RESEARCH

Evaluation of Interdisciplinary Communications Between Departments of Prosthodontics and Orthodontics

Filiz Yagci(0000-0002-1917-0822)[α], Taner Ozturk(0000-0003-1670-286X)[β]

Selcuk Dent J, 2021; 8: 186-192(Doi: 10.15311/selcukdentj.747822)

Başvuru Tarihi: 04 Haziran 2020
Yayına Kabul Tarihi: 21 Temmuz 2020

ABSTRACT

Evaluation of Interdisciplinary Communications Between Departments of Prosthodontics and Orthodontics

Background: Prosthodontics and orthodontics are disciplines which frequently need communication during treatments. The aim of this study was to evaluate the interdisciplinary relationship to reveal the most-commonly consulted subjects between departments of prosthodontics and orthodontics in a faculty of dentistry by examining consultation notes.

Methods: Consultation notes of 900 patients who were treated at the Departments of Prosthodontics and Orthodontics, Faculty of Dentistry at Erciyes University, were evaluated. The reasons for the referral of 377 patients from the prosthodontics clinic to the orthodontics clinic, and for the referral of 523 patients from the orthodontics clinic to the prosthodontics clinic were investigated. Furthermore, the frequency of the consultations that were required by specialists and post-graduate students were determined. The data were analyzed using Pearson Chi-Square and Fisher's Exact tests.

Results: The most common reason for consultations was the assessment of the space for implant treatment (prosthodontics to orthodontics: n = 161, 42.7%, and orthodontics to prosthodontics: n = 255, 48.8%). It was determined that the post-graduate students ask for a consultation for many more reasons than did the specialists ($p < 0.05$).

Conclusion: Interdisciplinary relationships were determined from the consultation notes between prosthodontics and orthodontics clinics. According to the results of the present study, it was seen that implant placement sites and esthetic restorations were the basic issues for the interdisciplinary relationship between the two departments. Furthermore, the information provided by the study is thought to be useful for the education of post-graduate students.

KEYWORDS

Consultation, Esthetic, Multidisciplinary communication, Orthodontics, Prosthodontics

ÖZ

Protetik Diş Tedavisi ve Ortodonti Bölümleri Arasındaki Disiplinlerarası İletişimin Değerlendirilmesi

Amaç: Protetik diş tedavisi ve ortodonti, tedavileri sırasında sıklıkla iletişime ihtiyaç duyan disiplinlerdir. Bu çalışmanın amacı, bir diş hekimliği fakültesindeki Protetik Diş Tedavisi ve Ortodonti bölümleri arasında en çok konsülte edilen konuları ortaya koymak için disiplinler arası ilişkiyi konsültasyon notlarını inceleyerek değerlendirmektir.

Gereç ve Yöntemler: Erciyes Üniversitesi Diş Hekimliği Fakültesi Protetik Diş Tedavisi ve Ortodonti Anabilim Dalları'nda tedavi edilen 900 hastanın konsültasyon notları değerlendirildi. 377 hastanın protetik diş tedavisi kliniğinden ortodonti kliniğine; 523 hastanın da ortodonti kliniğinden protetik diş tedavisi kliniğine olan konsültasyon nedenleri araştırıldı. Ayrıca, uzman diş hekimi ve yüksek lisans öğrencileri tarafından istenilen konsültasyon sıklığı da belirlendi. Elde edilen veriler, Pearson Chi-Square ve Fisher Exact testleri ile analiz edildi.

Bulgular: Konsültasyon istenmesinin en yaygın nedeni, implant tedavisi için bulunan/gereken alanın değerlendirilmesiydi (Prostodonti'den Ortodonti bölümüne; n = 161, % 42.7 ve Ortodonti'den Prostodonti bölümüne; n = 255, % 48.8). Yüksek lisans öğrencilerinin bir uzmandan çok daha fazla farklı nedenden dolayı konsültasyon istedikleri belirlenmiştir ($p < 0.05$).

Sonuç: Protetik diş tedavisi ve ortodonti klinikleri arasındaki disiplinlerarası ilişkiler, konsültasyon notları ile belirlenmiştir. Bu çalışmanın sonuçlarına göre, iki bölüm arasındaki disiplinlerarası ilişkinin temel konularının implant yerleştirilecek bölgenin değerlendirilmesi ve estetik restorasyonların olduğu görülmüştür. Ayrıca çalışmadan elde edilen bilgilerin yüksek lisans öğrencilerinin eğitimi için de yararlı olabileceği düşünülmektedir.

