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ORTHO-PROSTHO INTERDISCIPLINARY APPROACH- A REVIEW

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Abstract

Because of the interdisciplinary reliance, aesthetic rehabilitation presents a difficult alternative for adult patients. Before beginning treatment, these patients need to be identified and given information about the length of time and periodontal hazards associated with orthodontic and prosthodontic therapy. Dentistry is under pressure to examine dental aesthetics in a more structured and methodical way as a result of the growing awareness of aesthetics in dental care. Today's dentists must be well-versed in aesthetic principles in order to satisfy patients, something that the once separate fields of orthodontics were unable to do. To provide the highest level of dental treatment to each patient various disciplines of dentistry should be used together. This review narrates use of interdisciplinary approach using ortho-prostho dental treatment to provide maximum esthetic and better prognosis to patients.

Keywords- Interdisciplinary approach, aesthetic rehabilitation, space closure

Introduction

Nowadays, when adults make up a sizable portion of orthodontic treatment patients, the importance of the interdisciplinary therapy method cannot be overstated [1]. Today, more adult patients than even before are receiving orthodontic treatment, with more sophisticating treatment goals and expectations. Many orthodontists practicing today have 45% of adult patients [1]. To significantly improve the quality of care and treatment prognosis, the interdisciplinary approach necessitated the active participation and communication of multiple specialists, including prosthodontists, periodontists, endodontists, and oral surgeons, with orthodontists throughout the course of treatment, from the diagnosis and treatment planning stage to the completion of active treatment and into the retention phase.

What is an interdisciplinary therapy

The ultimate utilization of the expertise and skills in the various dental disciplines is called interdisciplinary dentofacial therapy (IDT) [2]

IDT was created with the goal of optimizing treatment outcomes by combining the expertise, abilities,and experience of all dental specialties and related fields, while reducing the annoying and troublesome drawbacks of unidisciplinary treatment. The orthodontic specialization places a strong emphasis on interdisciplinary treatment planning in the current aesthetic environment. As a result, modern clinicians strive to accomplish reasonable therapeutic objectives that address numerous goals for both the patient and the practitioner. This new concept of interdisciplinary collaboration between orthodontics and other specialties of dental medicine is best synthesized by the word TEAM. (TOGETHER EVERYONE ACHIEVES MORE) [2].

The desire to improve the appearance of one's teeth and smile is the primary reason for receiving orthodontic treatment. Other common clinical characteristics that result in people being sent to an orthodontist include lost teeth from caries, periodontal disease or trauma, and functional impairment. These patients have a complex clinical picture that calls for an interdisciplinary team to address the greatest number of high-priority issues, including the patient's main complaint, and to use evidence-based treatment approaches to optimize treatment outcomes with the least amount of risk and the greatest benefit [3]. Planning and carrying out treatment should ideally begin at the beginning, with close coordination between all relevant specialists and the creation of a well-organized problem list to guarantee that every facet has been assessed during the diagnostic stage and to act as a useful guide during treatment [4]. This article's goal is to provide a quick overview of a multidisciplinary strategy that consistently yields the best outcomes when managing complex dentofacial issues.

Ortho-Prostho Interdisciplinary relationship

When it comes to prosthodontic treatment, orthodontists can frequently be of great aid. Prosthodontic goals can be facilitated by dental alignment of the arches; this technique is known as "facilitative orthodontics." Orthodontists and general dentists sometimes treat patients who have a maxillary central incisor that has been traumatized or who have a geminated or fused maxillary central incisor that needs to be extracted.

Tooth discoloration or enamel dysplasia, excessive overjet, dental crowding, or spacing, a gummy grin, gingival recession with irregular gingival borders or open embrasures negatively affect the quality of life of patient. Losing front teeth can have a detrimental impact on one's sense of self and increase the risk of psychological issues [5][6]. Visualizing the outcome prior to putting the final treatment plan into action may be excellent if improving the appearance of the teeth and smile is the primary reason for seeking treatment. With the development of digital smile design, the physician may now create a simulation of the desired outcome of the therapy, which can be useful for communicating with the patient and the rest of the team [7]. Additionally, exchanging follow-up intraoral scans while undergoing treatment makes it easier to work with the restorative dentist who is treating you to move the teeth in the best possible way for "minimally invasive" prosthodontic care [8]. Delivering ultrathin feldspathic or disilicate ceramic laminate veneers may improve dental and smile aesthetics but also enhance the long-term success rate of these restorations.

There are various conditions where combined orthodontic and prosthodontic treatment is required.

Missing teeth

Adult patients are frequently sent to an orthodontist in modern practice in order to quickly straighten pointed teeth that are close to edentulous areas. They are also frequently asked to undergo restricted "invisible" clear aligner pre-prosthodontic therapy prior to ceramic veneers. The prosthodontist can start rehabilitation effectively with these "limited" orthodontic pre-treatments, but they are not very effective in treating severe malocclusions. It can take more time to employ a thorough interdisciplinary approach aimed at managing all oral, bone, and functional problems. The tendency to receive comprehensive multidisciplinary therapy from qualified interdisciplinary teams of experts may have been influenced by the zeitgeist of limited-objective, clear aligner treatment, which is frequently offered by general practitioners.

