

The common problems encountered during orthodontic

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Abstract

Orthodontic treatment helps the patients in improving dental and facial aesthetics, providing stable and good functioning of dentition. Above all it also builds up self-esteem. Various problems can be encountered during the course of treatment that add discomfort in day to days life of the patients. Hence this short survey was conducted to highlight the problems encountered when Orthodontic treatment is provided for patients. It includes questionnaire regarding appearance, pain, ulceration, Oral hygiene maintenance, diet restrictions, bad odours, gum problems, fear of extraction, Multiple appointments, etc, that had to answered as yes, no or at times. Patients were also asked to rank three main problems as first, second and third.

Keywords: Short survey.

Introduction

Orthodontic treatment helps in bringing teeth in proper alignment, with enhancement of facial aesthetics, thereby providing stable and functional occlusion and above all, it also builds up self-esteem and confidence of an individual.¹

Orthodontic appliances are basically foreign objects inserted in a physically and psychologically sensitive area of the body i.e. oral cavity.² Orthodontic treatment continues for a longer duration of one and half years to two years and during the course of treatment, various problems can be encountered that add discomfort to day to day life of the patients.³

Few studies have found that pain and food lodgment were common problems with Orthodontic treatment^{3,4} and around 95% patients experienced pain on placement of an Orthodontic appliance². Other studies found variable problems in subjects with different types of malocclusion who have not undergone Orthodontic treatment^{1,5} None of these surveys included all the problems associated with Orthodontic treatment, hence this short survey was conducted to highlight the problems regarding appearance, pain, ulcerations, oral hygiene maintenance, diet restriction, multiple appointments etc, encountered when Orthodontic treatment is provided for the patients.⁴

Questionnaire regarding survey

- Are you conscious of your appearance because of braces?
A-Yes B- No C- At times
- Do you feel anxious or scared of getting extractions?
A-Yes B- No C- At times
- Does you have difficulty in speech due to your braces?
A-Yes B- No C- At times
- Do oral ulcers on your cheek and lips occur frequently during Orthodontic treatment?
A-Yes B- No C- At times
- Do you have any difficulty in chewing with braces?
A-Yes B- No C- At times

Material and Methods

Criteria for patient selection:

- New patients coming to our department for fixed Orthodontic treatment.
- Patients with no previous history of fixed Orthodontic treatment.

A short survey was conducted among 146 patients, who were undergoing fixed Orthodontic treatment in our department. A total of 17 questions were short listed for the questionnaire. Each question had to be answered as (Yes, No, and At times). The sample of questionnaire is shown in figure 1a and 1b. This questionnaire was distributed among the selected subjects. At the end of questionnaire patients had to list the three most common problems encountered during the course of treatment and these were rated as first, second and third. Informed consent was taken from all the subjects.

The data from the questionnaires were tabulated in Microsoft Excel and was independently cross-checked.

6. Do you feel pain after activation of wire at each appointment during the course of Orthodontic treatment?
A-Yes B- No C- At times
7. Does wires hurt you before your next appointment is due?
A-Yes B- No C- At times
8. Does breakage of band or breakage of bonded attachment cause any discomfort ?
A-Yes B- No C- At times
9. Does cleaning of teeth multiple times pose discomfort to you.
A-Yes B- No C- At times
10. Do you have difficulty in cleaning your teeth?
A-Yes B- No C- At times
11. Do you feel embarrassed because of food lodgement in public places?
A-Yes B- No C- At times
12. Did you feel/notice problems in your gums like bleeding, swelling?
A-Yes B- No C- At times
13. Does bad odour comes from your mouth?
A-Yes B- No C- At times
14. Does diet restriction imposed during the treatment trouble you?
A-Yes B- No C- At times
15. Do you miss your favourite aerated drinks?
A-Yes B- No C- At times
16. Do you miss playing contact sports due to braces treatment?
A-Yes B- No C- At times
17. 18. How much time did you take to become comfortable with your braces after initial placement?
A- 4 to 5 days B- 1 week C- More then 1 week

3 most common reasons:

Table 1: Distribution of problems encountered during Orthodontic treatment (n=146)

