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Research Article/Özgün Araştırma

# Practical evaluation of unplanned prosthetic dentistry clinic procedures beyond planned prosthetic dental treatments

# Planlanmış protetik diş tedavisi uygulamalarının dışındaki planlanmamış protetik diş kliniği uygulamalarının pratikte değerlendirilmesi

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**Abstract**

**Aim:** The research aims to identify common unplanned prosthetic dentistry clinic practices, assess their effects on clinical workflow and emphasize their importance in routine clinical procedures.

**Materials and Methods:** Patients requiring unplanned prosthetic treatment who presented to the university prosthetic dentistry clinic for emergencies or walk-in appointments between October 2024 and December 2024 were retrospectively analyzed. All procedures were performed by specialist physicians, faculty members, and dentists specializing in prosthetics. Emergency procedures such as crown removal, impact removal, cementation, prosthesis repair, and provisional prosthesis fabrication were recorded.

**Results:** A total of 534 patients were included in this three-month study (October-December 2024). Participants included 197 males and 337 females with a mean age of 61.4±6.23 years. Crown removal procedures were performed in 264 patients (49.4%). Post-delivery complications in removable, partial, or complete dentures included: prosthesis impaction in 85 patients (15.9%), cementation in 125 patients (23.4%), and prosthesis repair in 52 patients (9.7%).

**Conclusion:** Effectively managing and recording unplanned interventions is critically important for increasing patient satisfaction, ensuring uninterrupted workflow, and strengthening coordination in multidisciplinary environments.

**Keywords:** Cementation, Crown removal, Prosthetic dental treatment, Prosthesis impaction, Prosthesis repair.

**Öz**

**Amaç:** Araştırma, yaygın planlanmamış protetik diş kliniği uygulamalarını tanımlamayı, bunların klinik iş akışı üzerindeki etkilerini değerlendirmeyi ve rutin klinik prosedürlerdeki önemlerini vurgulamayı amaçlamaktadır.

**Gereç ve Yöntem:** Ekim 2024 ile Aralık 2024 arasında üniversite protetik diş kliniğine acil veya randevusuz olarak başvuran ve planlanmamış protetik tedavi gerektiren hastalar retrospektif olarak incelendi. Tüm işlemler uzman hekim, öğretim üyeleri ve protez alanında uzmanlaşan diş hekimleri tarafından gerçekleştirildi. Kron sökümü, vuruk alımı, simantasyon, protez tamiri ve geçici protez yapımı gibi acil müdahaleler kaydedildi.

**Bulgular:** Ekim-Aralık 2024 arasındaki üç aylık çalışmamıza toplam 534 hasta dahil edildi. Bu hastaların 197'si erkek, 337'si kadındı. Yaş ortalaması 61.4±6.23 yıl olarak bulundu. Hastaların 264'ünün (%49.4) kron sökümü için başvurduğu gözlendi. Hareketli, parsiyel veya tam protezlerin teslimden sonra oluşan komplikasyonlar arasında 85 (%15.9) hasta protez vuruğu nedeniyle tedavi edildi. 125 (%23.4) hastaya simantasyon uygulandı. 52 (%9.7) hasta için protez tamiri gerçekleştirildi.

**Sonuç:** Planlanmamış, randevusuz müdahalelerin kaydedilerek etkin bir şekilde yönetilmesi, hasta memnuniyetini artırmak, kesintisiz klinik iş akışını sağlamak ve multidisipliner ortamlarda koordinasyonu güçlendirmek için kritik öneme sahiptir.

**Anahtar Kelimeler:** Kron sökümü, Protetik diş tedavisi, Protez tamiri, Protez vuruğu, Simantasyon.

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*Bu makale araştırma ve yayın etiğine uygun hazırlanmıştır.*
*intihal incelemesinden geçirilmiştir.*

## Introduction

Prosthetic dentistry predominantly relies on planned procedures. In multidisciplinary clinical settings, particularly university hospitals, unplanned prosthetic applications significantly consume time in clinical operations. However, while there are no collective complication and clinical case evaluation studies regarding unplanned prosthetic interventions in the literature, there are studies examining certain complications and issues.[1-5]

