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Case Report

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Conservative Treatment of Temporomandibular Joint Meniscus Perforations

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When normal functioning of the temporomandibular joint is disrupted by a trauma, a pathological process, or excessive intraarticular pressure, perforations of the disc may occur. Surgery, repositional appliances or splints and using the patient's adaptive response are the main choices of treatment. The patient's age, general health and the extent of discomfort are the main factors in selecting the treatment. Since surgery is a relatively aggressive procedure, other treatment procedures should be attempted first. In this case report, presented a conservative application and the outcome of treatment.

Key words: Temporomandibular joint perforation, conservative treatment

Introduction

Perforations of the temporomandibular joint disc are the structural incompatibilities of the articular surfaces that can originate from any problem that disrupts normal joint functioning. This problem may be a trauma, a pathological process or in some cases it may be excessive static intraarticular pressure (Okeson, 1989; Graham *et al.*, 1984).

Temporomandibular joint disc (TMJ) is not of the same histological structure as the condyle and the fossa articular is of temporal bone, which are made up of fibrotic connective tissue, undifferentiated mesenchymal cells, cartilage and bone. The disc is of fibrotic structure and thinning of the disc, due to continuing destructive change may result in perforation. This may alter internal hydrodynamic action of the synovial fluid and predispose to disc fracture (Bell, 1990). Perforation may occur in the posterior attachment tissue or within the meniscus without reduction (Dolan *et al.*, 1989; Tucker *et al.*, 1986).

Crepitus is a clinical indication of meniscal perforation or its posterior attachment (Dolan *et al.*, 1989). The main choices in the treatment of intraarticular problems are repositioning the mandible, using the patient's adaptive response and surgery (Okeson, 1989; Dawson, 1989).

Repositional appliances or splints, are used to unload the masticatory forces coming to the temporomandibular joint and changing the structural condyle-disc relationship. Instead of considering irreversible procedures, muscle relaxation should be established with a repositional appliance first and pain relieved (Mc Neill, 1990; Molness *et al.*, 1987).

Case report: This case was referred to Ege University, Faculty of Dentistry for pain in the temporomandibular joint.

Complaint: Normal, healthy appearing 68 year old woman, complained of pain localized in the left TMJ, crepitation during opening, limitations on opening and during chewing and pain reflecting to shoulder and back.

History: Patient had been using total upper and lower dentures, with reduced vertical height, for twenty years. Her pain had increased for the past 6 months. She had used antirheumatismal drugs, but they did not bring any long term relief.

Clinical examination

Pain: Localized pain in the left joint and pain during lateral palpation.

Range of motion: Maximal opening was 38 mm and there was a left deviation of 2.5 mm.

Clinical diagnosis: Tentative clinical diagnosis was a deformation in the left TMJ disc.

Magnetic resonance imaging: T1 weighed sagittal images reflected a fragmented disc in closed mouth position. The open mouth images showed that the left meniscus had lost its normal morphology and was fragmented (Fig. 1).

Diagnosis: Disc perforation in the left TMJ.

Treatment: Considering the patient's age and her general health condition, the treatment alternative chosen was to use the patients adaptive response. A repositional splint that increased the vertical height and repositioned the mandible anteriorly, was used on the upper dentures. The patient was advised to use the splint for twenty-four hours a day except for meals (Fig. 2 and 3). On the first visit 15 days later, the patient's continuing pains had ceased. After a month, the vertical height of the occlusal splint was reduced. In the following visits, the patient's complaints were nonexistent. New upper and lower dentures in the position the patient could physiologically open and close, were



Fig. 1: The MRI image of the left (Symptomatic) TMJ in open mouth position



Fig. 2: The interocclusal splint of the patient that was fitted on her upper dentures



Fig. 3: The intraoral view of the splint

constructed. The stability of the dentures was established with bilateral balanced occlusion, using the T-Scan occlusal analyzer (Okeson, 1989; Tucker *et al.*, 1986). In the follow up period of 16 months, the patient has been seen periodically and she does not have any complaints.

Discussion

In most cases, alterations in form can be adequately managed by patient education. The patient should be encouraged, when possible, to learn a manner of opening and chewing that avoids or minimizes the dysfunction. Deliberate new opening or chewing strokes can become habits if the patient works toward this goal (Okeson, 1989; Dawson, 1989). If the condition becomes intolerable, surgery may be required (discectomy) (Bell, 1990; Hsu *et al.*, 1992). If the disc is perforated or misshapen, it is repaired (meniscoplasty). Since surgery is a relatively aggressive procedure, it should be considered only when pain and dysfunction are unmanageable (Okeson, 1986).

The patient's age, general health and the extent of his discomfort are the main factors in selecting the type of treatment. An occlusal splint that decreases the loads on the TMJ and provides a space for the disc should be considered first in the treatment of discal perforations. Prosthetic and gnathological needs of the patient are then provided using the patient's adaptive response. These should be considered before irreversible procedures (Okeson, 1986; Dawson, 1989).

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