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## Case Report

### DIASTEMA, REVIEW AND CASE REPORT

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#### ABSTRACT

This paper presents an orthodontic case of a 3mm maxillary midline diastema. An orthodontic approach of Removable appliances was used to close the space. This resulted in a natural appearance. This treatment principle can be applied for use in other small spacing cases.

##### Key Words:

Diastema; Removable appliance;  
Spacing

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## INTRODUCTION

### Background

It is well known that the esthetic zone in the anterior maxilla has the greatest impact on smile design, and people became more concerned about their health and appearance; which includes healthy teeth and a beautiful smile, that will affect their confidence. It was reported that any esthetic problem occurring in this area can lead to unattractive smiles, which may sometimes reduce a persons confidence in smiling during their social lives.<sup>1</sup>

Diastema is the term dentists give to a gap that has formed between adjacent teeth mostly in central incisors. It is occur in approximately 98% of 6 year olds, 49% of 11 year olds and 7% of 12–18 year olds.<sup>2</sup>

The continuing presence of a diastema between the maxillary central incisors in adults often is considered an esthetic or malocclusion problem.<sup>3</sup>

Midline spacing has a racial and familial background. Although no specific genes have been investigated for its genetic etiology but there are many syndromes and congenital anomalies which contained midline diastema e.g. Ellis-van Creveld syndrome, PaiSyndrome, lateral incisor agenesis and

cleft palate, median cyst.<sup>4</sup> The causes of Midline diastema can be physiological, dentoalveolar, due to a missing tooth, due to peg shaped lateral, midline supernumerary teeth, proclination of the upper labial segment, prominent frenum and due to a self-inflicted pathology by tongue piercing.<sup>5</sup>

Because of the potential for multiple etiologies, the diagnosis of a diastema must be based on a thorough medical/dental history, clinical examination, and radiographic survey.

Several techniques have been reported in the literature for diastema treatment. Small diastemas (less than 2mm) can be closed with finger springs on a removable appliance or with a split Essix plate, A removable appliance with clasps and finger springs will allow for minor tooth movement in the anterior area.<sup>6</sup>

A carefully developed differential diagnosis allows the practitioner to choose the most effective orthodontic and/or restorative treatment. Diastemas based on tooth-size discrepancy are most amenable to restorative and prosthetic solutions. The most appropriate treatment often requires orthodontically closing the midline diastema.<sup>7</sup>

In patients with good posterior occlusion or who have economic considerations, the diastema can be closed simply

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with removable orthodontic appliances. A removable Hawley appliance with finger springs is commonly used.<sup>2</sup>

The purpose of this article is to present a case report of a 55 year old female with midline diastema treated by removable appliance achieving satisfactory results.

### Case Report

A 55 years Saudi female came to Orthodontics Department of, Riyadh colleges of Dentistry and Pharmacy, complaining from the space in the middle of frontal teeth, On orthodontic examination following findings were observed: midline diastema of 3mm (fig.1) The molars was in class I m relation in right side and left side lower molar is missing. Frontal view of patient as well as profile view of patient was good. As the patient was not willing for fixed orthodontic treatment or restorative treatment because of cost and increased chair side time, It was decided to treat the patient by Hawley removable appliance using to close the diastema for 3 months(fig.2) and results were achieved (fig.3)



Fig 1 Intra oral photo before the treatment



Fig 2 Hawley retainer



Fig 3 Intra oral photo After the treatment

### DISCUSSION

Many factors play a role in the treatment success and outcome for diastema. It includes etiological factors, size and extent of the diastema, and patient's affordability in terms of treatment time and costs.

Various treatment modalities have been reported in the literature; include removable orthodontic appliances, full arch, single arch or sectional fixed orthodontic appliances, restoration techniques etc.<sup>8,9</sup> The most appropriate treatment often requires orthodontic treatment to close midline diastema. Patient's preference to the treatment is affected by psychological, physical, financial, and time factors. All these factors should be given due importance before contemplating the treatment.<sup>10</sup>

In the present case, a removable appliance was placed on the teeth.

### CONCLUSION

The use of a simple removable orthodontic appliance can be effective to manage Diastema. This conservative treatment can achieve a highly esthetic outcome. The treatment principles described in this case report can be extended to the treatment of other small spacing issues present in other cases.

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