These procedures, which remain outside of planned appointments and affect clinical workflow, include interventions such as crown removal, adjustment of complete denture impactions, cementation, prosthesis repair, temporary prosthesis fabrication, and overdenture component replacements. Proper planning and implementation of each is of great importance for both short-term and long-term patient satisfaction and prosthetic success.[1,3] For example, crown removal may be necessary, especially for the renewal of failed restorations or to continue restorative treatment. The goal is to minimize damage to dental tissue and preserve the tissue or substructures under the crown.[4] Adjustment of complete denture impactions is one of the most common unplanned prosthetic applications to address patients' pain and discomfort complaints. Identifying high-pressure points on the basal surface of the prosthesis and making correct adjustments increases the retention of the prosthesis and improves patient comfort.[5] The cementation procedure, especially in the placement of temporary or permanent restorations, meets the patient's aesthetic and functional expectations in a short time and ensures the integrity between the tooth tissue and the restoration.[3]

Prosthesis repair is an intervention that needs to be performed quickly and effectively to maintain the patient's function and aesthetics. When repair procedures are carried out with the correct materials and methods for broken or cracked prostheses, they enable the patient to use their prosthesis for a longer period.[5] Additionally, prosthesis relining procedures are frequently used to address adaptation loss resulting from changes in the supporting tissues of the prosthesis and to eliminate related impactions, pain, or incompatibility.[5] Overdenture component replacements help maintain the functionality of the prosthesis and patient satisfaction by addressing problems that may occur over time in implant or tooth-supported prostheses.[6] Temporary prosthesis fabrication reduces the tolerable level of edentulism by meeting the patient's aesthetic and functional needs before planned long-term restorative or surgical procedures or after trauma.[3] These rapid and targeted prosthetic approaches, although not documented as systematically as routine applications, improve general clinical flow and provide positive results in the long term when applied with effective patient management and correct clinical protocols.[1]

This study aims to evaluate the types, frequencies, and purposes of prosthetic treatments other than planned prosthetic cases carried out in the prosthetic dentistry clinic over three months, identifying potential areas for development and recommendations for the future.

## Materials and Methods

### Study design

This is a retrospective, descriptive, cross-sectional study that examined unplanned prosthetic interventions performed in a university prosthetic dentistry department over a three-month period between October 2024 and December 2024. All unplanned procedures documented in this study were performed by qualified practitioners (faculty members, specialized dentists, and postgraduate prosthodontic residents) rather than by undergraduate students. Student clinical training, which follows a structured curriculum of planned procedures, operates separately from the emergency and walk-in service evaluated in this study.

### Study population and sample

Evaluated treatments performed in the Department of Prosthetic Dentistry, İnönü University Faculty of Dentistry prosthetic clinic between October 2024 and December 2024, including procedures consulted by other departments or directly presented by patients

outside of planned procedures. When screening patients, all daily procedures performed over 3 months were evaluated by entering the hospital information management system. Patients who underwent planned dental treatment or try in were excluded from the study. Patients who presented due to complications of previous procedures or who were referred to our department by other departments due to complications that occurred after the procedure were included in the study. Patients whose prostheses were broken during crown bridge removal due to pain or those who received temporary prostheses after prosthesis removal until their turn for treatment were included in the study. All patients aged 18 and over except those attending routine examinations were included in the study. No life-threatening conditions or complications were encountered in any patient. Planned crown removals performed by our department were excluded from the study. Patients who had appointments created by their dentists for prosthesis follow-up and impaction control were excluded from the study. Patients whose temporary prostheses were broken or debonding during prosthesis fabrication were excluded from the study. Patients whose prostheses were relined and repaired during routine checkups by the treating dentist in the last 3 months were excluded from the study. Patients who received temporary prostheses after routine examinations were excluded from the study. The scope of unplanned procedures documented in this study was limited to common prosthetic emergencies managed within a general prosthetic dentistry department. This included complications related to tooth-supported and implant-supported fixed and removable prostheses. For implant-supported prostheses, cement-retained restorations requiring re-cementation were categorized under 'cementation,' while screw-retained prostheses requiring screw tightening, abutment adjustments, or access hole restoration were categorized under 'prosthesis repair.' Specialized procedures, such as temporomandibular joint (TMJ)-specific treatments managed by different departments within our institution, and maxillofacial prostheses, which are managed by appointment, are outside the scope of this study. The fabrication method of the prostheses (conventional vs. computer-aided design (CAD) / computer-aided manufacturing (CAM)) was not recorded, as this does not affect the nature of emergency interventions.