Question	Yes (n) (%)	No (n) (%)	At times (n) (%)	χ^2 Value	p value
Q1	81 (55)	46 (32)	19 (13)	321.10	<0.001
Q2	66 (45)	56 (38)	24 (16)		
Q3	33 (23)	81 (55)	32 (22)		
Q4	49 (34)	59 (40)	38 (26)		
Q5	42 (29)	78 (53)	26 (18)		
Q6	61 (42)	34 (23)	51 (35)		
Q7	45 (31)	62 (42)	39 (27)		
Q8	32 (22)	76 (52)	38 (26)		
Q9	38 (26)	84 (58)	24 (16)		
Q10	42 (29)	100 (68)	4 (3)		
Q11	50 (34)	87 (60)	9 (6)		
Q12	39 (27)	84 (58)	23 (16)		
Q13	39 (27)	89 (61)	18 (12)		
Q14	68 (47)	59 (40)	19 (13)		
Q15	24 (16)	108 (74)	14 (10)		
Q16	14 (10)	122 (84)	10 (7)		
Q17	54 (37)	50 (34)	42 (29)		
Total	777 (31)	1275 (51)	430 (17)	-	-

Table 2: Rating of most common problems encountered during Orthodontic treatment (n=146)

Question	First most common problem (n) (%)	Second most common problem (n) (%)	Third most common problem (n) (%)	χ^2 value	p value
Q1	16 (11)	9 (6)	16 (11)	129.30	<0.001
Q2	18 (12)	6 (4)	10 (7)		
Q3	16 (11)	4 (3)	8 (5)		
Q4	20 (14)	13 (9)	6 (4)		
Q5	14 (10)	15 (10)	6 (4)		
Q6	2 (1)	24 (16)	8 (5)		
Q7	6 (4)	2 (1)	6 (4)		
Q8	6 (4)	4 (3)	6 (4)		
Q9	15 (10)	13 (9)	6 (4)		
Q10	4 (3)	15 (10)	0 (0)		
Q11	3 (2)	6 (4)	20 (14)		
Q12	8 (5)	14 (10)	10 (7)		
Q13	4 (3)	4 (3)	20 (14)		
Q14	8 (5)	14 (10)	17 (12)		
Q15	4 (3)	3 (2)	1 (1)		
Q16	0 (0)	0 (0)	4 (3)		
Q17	2 (1)	0 (0)	2 (1)		

Statistical analysis

The descriptive statistics (frequency distribution, median, mean, and standard deviation) were calculated to summarize the obtained data. Analysis was performed on SPSS software (Statistical package for the social sciences) (windows version 17.0). Discrete (categorical) data were summarized in number and percentage and compared by chi-square (χ^2) test. A two-tailed $p < 0.05$ was considered statistically significant.

Results

The distribution of response (yes/no/at times) to questions (Q1 to Q17) regarding problems encountered during orthodontic treatment is summarized in Table 1

The patients rating for three most common problems related to Orthodontic treatment are summarized in Table 2

Discussion

Long duration of Orthodontic treatment carries the risk of tissue damage and is associated with various problems that bothering the patient because of their appearance and associated pain, ulceration, bad od our, gum problems, fear of extractions etc.

Orthodontic practitioners are aware of these problems but patient perception of these problems will help in tackling the patients in a more efficient manner. The result of the survey showed that, the overall frequency (%) of response for “no” was the highest (51%) followed by “yes” (31%) and least was for the response “at times” the least (17%). The most of the patients responded “yes” to Q1 (conscious of appearance because of braces) (55%) and least to Q16 (miss playing contact sports) (10%). About 50% had problems regarding appearance, fear of extractions, and fear of pain after activation of wire, wire impingement and food lodgment. Less than 30% had difficulty in speech, chewing,

detachment of bonded and banded attachments, bleeding and swollen gums and bad odor.

Further, the patient mostly respond “no” to Q16 (miss playing contact sports due to braces) (84%) and least to Q6 (Feeling of pain after activation of wire at each appointment) (23%). More than 40% did not find problems with their favorite aerated drinks, missing to play contact sports, restrictions, bad odors, gum problems, food lodgment, cleaning teeth, breakage of banded and bonded attachments, difficulty in chewing, ulcerations, and difficulty in speech.