ANAHTAR KELİMELER

Protetik Diş Tedavisi, Ortodonti, Konsültasyon, Disiplinlerarası tedavi, Estetik

Meeting the esthetic expectations of patients is one of the most challenging tasks of dentistry and one which has increased with the development of technology and the increase in awareness.[1,2] Especially in the anterior region, congenitally-missing teeth, and/or morphological anomalies of the teeth, are conditions which require esthetic restoration following orthodontic treatment.[3,4] In such cases, aligning teeth to their ideal position using orthodontic methods provides leads to protective[5] and esthetic outcomes.[6,7] In some cases the restoration of an esthetic appearance as well as improvements in function and phonation requires a multidisciplinary approach. If there are missing teeth, and the individual's growth and development is incomplete, the procedure to be applied after orthodontic treatment is to protect the space with a fixed or removable appliance until the growth of the individual is completed.[8,9] In such cases, in

[α] Erciyes University Faculty of Dentistry Department of Prosthodontics Kayseri, Türkiye
[β] Erciyes University, Faculty of Dentistry, Department of Orthodontics, Kayseri, Türkiye

coordination with one another, a prosthodontist and an orthodontist can achieve satisfactory results.[9-11] Therefore, it is important that both clinicians consult with one another to provide appropriate treatment for the patient.[10]

The aims of the present study were to evaluate the subjects of consultation between prosthodontics and orthodontics clinics, and to determine differences in the consultation requests of specialists and post-graduate students.

MATERIALS AND METHODS

This retrospective study was approved by the Erciyes University Clinical Research Ethics Committee (Decision number 2019/895). The consultation notes of the Departments of Prosthodontics and Orthodontics, Faculty of Dentistry, Erciyes University between January 2014 and January 2020 were obtained from the archive (MedData software Bilişim İletişim Sistemleri Proje Danışmanlık Medikal, Ankara, Turkey).

The consultation notes of a total of 900 patients were evaluated; 377 of them had been directed from the prosthodontics clinic to the orthodontics clinic, and 523 of them had been directed in reverse. The patients included in the study consisted of 326 males (mean age = 20.28 ± 7.14) and 574 females (mean age = 22.90 ± 11.48) (Table 1).

Table 1.

Distribution of demographic data (age and number of subject).

	Male				Female				Totally			
	N	Mean±SD	Min	Max	N	Mean±SD	Min	Max	N	Mean±SD	Min	Max
Prosthodontic Clinic to Orthodontic Clinic	127	21.27±8.31	12	55	250	23.86±11.96	13	87	377	22.99±10.92	12	87
Orthodontic Clinic to Prosthodontic Clinic	199	19.64±6.21	9	50	324	22.16±11.06	11	75	523	21.20±9.58	9	75
Totally	326	20.28±7.14	9	55	574	22.90±11.48	11	87	900	21.95±10.20	9	87

N: Number of subject. SD: Standard Deviation. Min: Minimum. Max: Maximum.

While the consultation notes of the patients who were directed from the prosthodontics clinic to the orthodontics clinic were collected under 12 categories, and the consultation notes of the patients directed in the other direction were collected under 11 categories.[6,9,10,12-21] Repeated consultation notes were ignored. In addition, the consulting dentists were categorized as "specialist" (prosthodontists or orthodontists) or "post-graduate student" (at the Departments of Prosthodontics or Orthodontics).

Statistical Analysis

Categorical data were numbered, and percentages were calculated. Pearson Chi-Square test and Fisher's Exact tests were used to analyze the data. Statistical analysis was performed using STATA software (Stata Statistical Software version 15, 2017, StataCorp Texas, USA). The degree of statistical significance was accepted as $p<0.05$.

RESULTS

Assessment of the consultation notes from the prosthodontics clinic to the orthodontics clinic

The most common reason (42.7%) for referring patients from the prosthodontics clinic to the orthodontics clinic was “Providing necessary space for implant treatment” (Table 2). This was followed by “General orthodontic evaluation” with 19.4 % and “Evaluation of dental esthetics” with 9.8 % (Table 2). A significant relationship was found between the referring dentist and the reason for consultation ($p < 0.05$) (Table 2). The ratio of requests for consultation on the part of prosthodontists and post-graduate students were 16.4% and 83.6% respectively (Table 2). In contrast to the other consultation subjects, it was found that only specialists performed “Orthodontic evaluation of the patient with cleft lip and palate (CLP)” consulting note (Table 2).