**Data collection tools**

Patient data and procedure numbers were collected. Planned clinical procedures and patient procedures in the prosthetic dentistry department were compared and their places in the clinic were evaluated. The applications in the examined prosthetic dentistry department were listed as; crown removal, adjustment of prosthesis impactions, cementation of prostheses, prosthesis repair and temporary prosthesis fabrication. Each application was evaluated individually and the causes and frequency of the applications were investigated. The data of routine applications and unplanned procedures were compared with the literature to examine what could be done for efficiency.

**Data analysis**

All statistical analyses were performed using IBM SPSS Statistics for Windows, Version 26.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were used to summarize patient demographics and clinical data. Categorical data, including types of unplanned interventions and reasons for crown removal are presented as number (n) and percentage (%). Patient age, a continuous variable, is expressed as mean ± standard deviation (SD). A chi-square test of goodness of fit was used to determine whether the observed frequencies of different unplanned prosthetic interventions differed significantly from each other. Similarly, a second chi-square test of goodness of fit was applied to analyze the distribution of reasons for crown removal. A $p$ value of $<0.05$ was accepted as the level of statistical significance in all analyses.

**Ethics committee approval**

This retrospective study was conducted with the approval of the İnönü University Non-Interventional Clinical Research Ethics Committee (number 2025/7480) and in accordance with the standards of the Declaration of Helsinki.

## Results

A total of 534 patients were included in our study over the three-month period from October to December 2024. Of these patients, 197 were male and 337 were female. The average age of the patients was found to be 61.4±6.23 years. It was observed that 264 (49.4%) of the presenting patients came for crown removal procedures. When evaluating the procedures applied to patients presenting to the prosthetic dentistry department, approximately half of the procedures in this area were due to crown removal (Table 1). The finding that the most frequently performed procedure among unplanned outpatient clinic interventions is crown removal is statistically significant ($p$<0.001) (Table 2). The crowns of 55 (20.8%) patients referred to the prosthetic dentistry department from the oral diagnosis department with pain complaints were removed to investigate decay under the prosthesis. The most common reason for crown removal was found to be the need for root canal treatment, which was found to be statistically significant ($p$<0.001) (Table 3).

**Table 1.** Causes of crown removal.

| Crown Removal Causes | Number (n=264) | Percentage (%) |
|---|---|---|
| Pain complaint | 55 | 20.8 |
| Root canal treatment need | 122 | 46.2 |
| Abutment tooth extraction | 54 | 20.4 |
| Decay in abutment tooth | 22 | 8.3 |
| Periodontal condition check of abutment tooth | 11 | 4.1 |

**Table 2.** Frequencies of unplanned prosthetic ınterventions.

| Procedure | Frequency (n) | Percentage (%) | 95% Confidence Interval | *p* value |
|---|---|---|---|---|
| Crown Removal | 264 | 49.4 | 45.2 – 53.7 | < 0.001 |
| Cementation | 125 | 23.4 | 19.8 – 27.0 | |
| Denture Pressure Sores | 85 | 15.9 | 12.8 – 19.0 | |
| Prosthesis Repair | 52 | 9.7 | 7.2 – 12.3 | |
| Temporary Prosthesis | 8 | 1.5 | 0.5 – 2.5 | |

**Table 3.** Frequencies of crown removal causes.

| Cause of Crown Removal | Frequency (n) | Percentage (%) | 95% Confidence Interval | *p* value |
|---|---|---|---|---|
| Need for root canal treatment | 122 | 46.2 | 40.2 – 52.2 | < 0.001 |
| Pain complaint | 55 | 20.8 | 15.9 – 25.7 | |
| Abutment tooth extraction | 54 | 20.5 | 15.6 – 25.3 | |
| Caries in abutment tooth | 22 | 8.3 | 5.0 – 11.7 | |
| Periodontal condition check of abutment tooth | 11 | 4.2 | 1.8 – 6.6 | |

For prosthesis impaction, one of the complications that occurred after the delivery of removable partial or complete dentures, 85 (15.9%) patients underwent treatment. When evaluating complete denture impaction patients, it was observed that the majority of patients (71 patients, 83.5%) presented within the first 2 months after prosthesis delivery. Of the 14 (16.4%) patients who had received their prostheses less than a year ago, 8 had impactions after locator component replacement and 6 had impactions after relining.

