J Oral Res
oral and craniofacial sciences

Perspective

Shortened dental arch.

Arco dental acortado.

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The shortened dental arch is considered as a good treatment option for patients who are partially dentate. Every person has 28 (or 32) teeth or 14 (or 16) pairs of opposing teeth with exception of those with developmental disorders. Throughout life, teeth may be lost due to physiological or pathological reasons such as occlusal wear, carries, periodontal disease and traumatic injuries.[1] The replacement of missing teeth is necessary to restore masticatory function. Often the dentist designs a fixed or removable prosthesis for the patient. The most important point is how many artificial teeth are required to achieve masticatory function. There are a number of factors that prosthodontists must take into account when replacing missing teeth. These factors are vertical dimension, occlusion, maintenance of hard tissue, oral function, temporomandibular joint and patient comfort.[2]

Shortened dental arch

A shortened dental arch is defined as a dentition where anterior and premolar teeth are intact. A number of studies have shown that masticatory function is related to the number of teeth. These studies indicate that 20 teeth are necessary to produce masticatory function, where anterior and premolars can achieve the requirements of oral function.[3,4] Figure 1 demonstrates a shortened dental arch which includes anterior and premolars teeth.[3]

The oral functionality is defined as "the maintenance of masticatory ability and efficiency while preserving the health of soft and hard tissues".[2] When the number of teeth is less than 20, this impairs the masticatory ability.[3,4] The functional demands of patients and number of teeth differ from one person to another but it is very important to achieve oral function, to improve oral hygiene, to make the patient comfortable and to minimize the cost of the prosthesis.[2]

Replacement of molar teeth

There is a controversial issue about whether to replace molar teeth or not. Witter *et al.*,[1] stated the significance of replacement molar teeth is to prevent temporomandibular joint problems and occlusal instability. On the other hand, Ramfjord[5] suggests that the replacement of molar teeth is not important because they may have a negative impact on the oral health, as they are considered a common source of periodontal disease, and additionally molar teeth are at high risk for caries.

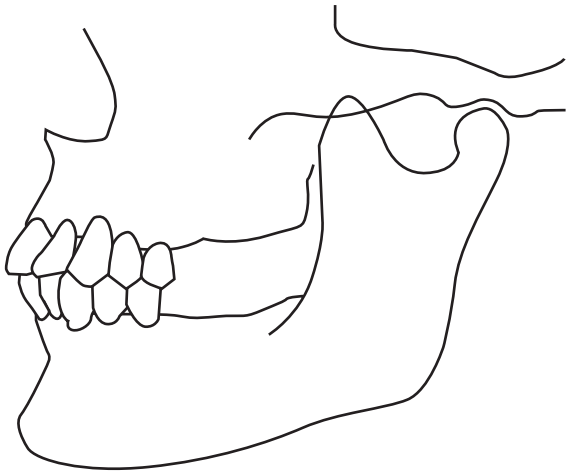
Advantages of shortened dental arch

A shortened dental arch is considered as a good treatment option for patients who are partially dentated due to many advantages. It maintains the masticatory ability, enhances oral hygiene, patient comfort and

Cite as:
Kati FA.
Shortened dental arch.
J Oral Res 2020; Perspectives S3 (1):30-32
Doi:10.17126/joralres 2020.060

ISSN Print 0719-2460 - ISSN Online 0719-2479. www.joralres.com/2020

Figure 1. A shortened dental arch, (Kayser, 1981).[3]



probably decreases cost.[2] In addition, a shortened dental arch has many benefits through their longitudinal study comparison with the complete dental arch[6,7] and include sufficient oral function, oral comfort, and occlusal stability.

Twenty teeth (10 pairs of opposing teeth) are necessary to produce masticatory function, where anterior and premolars can achieve the requirements of oral function.

REFERENCES.

1. Witter D, Helderman W, Creugers N, Kayser A. The shortened dental arch concept and its implications for oral health care. Community Dent Oral Epidemiol. 1999; 27(4):249-58
2. Armellini D, Fraunhofer J. The shortened dental arch: A review of the literature. J Prosthet Dent. 2004; 92(6): 531- 35
3. Kayser A. (1981). Shortened dental arches and oral function. Journal of Oral Rehabilitation. 8(5): 457-462
4. Sarita PT, Witter DJ, Kreulen CM, Creugers NH. (2003). The shortened dental arch concept attitudes of dentists in Tanzania. Community Dent Oral Epidemiol. 2003; 31(2):111-5.
5. Ramfjord SP. Periodontal aspects of restorative dentistry. J Oral Rehab. 1974; 1(2):107–26
6. Witter DJ, De Haan AFJ, Kayser AF, van Rossum GMJM. A 6-year follow-up study of oral function in shortened dental arches. Part I. Occlusal stability. J Oral Rehab. 1994; 21(2):113-25.
7. Witter DJ, De Haan AFJ, Kayser AF, van Rossum, GMJM. A 6-year follow-up study of oral function in shortened dental arches. Part II. Craniomandibular dysfunction and oral comfort. JOral Rehab. 1994; 21(4):353-66.