Treatment options for patients with missing upper anteriors [9] -

1. Preservation or restoration of the lost incisor space, then prosthetic repair.

2. Closing the space and creating Class II relationships in the back.

3. Class I posterior relationships are established and two teeth, typically lateral incisors or premolars, are extracted from the lower arch.

For congenitally absent lateral incisors, single-tooth implants, tooth-supported restorations, and canine substitution are available treatment options [10]. The better choice for treating a peg-shaped lateral incisor is to restore the malformed tooth to its correct

dimension. To provide room, compressed coil springs are positioned between the canine, lateral incisor, and central incisor. The peg-shaped lateral's gingival edges ought to line up

with the lateral incisor on the opposite side. Following the construction of the temporary composite build-up and ultimate restoration, the restorative dentist will restore the tooth's appropriate length, width, and thickness. The neighboring teeth typically drift and spin when a posterior tooth (generally the first permanent molar) is removed, and the gingival tissue develops deformed and folded, creating an uncleanable pseudo-pocket. Eliminating potentially harmful diseases linked to pointed molars is perhaps the most crucial step, and it also has the benefit of making the final restoration treatments simpler [11].

Dental Trauma with Avulsion of teeth

Permanent tooth avulsion has been documented in 0.5–3% of all dental injuries, with children and teenagers experiencing this condition more frequently [12]. In adults, the most frequent causes of traumatic dental injuries are accidental falls (40%), sports activities, cycling and traffic accidents [13]. The most often traumatized teeth are the maxillary lateral incisors and the maxillary central incisors. According to reports, avulsion (17–25%) and lateral luxation (40%) are the two most common luxation injuries [13][14]. The alveolar plates and labial soft tissues may also be impacted if teeth in the aesthetic zone are removed as a result of trauma, which could lead to a later lack of the alveolar crest for implant implantation. Hard and soft tissue grafts may be necessary to heal the damaged tissues and provide satisfactory aesthetics. In order to improve appearance and lessen the need for substantial grafting, orthodontic tooth movement into the edentulous area may help restore both hard and particularly soft tissue. Thus, this strategy must to be taken into account when providing interdisciplinary treatment.

Medically compromised conditions such as Obstructive sleep apnea Obstructive sleep apnoea (OSA) is a common chronic disorder affecting about 2–4% of the adult population, with the highest prevalence reported among middle-aged men [15]. The disorder is typified by recurrent bouts of the upper airway (mostly the oropharyngeal tract) collapsing completely or partially as you sleep, which causes the airflow to stop or decrease [16]. The obstructive events (apnoeas or hypopneas) cause a progressive asphyxia that increasingly stimulates breathing efforts against the collapsed airway, typically until the person is awakened. Structural changes, including tonsillar hypertrophy, retrognathia and variations in craniofacial structures, have been linked to an increased risk of sleep apnoea, likely by increasing upper airway collapsibility. It is now well established that, if untreated, OSA is a major determinant of cardiovascular morbidity and mortality [17]. Oral appliances have become more widely accepted over the past ten years as a beneficial substitute for CPAP in the treatment of patients with mild to moderate OSA and those with severe conditions who are intolerant to CPAP. The tongue-retaining devices are another category of oral appliances. In order to pull the tongue forward and expand the upper airway dimension as you sleep, these more recent devices are made to gently suction the tongue into an anterior bulb. These devices considerably lower AHI when applied overnight, and one study found that they are just as effective as MAS. Despite their promise, there is currently not enough data to support the clinical application of these dental appliances [18].

Adults with more severe cases of OSA may benefit from concurrent maxillary expansion and maxillomandibular advancement surgery (MMAS) to enhance their quality of life and function. Increased upper airway capacity has been shown to improve quality of life and success rates for MMAS by 57–100% [19].

Conclusion

Because of the aging population and easier access to treatment, adult orthodontics has grown more and more common and will only grow in popularity globally. The innate desire of baby boomers to look good at a later age, coupled with increased social pressure, increased public awareness of the potential of "invisible" orthodontics to improve both functional and aesthetic impairment, and the introduction of less invasive surgery and minimally invasive restorative treatment, has created new opportunities for highly qualified, interdisciplinary teams. The interdisciplinary

team creates a network of shared skills and expertise, open communication, and trust. Close coordination amongst skilled dental professionals is beneficial for complex adult treatment in order to diagnose, plan, and carry out the best course of action for each patient. The success of the interdisciplinary therapy depends on "continuous interaction" and communication between the patients and members at every stage of care.

Ethical approval

Institutional Review Board approval is not required.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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