Cementation was applied to 125 (23.4%) patients for single crowns, long bridges and implant supported prostheses that had become debonded for various reasons. The reasons for cementation application are given in Table 4.

**Table 4.** Reasons for cementation application.

| Cementation Reasons | Number (125 Patients) | Percentage (%) |
|---|---|---|
| Spontaneous debonding | 91 | 72.8 |
| After root canal treatment | 16 | 12.8 |
| After filling procedure | 7 | 5.6 |
| After examination in oral diagnosis | 5 | 4 |
| After tooth extraction | 6 | 4.8 |

It was observed that for most patients with complaints of fracture or incompatibility in their fixed prostheses, repair was not performed; instead, a planned prosthesis renewal procedure was applied. Prosthesis repair was performed for 52 (9.7%) patients. In removable partial and complete dentures,

fracture repair (31 patients, 59.6%), relining (4 patients, 7.6%) and locator component replacement (19 patients, 36.5%) were performed. It was observed that patients who presented for repair after prosthesis fabrication had visited the clinic an average of 4.1±2.3 times. Among patients presenting for prosthesis repair, the newest prosthesis was made 37 months ago, while the longest used prosthesis was made 100 months ago. When evaluating the time to present for locator component replacement after prosthesis fabrication, the average was found to be 41.7±5.65 months.

Temporary prostheses were applied to 8 (1.49%) patients whose prostheses were broken, who had undergone root canal treatment or filling procedures, who had tooth extractions and whose healing process was awaited with an uncertain treatment start time. The number of patients and percentages of other prosthetic procedures performed in our clinic during the same period are shown in Table 5. The numbers in Table 5 indicate the number of patients who underwent the procedures, not the number of procedures.

**Table 5.** Areas of planned prosthesis application and number of patients.

| Planned Procedures | Number (414) | Percentage (%) |
|---|---|---|
| Complete denture | 50 | 12 |
| Removable partial denture | 72 | 17.3 |
| Veneer | 166 | 40 |
| Implant-supported complete denture | 28 | 6.7 |
| Implant-supported fixed prosthesis | 98 | 23.6 |

## Discussion

Although the applications in the operational workflow of prosthetic dentistry clinics defined as unplanned prosthetic procedures may seem less important compared to planned procedures, they have significant effects on clinical efficiency, patient comfort, and multidisciplinary team coordination.[1-3,5,6] Our data showing that 534 unplanned cases occurred over 3 months (averaging 6-7 cases per working day) suggests the need for dedicated emergency slots in the daily schedule to prevent disruption of planned procedures.

Crown removal is a frequently procedure among unplanned prosthetic interventions. The main reasons for this application include secondary caries, gingival recession, marginal discrepancies, and changes in aesthetic needs. According to the literature, situations requiring crown removal may increase approximately 5-10 years after restorative treatment.[4] The level of patients' chewing force, oral hygiene practices, quality of materials used and biological integrity of the tooth affect crown longevity. Among the most important factors leading to crown removal, studies report debonding in metal substructure, resin-bonded bridges.[7] Sundh et al.[8] reported that periodontitis, root fracture and endodontic problems could be causes of failure and could lead to crown removal. Causes that could be defined as failures following crown fabrication and subsequently lead to removal have been reported in the literature with various rates and reasons. In a study by Datta et al.[2], of the 155 total failures observed, 75 (48.39%) were due to biological reasons, 65 (41.94%) were due to mechanical reasons, and 15 (9.67%) were due to aesthetic reasons. In the same study, the majority of 538 prostheses belonged to the traditional fixed partial dentures or crown category (79.93%). Phang et al.[9] reported in their review that in eleven studies, the rate of prosthetic patients requiring endodontic retreatment was 11%. Hämmerle et al.[10] reported that secondary caries developed in 8% of 239 abutment teeth; a total of 8% of abutment teeth were affected by loss of retention, which constituted more than half of all technical problems. When our clinical practice is evaluated, it has been observed that there are more crown removals than daily crown fabrications in patients referred from outside, since the crowns that have been made and accumulated for years are included. Given that crown removal (49.4%) was the most common unplanned procedure, enhanced patient education about warning signs and timely scheduled appointments could reduce emergency presentations.

