INTRODUCTION
Prosthetic management of partial edentulism can be challenging with the presence of limited interocclusal space. Over time, edentulous areas that are not restored may lead to drifting, tipping, rotation, and supraeruption of neighboring and/or opposing teeth.\(^1\)\(^3\) The extrusion of opposing teeth in combination with the alveolar extrusion of the edentulous areas reduce the space needed for fabricating a removable or fixed prosthesis when the edentulous areas are present in maxilla.\(^4\) Regaining the lost interocclusal space is a requirement for a successful prosthetic treatment for these cases.\(^2\)\(^6\) Also, interarch distance dimension must be clearly visualized prior to implant placement.\(^7\) Several approaches, such as no treatment, restoration with a shortened prosthesis, intrusion of the extruded teeth, posterior maxillary alveoloplasty, or the reduction of the extruded teeth (which may require endodontic treatment and periodontal surgery) have been proposed for the extension of interocclusal space.\(^2\)\(^4\)\(^8\)\(^9\) The clinical situations in combination with the desires of the patient are the critical factors in selecting the appropriate treatment option.\(^3\)

The combined surgical and prosthetic treatment of a partially edentulous case with limited interocclusal space will be presented in the following clinical case report.

CASE REPORT
A 45-year-old female patient presented to the Department of Prosthodontics, Istanbul University, for prosthodontic treatment of the missing maxillary left posterior region (Figure 1). Clinical photos (Figures 2a and 2b), radiographic (Figure 3) examination, and mounted diagnostic casts (Figure 4) showed severe alveolar extrusion of the maxillary left posterior segment and a slightly reduced vertical dimension of occlusion (VDO).

The treatment was started by increasing the VDO by adjustment of the occlusal plane of the mandibular teeth. A Chromoscope Shade Guide (Ivoclar Vivadent) was used to select an appropriate shade, and then the worn mandibular right posterior teeth were prepared with supragingival shoulder margins for ceramic onlays. Preparations were made using an inlay/onlay preparation set (Inlay Preparation Set 4261 [KOMET-Brasseler]). Next, the mandibular left posterior teeth were prepared for ceramic crowns and a definitive impression of the tooth preparations was made using a vinyl polysiloxane (VPS) impression material (Bre-cision [Bredent]). The impression of the opposing arch was made with an irreversible hydrocolloid (Xantalgin [Heraeus Kulzer]). Three ceramic onlays (Figure 5) and a 3-unit metal ceramic bridge with metal occlusal surfaces (in order to gain interocclusal distance) were fabricated in the dental laboratory.
space. Therefore, insertion of 3 dental implants after regaining the adequate interocclusal space by a maxillary alveo-
loplasty would be performed.

A crestal incision throughout the maxillary left edentulous area and vertical releasing incisions were made. A mucoperiosteal flap was elev-
bulated buccally and lingually. Following the alveooplasty (Figure 6), 3 den-
tal implants (Swissplus [Zimmer

The prosthodontic rehabilitation of par-
tially edentulous patients can engen-
der a challenge for the clinician when there is reduced and inadequate inter-
occlusal space. The occlusal scheme may be deformed due to early loss of teeth when the opposing denition supraerupts towards the edentulous space.4 The extrusion of opposing teeth and/or the alveolar extrusion of the edentulous areas reduce the space needed for fabricating the partial den-
ture.4 Before any prosthodontic recon-
struction can commence, lost inter-
maxillary space must be regained.3 Restoring the accurate plane of occlu-
sion can be accomplished by peri-
odontal, orthodontic, conservative restorative, and surgical procedures. Conservative treatment options like no treatment, intruding the mandibular posterior teeth, or periodontal sur-
gery in combination with endodontic treatment were not chosen for the case presented in this article. Since sufficient bone for alveooplasty was available in the maxillary edentulous area, the plane of occlusion in the mandible was corrected by a conser-

ative approach. The mandibular right posterior teeth were restored with ceramic onlays, a relatively con-
servative treatment option, when compared with the alternative choice of full-coverage crown restorations.1,3 The mandibular left posterior teeth were restored with a ceramic bridge because the teeth had been prepared prior to treatment in our clinic.

The use of dental implants to

implants with as little as 4 mm of space from the surface of the implant to the opposing occlusion.12 However, if the crown length is too short, it may nega-
tively affect the aesthetics; especially when the crowns are in the smile line as in the patient presented in this report. The main reason why a screw-

retained implant restoration was not necessary here was the sufficient coro-

Figure 10a. Final view of the patient.

Figure 10b. Cemented ceramic onlays.

Dental) were placed according to manufacturer’s instructions. One stage surgery was chosen; the im-
plants were supplied with healing abutments, and mucoperiosteal flaps were sutured with a close adaptation of the wound margins to the implant shoulders (Figure 7).

Four months later (Figures 8a and

Figure 8b. Panoramic radiograph after the insertion of implants.

Figure 8a. View of the regained interocclusal space.

8b) the gingival formers were re-
moved and a definitive impression was made using VPS material (Becression). Three separate metal ceramic crowns were fabricated on the model (Figure 9) and cemented on the 3 maxillary implants.

The patient was instructed in main-
tenance and hygiene procedures associ-
ated with the fixed dentures. The rou-
tine recall appointments were sched-
uled on a 6-month basis and no compli-
cations occurred during the 4-year fol-

CLOSING COMMENTS

Limitation in interocclusal space is a common problem in prosthodontic den-
tistry. Several approaches have been proposed to solve this problem. The treat-
ment presented here involved a combined prosthodontic and surgical approach in order to gain intero-
cclusal distance allowing a functional as well as aesthetic result. A 4-year fol-

continues on page xx

Figure 9. The implant positions shown on the cast.

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