Table 2.

Evaluation of consultation notes directed from prosthodontics clinic to orthodontics clinic.

Consultation request	Prosthodontist N (%) *	Postgraduate Student N (%) *	Total N (%) *	Pearson Chi-Square Test Value (p value)	Fisher's Exact Test Value (p value)
Evaluation of tooth extraction for prosthodontic restoration	1 (1.6)	5 (1.6)	6 (1.6)		
Orthodontic evaluation due to dental midline shift	1 (1.6)	4 (1.3)	5 (1.3)		
Assessment in terms of dental extrusion	0 (0.0)	5 (1.6)	5 (1.3)		
Orthodontic evaluation of the impacted tooth	3 (4.8)	17 (5.4)	20 (5.3)		
Evaluation of the space available due to tooth deficiency/missing	2 (3.2)	17 (5.4)	19 (5.0)		
Providing of the necessary space for implant treatment	27 (43.5)	134 (42.5)	161 (42.7)		
General orthodontic evaluation	6 (9.7)	67 (21.3)	73 (19.4)	48.554 *(p<0.001)*	34.276 *(p<0.001)*
Evaluation of the occlusion	2 (3.2)	17 (5.4)	19 (5.0)		
Evaluation of the patient's skeletal development period for prosthodontic treatment	6 (9.7)	16 (5.1)	22 (5.8)		
Evaluation of dental esthetics	6 (9.7)	31 (9.8)	37 (9.8)		
Orthodontic evaluation for making obstructive sleep apnea appliance	0 (0.0)	2 (0.6)	2 (0.5)		
Orthodontic evaluation of the patient with cleft lip and palate	8 (12.9)	0 (0.0)	8 (2.1)		
Total N (%) **	62 (16.4)	315 (83.6)	377 (100.0)		

*N: Number of subjects. Statistical significance level: p<0.05. * It shows percentages along the column. ** It shows percentages along the row.*

18.2% of the patients were directed from the prosthodontics clinic to the orthodontics clinic in order to provide the necessary space for implantation to the right maxillary lateral incisor site; 14.48% were for both of the maxillary lateral incisors sites, and 13.1% were for the left maxillary lateral incisor site (Figure 1).

It was found that 24.32% of the patients who were referred from the prosthodontics clinic to the orthodontics clinic for esthetic evaluation, were consulted for the maxillary incisors, and 21.62% were consulted for both the maxillary lateral incisors (Figure 2).

Assessment of the consultation notes from the orthodontics clinic to the prosthodontics clinic

The most common reason for referring patients from the orthodontics clinic to the prosthodontics clinic was “Prosthodontic evaluation of the space gained for implant placement” with a rate of 48.8% (Table 3). This was followed by “Prosthetic evaluation for esthetic restoration” with a rate of 15.1% and “Evaluation of the patient in terms of prosthetic rehabilitation” with a rate of 13% (Table 3). A significant relationship was found between the referring dentist and the reason for consultation (Table 3) ($p < 0.05$). It was found that 17.6% of the dentists who requested a consultation were orthodontists, while 82.4% were post-graduate students (Table 3).

It was found that 25.49% of the patients who were referred from the orthodontics clinic to the prosthodontics clinic for an evaluation of spaces for implant placement were consulted with regard to both the maxillary lateral incisors (Figure 3). It was found that 8.63% of the consultation notes with regard to implant placement sites were for maxillary left lateral incisors, and 8.63% were for both mandibular second premolar teeth (Figure 3).

Table 3.

Evaluation of consultation notes directed from prosthodontics clinic to orthodontics clinic.