In our study, the most important reason for crown removal was found to be the need for root canal treatment. Pain complaints due to reasons such as caries and the necessity of

abutment tooth extraction are the following causes.

Prosthesis impactions are among the most frequent problems that occur from the first days after the delivery of removable partial dentures or complete dentures. During this period, deficiencies in the adaptation of the prosthesis to soft tissue, excessive occlusal height or anatomical incompatibilities trigger impactions. It has been reported that impaction complaints increase following the first control examinations (24-72 hours) and are particularly common within the second to fourth week. While patients present with symptoms such as burning, pain and local sensitivity, the prosthesis's contact areas with the mucosa and occlusal contacts are carefully evaluated in the clinic. At this stage, adjusting the prosthesis margins aims to help the patient adapt more comfortably to the prosthesis.[5,11-13] In a study conducted by Hakan et al.[14], satisfaction and complications in patients with complete dentures were evaluated, and the second most common complication in complete dentures was reported to be impaction, also known as mucosal irritation. When compared with the literature, the frequency of mucosal irritation was found to be consistent with other studies.[12,13] Since the deteriorated adaptation of the prosthesis base can cause impaction and loss of retention, it tends to have long edge extensions that need to be reshaped with a relining procedure.[15,16] In our study, the number of patients presenting for impaction is quite high. When evaluating our study, it was observed that the majority of patients presented within the first 2 months after prosthesis delivery. Some patients present for impaction during the re-adaptation process of the prosthesis after relining. The high rate of prosthesis impaction cases (15.9%) presenting within the first 2 months after delivery suggests the need for more structured early follow-up appointments, potentially reducing emergency visits.

Normally, crown cementation is performed within 1-2 weeks after the completion of restorative preparation. Before permanent cementation, the clinician evaluates in detail the periodontal condition of the tooth, gingival health, occlusal fit, and the possibility of marginal leakage. In some cases, temporary cementation is performed to monitor the adaptation of the tooth and patient. Regular follow-up appointments after permanent cementation are of great importance for the patient. It has been widely reported in the literature that fixed prosthetic restorations may need re-cementation or renewal due to various complications within 5-15 years.[4,17,18] A mean debonding rate of 24% was associated with some studies evaluating prostheses for periods exceeding 5 years.[17,18] Debonding was evaluated in relationship to arch, arch location (anterior versus posterior), presence of abutment tooth preparation, gender, age, span length, and occlusal forces. In our study, cementation was most commonly performed after spontaneous debonding.

Prosthesis repair is considered an intervention needed as a result of unexpected trauma or material fatigue, especially in the first 1-5 years period. Cracks, fractures, tooth separations, or deterioration in marginal fit are factors that frequently require prosthesis repair. Dropping the prosthesis or the patient applying excessive force to the prosthesis also triggers situations requiring repair. In cases of recurrent repair needs, complete renewal of the prosthesis is considered as an option. Regular follow-up appointments can extend the life of the prosthesis by addressing cracks or fit discrepancies detected at an early stage with simple procedures.[5] A study conducted in England reported that the fracture rate of removable polymer-based prostheses was as high as 68%.[19,20] Midline fractures appear to be one of the most common problems in maxillary complete dentures.[20] Midline fractures of 34 maxillary complete dentures constituted 29% of all repair work in dental laboratories, while teeth separations from complete dentures constituted 33%.[21] Dentures tend to undergo a seesaw effect around the rigid palatal midline when alveolar crest resorption occurs and the dentures are not relined. Such a failure is most commonly seen in prostheses of approximately 3 years.[22] This situation increases the likelihood of fracture, raising the need for repair. In the current study, according to the results of previous studies, the most common complication was loss of retention (85.9%)

followed by mucosal irritation (44.2%).[13] The high rate of retention loss and mucosal irritation may be due to ongoing bone atrophy. Such atrophy does not only occur on the surface but also includes the height loss of the alveolar ridge. Prostheses tend to have long edge extensions that need to be reshaped with a relining procedure, as the deteriorated adaptation of the prosthesis base can cause impaction and loss of retention.[16] In our study, the number of prosthesis repairs was lower compared to other procedures. It was observed that patients who presented for repair after prosthesis fabrication made an average of 4.1±2.3 visits, and the newest prosthesis among the presenting patients was made 37 months ago, while the longest-used prosthesis was made 100 months ago.