Furthermore, the patient mostly responded “at times” to Q6 (Feeling of pain after activation of wire at each appointment) (35%) and least to Q10 (difficulty in cleaning your teeth) (3%). 20 to 40% found difficulty with speech, ulcerations, pain after activation of wire, wire impingement, breakage of banded and bonded attachments.

Pradeep kumar⁶ conducted a survey prior to start of Orthodontic treatment and found people were most scared of impressions, 34% anticipated hampering of esthetics with braces, 24% anticipated pain and discomfort in eating and cleaning of teeth. As subjects of our study were already undergoing Orthodontic treatment, higher percentage of people considered different problems to be a part and parcel of fixed orthodontic treatment⁶.

Marques et al³ conducted a survey on 272 subjects who were undergoing Orthodontic treatment and found that discomforts, associated with use of fixed Orthodontic treatment exerted a negative influence on quality of life. Discomfort was mainly attributed to difficulty in eating, maintaining oral hygiene, speech impairment, halitosis, impaired taste, bleeding gum, self confidence because of visibility of braces in most of their subjects. According to them the reason could be that fixed Orthodontic treatment is generally undertaken by adolescents, who are more

conscious of their appearance among their friends, and acquaintances during the course of treatment.³

Various studies have cited fear of pain as a key factor in dissuading patients from seeking fixed orthodontic treatment.^{1,6} In our study 42% patients found that pain was a problem with a fixed Orthodontic treatment. In a study by Marques et al, there was lack of association between pain and discomfort. The possible explanation was that patients were selected based on the experience of treatment for 6 months, and they knew that pain lasted for initial 2-4 days after activation and then normalizes, whereas patients of our study had just started the Orthodontic treatment.

In a study by Gupta A and Singh K,⁴ comparison of Orthodontic and non Orthodontic cases revealed higher prevalence of dental problems like ulcers, dental caries, and periodontal diseases in Orthodontic patients.⁴

Lagrani⁵ found poor periodontal health in subjects undergoing fixed Orthodontic treatment in comparison to subjects not undergoing Orthodontic treatment, as Orthodontic appliances aid in retention of plaque and food debris. Similar to this study, around 30% of patients of our survey considered repeated brushing, difficulty in cleaning of teeth, and food lodgment as a problem though it was not ranked as first, second or third problem by majority of the subjects.

The results of ranking of problems in the present study showed that the first most common problems was frequent ulcerations, Second most common problems was rated as pain after activation and third most common problem was food lodgment and diet restriction.

None of the surveys made patients rank their problem. This ranking helped us in understanding the common variables that add to discomfort associated with fixed Orthodontic treatment. This would also help us in counseling of subjects and in turn may help in reducing failed appointments, or premature termination of treatment thereby enhancing patient's compliance.

Though all the problems associated with fixed Orthodontic treatment cannot be totally eliminated but various poster or educational videos must be displayed in the clinic for the benefit of subjects regarding these common problems along with reviews of previously treated subjects. Various morphing software can be used to show anticipated outcome of treatment to the patients and this will help in coping with minor discomforts associated with Fixed Orthodontic treatment. The problems that can be minimized

should be told to the patients like maintenance of proper oral hygiene, following diet restrictions can reduce food lodgment, difficulty in cleaning of teeth, bleeding gums, halitosis etc. The problem related to breakage of attachments or wires poking the mucosa can be minimized by stressing on regular appointments with Orthodontists.

As the treatment progresses, esthetics improves and there is increase in self esteem and self confidence of the patients, which will itself reduce the many of the discomforts associated with fixed Orthodontic treatment.

Conclusion

The overall frequency (%) of response for "no" was the highest (51%) followed by "yes" (31%) and least was for the response "at times" the least (17%).

The results of ranking of problems in the present study showed that the first most common problems was frequent ulcerations, Second most common problems was rated as pain after activation and third most common problem was food lodgment and diet restriction.

Conflict of Interest: None.

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How to cite this article: Rai P, Tikku T, Khanna R, Maurya RP, Verma S, Shrivastava K, The common problems encountered during orthodontic. *J Orthod Dentofacial Res* 2019;5(1):37-40