Consultation request	Orthodontist	Postgraduate Student	Total	Pearson Chi-Square Test	Fisher's Exact Test
	N (%) *	N (%) *	N (%) *	Value (*p* value)	Value (*p* value)
Evaluation for a crown restoration	3 (3.3)	49 (11.4)	52 (9.9)		
Removal of prosthetic restoration	1 (1.1)	2 (0.5)	3 (0.6)		
Prosthetic evaluation of the space gained for implant placement	34 (37.0)	221 (51.3)	255 (48.8)		
Evaluation of persistent primary teeth in terms of prosthetic restoration	0 (0.0)	3 (0.7)	3 (0.6)		
Prosthetic evaluation for esthetic restoration	18 (19.6)	61 (14.2)	79 (15.1)		
Repair of prosthetic restoration	0 (0.0)	5 (1.2)	5 (1.0)		
Evaluation of the patient in terms of prosthetic rehabilitation	18 (19.6)	50 (11.6)	68 (13.0)	31.554 (*p<0.001*)	29.604 (*p<0.001*)
Evaluation of the individual with cleft lip and palate in terms of prosthetic restoration	9 (9.8)	11 (2.6)	20 (3.8)		
Evaluation of the individual who is considered to have prosthetic treatment in terms of growth and development	3 (3.3)	5 (1.2)	8 (1.5)		
Evaluation of stabilization splints in patients with TMJ disorder	3 (3.3)	20 (4.6)	23 (4.4)		
Evaluation of dental transposition in terms of prosthetic restoration	3 (3.3)	4 (0.9)	7 (1.3)		
Total N (%) **	92 (17.6)	431 (82.4)	523 (100.0)		

*N: Number of subjects. Statistical significance level: p<0.05. * It shows percentages along the column. ** It shows percentages along the row.*

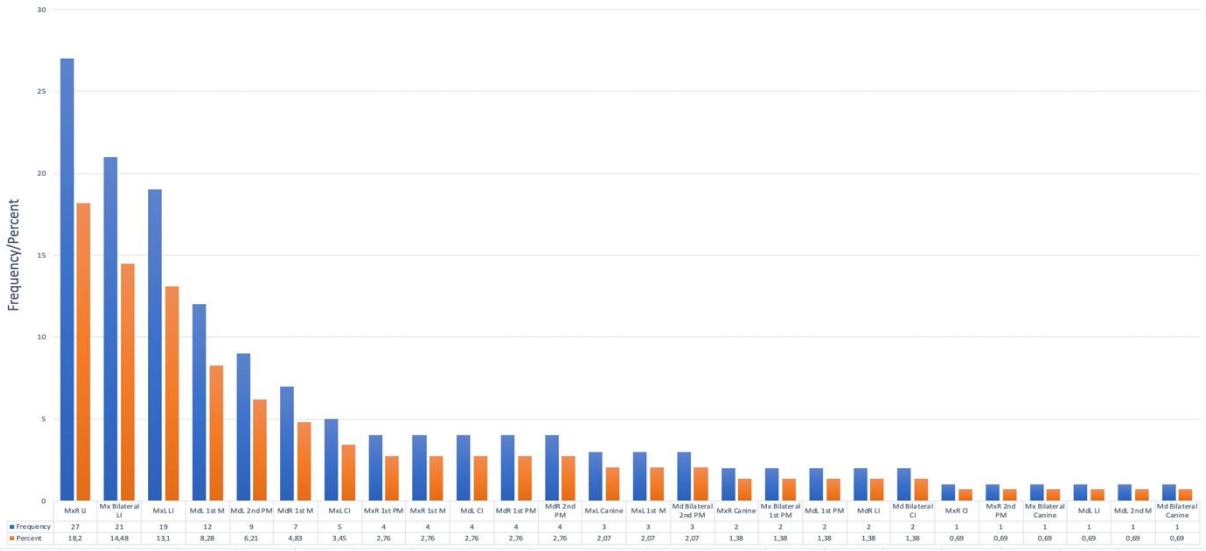

Figure 1

Consultation note with regard to "Providing necessary space for implant treatment" from prosthodontics clinic to orthodontics clinic: Distribution according to site. (Mx: Maxillary; Md: Mandibular; MxR: Maxillary Right; MxL: Maxillary Left; MdR: Mandibular Right; MdL: Mandibular Left; CI: Central Incisor; LI: Lateral Incisor; M: Molar teeth; PM: Premolar teeth).