Temporary prostheses help in positioning new restorations and implants that can replace missing teeth in the correct position by ensuring that teeth remain in the correct position until new prostheses are made after tooth extraction and restorative treatments, while meeting patients' aesthetic and functional needs.[23] Temporary restorations also prevent the movement of prepared teeth. Temporary restorations are also important for correct aesthetic, phonetic, and occlusal checks. Well-contoured and well-fitting temporary restorations help maintain and regain the health of periodontal tissues. Interproximal areas should be cleanable.[3,24] In this study, the frequency of temporary prosthesis application was quite low, and the quality of life was tried to be improved by applying it to patients with sudden prosthesis loss, where the time to start prosthesis construction was uncertain.

## Limitations

The fact that our study is not prospective is a limitation. Because of the material used in all patients, the experience of the dentist who applied the prosthesis, and the patient's diseases are not known is a limitation of our study. The fact that it is not known whether the patients in our study received another dental treatment at an external center during the follow-up period and the complications related to this is another limitation of our study. The 3-month study duration represents a limitation of this investigation. Longer-term studies spanning multiple years would better capture seasonal variations, changes in patient demographics, effects of technological advancements, and evolution of clinical practices. This study should be viewed as an initial descriptive investigation that establishes baseline data and methodology for future comprehensive long-term research.

## Conclusion

This study aimed to emphasize the importance of the applications in the unplanned prosthetic dental treatment in the clinical processes and to show the place of unplanned interventions, especially in the prosthetic dentistry department, in addition to planned treatments. In order to generalize the findings and further develop unplanned prosthetic interventions, more comprehensive studies with different populations and long-term follow-ups are needed.

## Ethics Committee Approval

This retrospective study was conducted with the approval of the İnönü University Non-Interventional Clinical Research Ethics Committee (number 2025/7480) and in accordance with the standards of the Declaration of Helsinki.

## Informed Consent

This is a clinical study, and patients were informed and consent was obtained that their data could be used in scientific studies through consents obtained before treatment.

## Author Contributions

Concept/Idea B.Ç.G.; Design B.Ç.G.; Data Collection and/or Processing B.Ç.G., E.M.; Analysis and/or Interpretation B.Ç.G., E.M., F.Ö.; Literature Search B.Ç.G., E.M., F.Ö.; Writing B.Ç.G., F.Ö.; Critical Review B.Ç.G.

## Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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## Peer-review

