it was decided not to perform further treatment.

Fig. 1 Initial view of the patient showing the fixation with an elastic bandage.

Discussion

Autologous blood injection is a simple, and minimally invasive method for the treatment of recurrent TMJ dislocation (5). An operator who has experience in pumping

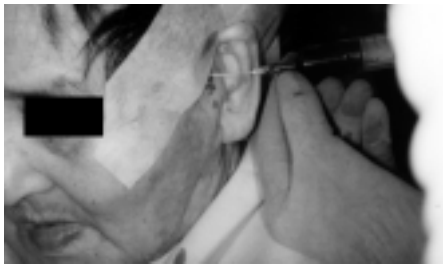

Fig. 2 Intraoperative view showing the injection of autologous blood into the superior articular cavity.

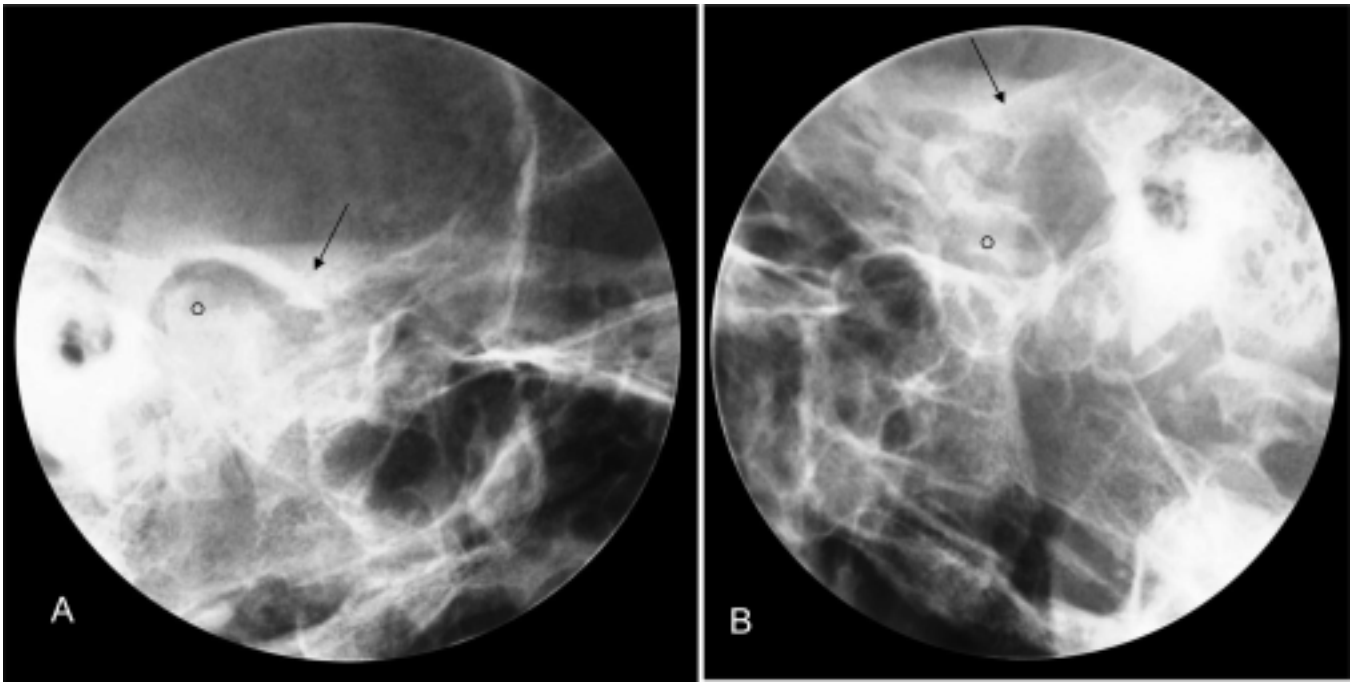

Fig. 3 Postoperative radiographs taken five months later. (A) The right condylar process (○) is in the right position (arrow indicates the articular tubercle). (B) The left condylar process (○) is located beneath the articular tubercle.

manipulation of the temporomandibular joint can easily perform this technique. It can be safely carried out under local anesthesia in an out-patient clinic, and repeated treatment can be performed with minimal complications (3).

In the case of pericapsular injection, Schultz (3) has reported the outcome of 16 cases. Ten cases were free of symptoms after 1 year of follow-up, 7 after 2 years of follow-up, and 5 after 5 years of follow-up. Jacobi-Hermanns et al. (4) reported the treatment in 19 cases. Eighteen months postoperatively, while 3 cases had temporary subluxation, 17 cases were free of symptoms with a decrease in maximal mouth opening. Hasson et al. (5) used both pericapsular and articular cavity injection and reported that, although one of the 4 cases had a single episode of subluxation, the remaining 3 were symptom-free with normal mouth opening during a follow-up period of 1 to 3 years. In all these published reports, no complication was recorded during the follow-up period. Hasson et al. (5) advocated the use of an elastic bandage post-operatively for the first 24 h, and restriction of mandibular movement for 7 days. In our case, though the dislocation had improved, a unilateral condylar process had settled in an inappropriate position, and we also recognized the importance of initial restriction in the right position.

The main aim of autologous blood injection is to limit mandibular movement (3-5). The proposed mechanism of action is that blood injected into the pericapsular region would result in formation of a local bed for fibrous tissue, and that blood injected into the superior cavity of the joint, combined with the blood of pericapsular tissue, might lead to the formation of adhesions in the cavity. The influence of blood on the articular cartilage has been debated. Some researchers have claimed that even a short, single exposure of cartilage to blood results in long-lasting changes in chondrocyte metabolism that might eventually lead to cartilage destruction (8), while others have found that cartilage changes were temporary, with no permanent damage (9).

There are few reports of clinical use of the autologous blood injection, supposedly since its mechanism of action is unclear and blood injection into the articular cavity could potentially result in degeneration of the articular cartilage. Until these concerns are addressed, this procedure should not be used routinely in younger individuals with a longer lifespan, or in patients with articular degeneration, such as those with rheumatoid arthritis.

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