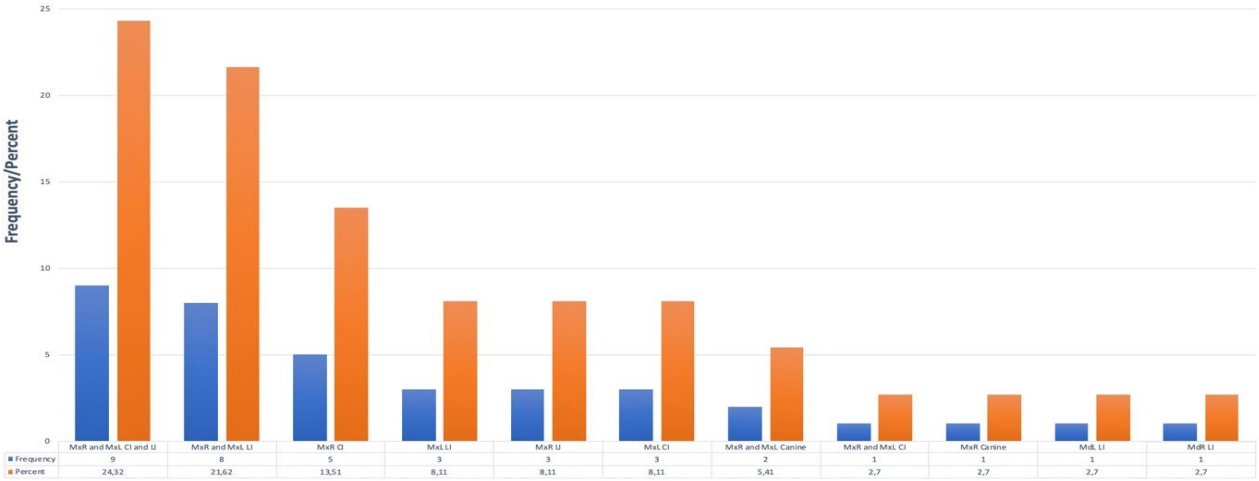

Figure 2

Distribution of requests with regard to "Evaluation of dental esthetics" in terms of the dental situation from prosthodontics clinic to orthodontics clinic. (Mx: Maxillary; Md: Mandibular; MxR: Maxillary Right; MxL: Maxillary Left; MdR: Mandibular Right; MdL: Mandibular Left; CI: Central Incisor; LI: Lateral Incisor; M: Molar teeth; PM: Premolar teeth).

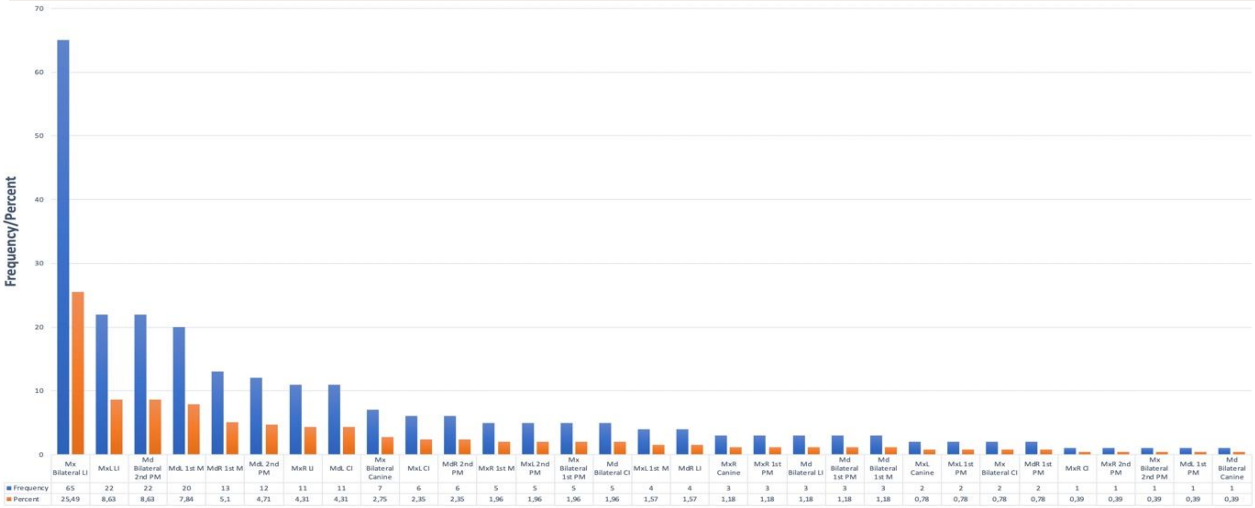

Figure 3

Distribution of requests with regard to "Prosthetic evaluation of the space gained for implant placement" in terms of the dental situation from orthodontics clinic to prosthodontic clinic (Mx: Maxillary; Md: Mandibular; MxR: Maxillary Right; MxL: Maxillary Left; MdR: Mandibular Right; MdL: Mandibular Left; CI: Central Incisor; LI: Lateral Incisor; M: Molar teeth; PM: Premolar teeth).