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## References


1. Goodacre CJ, Bernal G, Rungcharassaeng K, Kan JY. Clinical complications in fixed prosthodontics. *The Journal of prosthetic dentistry*. 2003;90(1):31-41. doi:10.1016/s0022-3913(03)00214-2
2. Datta A, Sandhu HS. Success of fixed partial denture prostheses observed in a military dental centre: A cross-sectional study. *Medical journal, Armed Forces India*. 2022;78(Suppl 1):S206-s212. doi:10.1016/j.mjafi.2020.08.009
3. Bağış B ÇBF, Ustaömer S, Özen B Sabit geçici restorasyonlar. *Atatürk Üniversitesi Diş Hekimliği Fakültesi Dergisi*. 2006 3 42–49.
4. Vasishta P, Sivaswamy V. Crown Removal Methods In Dentistry-A Literature Review. 2021;13(1).
5. Jacobson TE, Krol AJ. A contemporary review of the factors involved in complete denture retention, stability, and support. Part I: retention. *The Journal of prosthetic dentistry*. 1983;49(1):5-15. doi:10.1016/0022-3913(83)90228-7
6. Evtimovska E, Masri R, Driscoll CF, Romberg E. The change in retentive values of locator attachments and hader clips over time. *Journal of prosthodontics : official journal of the American College of Prosthodontists.* 2009;18(6):479-83. doi:10.1111/j.1532-849X.2009.00474.x
7. Miettinen M, Millar BJ. A review of the success and failure characteristics of resin-bonded bridges. *British dental journal*. 2013;215(2):E3. doi:10.1038/sj.bdj.2013.686
8. Sundh B, Odman P. A study of fixed prosthodontics performed at a university clinic 18 years after insertion. *The International journal of prosthodontics*. 1997;10(6):513-9.
9. Phang ZY, Quek SHQ, Teoh KH, Tan KBC, Tan K. A. A retrospective study on the success, survival, and incidence of complications of post-retained restorations in premolars supporting fixed dental prostheses with a mean of 7 years in function. 2020;33(2):176-83.
10. Hämmerle CH, Ungerer MC, Fantoni PC, Brägger U, Bürgin W, Lang NP. Long-term analysis of biologic and technical aspects of fixed partial dentures with cantilevers. 2000;13(5).
11. Bilhan H, Geckili O, Ergin S, Erdogan O, Ates G. Evaluation of satisfaction and complications in patients with existing complete dentures. *Journal of oral science*. 2013;55(1):29-37. doi:10.2334/josnusd.55.29
12. Brunello DL, Mandikos MN. Construction faults, age, gender, and relative medical health: factors associated with complaints in complete denture patients. *The Journal of prosthetic dentistry*. 1998;79(5):545-54. doi:10.1016/s0022-3913(98)70176-3
13. Zitzmann NU, Marinello CP. [Survey of treatment-seeking complete denture wearers concerning tooth loss, retention behavior and treatment expectations]. Schweizer Monatsschrift fur Zahnmedizin = Revue mensuelle suisse d'odonto-stomatologie = Rivista mensile svizzera di odontologia e stomatologia. 2006;116(3):229-36.
14. Akın H, Özdemir AK. Protetik diş tedavisinde manyetik ataşmanlar. *Atatürk Üniv Diş Hek Derg*. 2012; 6:99-109.
15. Atwood DA. Reduction of residual ridges: a major oral disease entity. *The Journal of prosthetic dentistry*. 1971;26(3):266-79. doi:10.1016/0022-3913(71)90069-2
16. Carlsson GE. Clinical morbidity and sequelae of treatment with complete dentures. *The Journal of prosthetic dentistry*. 1998;79(1):17-23. doi:10.1016/s0022-3913(98)70188-x
17. Behr M, Leibrock A, Stich W, Rammelsberg P, Rosentritt M, Handel G. Adhesive-fixed partial dentures in anterior and posterior areas. Results of an on-going prospective study begun in 1985. *Clinical oral investigations*. 1998;2(1):31-5. doi:10.1007/s007840050040
18. Dunne SM, Millar BJ. A longitudinal study of the clinical performance of resin bonded bridges and splints. *British dental journal*. 1993;174(11):405-11. doi:10.1038/sj.bdj.4808186
19. Hargreaves AS. The prevalence of fractured dentures. A survey. *British dental journal*. 1969;126(10):451-5.
20. Darbar UR, Huggett R, Harrison A. Denture fracture--a survey. *British dental journal*. 1994;176(9):342-5. doi:10.1038/sj.bdj.4808449
21. Jagger DC, Harrison A, Jandt KD. The reinforcement of dentures. *Journal of oral rehabilitation*. 1999;26(3):185-94. doi:10.1046/j.1365-2842.1999.00375.x
22. Basker RM, Davenport JC, Thomason JM. Prosthetic treatment of the edentulous patient. John Wiley & Sons; 2011.
23. Koruyucu M, Yaman D, Seymen F, Demirel K, Gençay K. Management of regional odontodysplasia: a 10-year-follow-up case report and literature review. *European oral research*. 2018;52(2):111-116. doi:10.26650/eor.2018.495
24. Gracis S, Fradeani M, Celletti R, Bracchetti G. Biological integration of aesthetic restorations: factors influencing appearance and long-term success. *Periodontology* 2000. 2001;27:29-44. doi:10.1034/j.1600-0757.2001.027001029.x