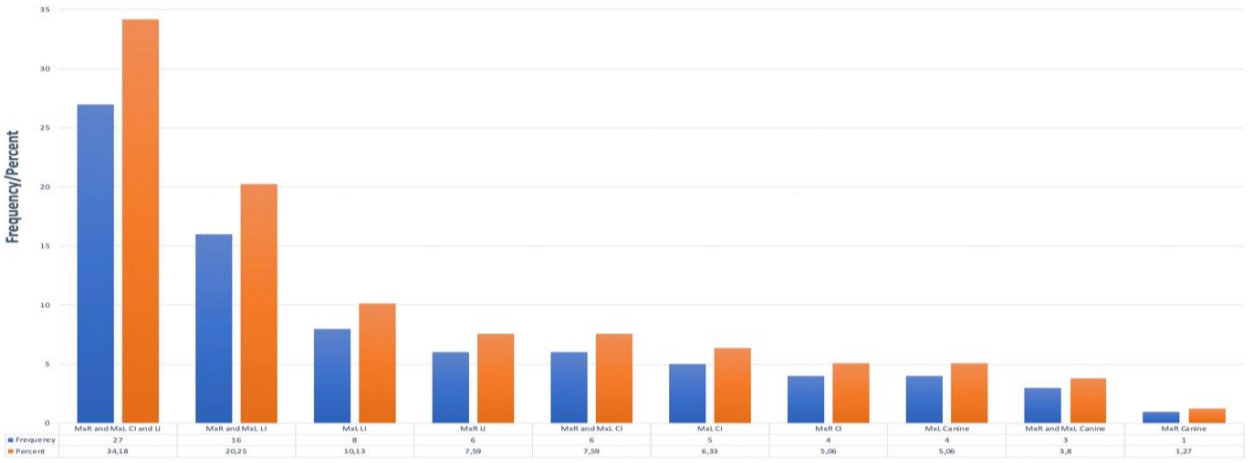

Figure 4

Distribution of requests with regard to "Prosthetic evaluation of the space gained for implant placement" in terms of the dental situation from orthodontics clinic to prosthodontic clinic (Mx: Maxillary; Md: Mandibular; MxR: Maxillary Right; MxL: Maxillary Left; MdR: Mandibular Right; MdL: Mandibular Left; CI: Central Incisor; LI: Lateral Incisor; M: Molar teeth; PM: Premolar teeth).

It was found that 34.18% of the patients who were referred from the orthodontics clinic to the prosthodontics clinic with regard to "Prosthetic evaluation for esthetic restoration", were consulted with regard to the maxillary incisors, while 20.25% of them were for both maxillary lateral incisors (Figure 4).

DISCUSSION

In general dental practice, professionals from different disciplines often work at different locations with limited interaction, and sometimes need to consult other specialists with regard to treatment. Communicating with the other specialists can reduce the risks of the treatment. Abdelkarima and Jerrold[22] suggested that if a case needed consultation with other dentists, it was often best to make the referral before starting orthodontics treatment.

The present study examined the interdisciplinary relationship between prosthodontics and orthodontics clinics, and the consultation notes of both dental disciplines were evaluated. In this way, major reasons for consultations were revealed.

The results indicated that the primary reason for consultation from both clinics was the evaluation of the space needed for implant restoration, and evaluation in terms of dental esthetics. In these cases, it was determined that the maxillary incisor teeth were the major concern. It is known that maxillary anterior teeth are of importance with regard to smile esthetics.[23] It has been stated in various studies and case reports that maxillary anterior teeth in particular tend to be treated for esthetic reasons.[11,24-26] In the present study, it was observed that the assessment of implant placements was needed mostly for maxillary lateral incisors. Celikoglu et al.[27] investigated the incidence of congenitally missing teeth in the Turkish orthodontics patient population and reported that the most common missing teeth were the maxillary lateral incisors, followed by the mandibular second premolars and mandibular central incisors, excluding the third molars.

Due to the high success rate and satisfying esthetic potential in adults, it is frequently preferred to treat missing maxillary lateral incisors via implant restoration, involving a multidisciplinary approach.[7] In the present study, it was observed that implant restoration was considered mostly in cases of congenital dental absence. It has been observed that patients with cleft lip and palate (CLP) are directed from both clinics. The rehabilitation process of CLP patients generally begins with orthodontics treatment in infancy, and that such patients need a multidisciplinary treatment approach in the long-term.[20,28-30] While CLP patients were treated by both orthodontists and post-graduate students in the orthodontics clinic, such patients were treated only by prosthodontist specialists at the prosthodontics clinic. This could be for the patient's convenience in that an experienced specialist will be able to provide complex treatment faster and more accurately, given that such patients will have been being treated for a very long time. Consequently, they might prefer quick and precise treatment.[31] In addition, it was found that the second most-common reason for referring patients from the prosthodontics clinic to the orthodontics clinic was "General orthodontics evaluation". This may be because multidisciplinary evaluation of the patients can provide additional benefits in terms of esthetics and function.[32]

As a result, it was determined that the most-common reasons for consultation between the prosthodontics and orthodontics clinics were evaluation with regard to implant restoration, and esthetic restoration from a multidisciplinary perspective.

CONCLUSION

In some cases, cooperation between departments of orthodontics and prosthodontics is essential for effective treatment. In the present study the consulting categories between prosthodontics clinics and orthodontics clinics were investigated. Some of these categories which were found to be complicated were directed to specialists instead of to post-graduate students. The present study provides clinicians with up-to-date information about the interdisciplinary relationship between orthodontics and prosthodontics clinics. Furthermore, it will be useful in that it provides more detailed information about the multidisciplinary relationships than is found in the textbooks in the field of prosthodontics and orthodontics, and in the relevant disciplines.

REFERENCES

1. Dunn WJ, Murchison DF, Broome JC. Esthetics: patients' perceptions of dental attractiveness. J Prosthodont 1996;5:166-71.
2. Sriphadungporn C, Chamnannidiadha N. Perception of smile esthetics by laypeople of different ages. Prog Orthod 2017;18:8.
3. Pithon MM, Bastos GW, Miranda NS, et al. Esthetic perception of black spaces between maxillary central incisors by different age groups. Am J Ortod Dentofacial Orthop 2013;143:371-5.
4. Soares CJ, Fonseca RB, Martins LR, Giannini M. Esthetic rehabilitation of anterior teeth affected by enamel hypoplasia: a case report. J Esthet Restor Dent 2002;14:340-348.
5. Cronin RJ, Cagna DR. An update on fixed prosthodontics. J Am Dent Assoc 1997;128:425-36.
6. Shillingburg HT, Hobo S, Whitsett LD, Jacobi R, Brackett S. Esthetic Considerations. Shillingburg HT, editor. Fundamentals of fixed prosthodontics. 3rd Edition. North Kimberly Drive, Carol Stream, USA: Quintessence Publishing Company 1997. p. 419-432.
7. Priest G. The treatment dilemma of missing maxillary lateral incisors-Part II: Implant restoration J Esthet Restor Dent 2019;31:319-26.
8. Gelgör İ, Koca Ö. Ortodontide Protetik Yaklaşımlar. Cumhuriyet Dent J 2002;5:107-110.
9. Rondeau B. Ortho-Esthetics. Freedman G, editor. Contemporary Esthetic Dentistry. St. Louis, Missouri, USA: Elsevier Mosby 2012. p. 685-718.
10. Sharma PK, Sharma P. Interdisciplinary management of congenitally absent maxillary lateral incisors: Orthodontic/prosthodontic perspectives. Sem Orthod 2015;21:27-37.
11. Abu-Hussein M, Watted N, Abdulgani A, Kontoes N. Prosthodontic-Orthodontic Treatment Plan with Two-Unit Cantilevered Resin-Bonded Fixed Partial Denture. IOSR-JDMS 2015;14:131-6.
12. Avila G, Galindo-Moreno P, Soehren S, et al. A novel decision-making process for tooth retention or extraction. J Periodontol 2009;80:476-91.
13. Proffit WR, Sarver DM. Special Considerations in Treatment for Adults. Proffit WR, Fields HW, Sarver DM, editors. Contemporary of Orthodontics. 6th Edition. Philadelphia, PA, USA: Elsevier; 2019. p. 599-654.
14. Becker A, Chaushu S. Management of Impactions. Graber L, Vanarsdall R, Vig K, Huang G, editors. Orthodontics-E-Book: current principles and techniques. 6th Edition. St. Louis, Missouri, USA: Elsevier Health Sciences; 2016. p. 569-620.
15. Vanarsdall RL, Musich DR. Adult Interdisciplinary Therapy: Diagnosis and Treatment. Graber LW, Vanarsdall RL, Vig KW, Huang GJ, editors. Orthodontics-E-Book: current principles and techniques. 6th Edition. St. Louis, Missouri, USA: Elsevier Health Sciences; 2016. p. 569-620.
16. Altan A, Çolak S, Akbulut N, H. A. Radiographic Features and Treatment Strategies of Impacted Maxillary Canines. Cumhuriyet Dent J 2020;23:32-7.
17. Strub JR, Türb JC. Esthetics in dental prosthetics: Fundamentals and treatment concept. Fischer J, editor. Esthetics and prosthetics: An interdisciplinary Consideration of the State of The Art. Chicago: Quintessence 1999. p. 1-30.
18. Kocadereli I, Tasman F, Guner SB. Combined endodontic-orthodontic and prosthodontic treatment of fractured teeth. Case report. Aust Dent J 1998;43:28-31.
19. Pişkin B, Akin H, Şentut F. Usage of oral appliances in obstructive sleep apnea. Cumhuriyet Dent J 2012;15:264-78.
20. Schultze-Mosgau S, Nkenke E, Schlegel AK, Hirschfelder U, Wiltfang J. Analysis of bone resorption after secondary alveolar cleft bone grafts before and after canine eruption in connection with orthodontic gap closure or prosthodontic treatment. J Oral Maxillofac Surg 2003;61:1245-8.
21. Demarosi F, Varoni E, Rimondini L, Carrassi A, Leghissa GC. Immediate Implant Placement After Removal of Maxillary Impacted Canine Teeth: A Technical Note. Int J Oral Maxillofac Implants 2016;31:191-4.
22. Abdelkarim A, Jerrold L. Strategies for improved interdisciplinary care and communication in orthodontics. Am J Orthod Dentofacial Orthop 2017;152:717-21.
23. Mechanic E. Smile Design. Freedman G, editor. Contemporary Esthetic Dentistry. St. Louis, Missouri, USA: Elsevier Mosby; 2012:99-131.
24. Kuliš A, Kopač I. Prosthodontic treatment of an Angle III Class malocclusion: A case report. Quintessence Int 2017;48:625-31.
25. Al-Habahbeh R, Al-Shammout R, Al-Jabrah O, Al-Omari F. The effect of gender on tooth and gingival display in the anterior region at rest and during smiling. Eur J Esthet Dent 2009;4:382-95.
26. Eduarda Assad Duarte M, Martins Machado R, Fonseca Jardim da Motta A, Nelson Mucha J, Trindade Motta A. Morphological simulation of different incisal embrasures: perception of laypersons, orthodontic patients, general dentists and orthodontists. J Esthet Restor Dent 2017;29:68-78.
27. Celikoglu M, Kazanci F, Miloglu O, et al. Frequency and characteristics of tooth agenesis among an orthodontic patient population. Med Oral Patol Oral Cir Bucal 2010;15:e797-801.
28. Dogan E, Dogan E, Dogan S. Interdisciplinary treatment approaches for cleft lip and palate patients to obtain esthetic and functional results. J Dent Oral Hyg 2019;11:1-5.

29. Abreu A, Levy-Bercowski D, Yu J, et al. Interdisciplinary treatment of an adult with bilateral cleft lip and palate with missing premaxilla: The prosthodontic perspective. J Prosthet Dent 2015;114:609-13.
30. Singla S, Pandher PK, Lehl G, Talwar M. Orthodontic and prosthodontic management of an adult patient with unilateral cleft lip and palate. Indian J Dent Sci 2016;8:159-162.
31. Guerrero CA. Cleft lip and palate surgery: 30 years follow-up. Ann Maxillofac Surg 2012;2:153-7.
32. Kalia S, Melsen B. Interdisciplinary approaches to adult orthodontic care. J Orthod 2001;28:191-6.

Corresponding Author:

Taner OZTURK
Erciyes University
Faculty of Dentistry
Department of Ortodontics,
Kayseri, Turkey
Phone : +90 352 207 66 66
E-mail : tanertr35@gmail.com