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VERBAL MOTIVATION: OPTIONS FOR PREVENTING DENTOFACIAL MALOCCLUSIONS AT THE AGE OF GROWTH

(MOTIVASI VERBAL: PILIHAN PENCEGAHAN MALOKLUSI DENTOFASIAL PADA USIA TUMBUH KEMBANG)

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ABSTRACT

Good communication between dentists and patients will create success in the patient care process and help patients to improve their understanding of medical information, perceptions, and expectations. Interpersonal relationships between children, parents, and operators (Dentists), are part of the basic pattern of behavior management or orthodontic treatment in children. Treatment of anterior crossbite in mixed dentition is highly recommended because this malocclusion cannot be corrected with growth or age. Case Report: A 9-year-old child came with a complaint that her right upper front tooth was growing behind her lower front teeth, so she felt insecure when smiling and uncomfortable when biting. The patient's mother and the patient want a treatment that can return the teeth into a good and normal position. The patient had no history of disease either in childhood or at present. Dental

history such as normal tooth eruption, premature loss, and dental trauma was denied but the patient stated that the permanent teeth had grown before the baby teeth fell out. The patient has no bad habits. In this case, education was carried out to the patient and his mother regarding the use of a tongue blade to push tooth 11 toward the labial direction to correct the palatoverted tooth 11. Conclusion: Cases of anterior crossbite in permanent teeth are quite common in children who are growing and developing, so early treatment to stimulate growth balance and occlusal development is needed to modify the growth direction to prevent further malocclusion.

Keywords: anterior crossbite; communication, growth

ABSTRAK

Komunikasi yang baik antara dokter gigi dan pasien akan menciptakan keberhasilan dalam proses perawatan pasien dan membantu pasien untuk meningkatkan pemahaman informasi medis, persepsi dan harapan. Hubungan interpersonal antara anak, orang tua, serta operator (Dokter Gigi), merupakan bagian pola dasar manajemen perilaku atau tindakan ortodontik pada anak. Perawatan crossbite anterior pada masa gigi bercampur sangat direkomendasikan karena maloklusi ini tidak dapat terkoreksi seiring dengan pertumbuhan ataupun bertambahnya usia. Laporan Kasus: Perempuan, 9 tahun datang dengan keluhan gigi depan kanan atas tumbuh dibelakang gigi depan bawah sehingga merasa tidak percaya diri saat tersenyum dan tidak nyaman saat menggigit. Ibu pasien dan pasien menginginkan perawatan yang dapat mengembalikan gigi pada posisi yang baik dan normal. Pasien tidak memiliki riwayat penyakit baik pada saat anak-anak dan saat ini. Riwayat dental seperti erupsi gigi normal, premature loss dan trauma dental disangkal namun pasien mengutarakan gigi tetap sudah tumbuh sebelum gigi susu nya tanggal. Pasien tidak memiliki kebiasaan buruk. Pada kasus ini dilakukan edukasi kepada pasien dan ibu nya mengenai penggunaan tongue blade untuk

mendorong gigi 11 ke arah labial yang bertujuan mengkoreksi gigi 11 yang mengalami palatoversi. Simpulan: Kasus crossbite anterior pada gigi permanen cukup banyak terjadi pada anak-anak dalam masa tumbuh kembang sehingga penanganan dini untuk menstimulasi keseimbangan pertumbuhan dan perkembangan oklusal sangat diperlukan untuk memodifikasi arah pertumbuhan supaya mencegah kelainan maloklusi yang lebih lanjut.

***Kata kunci**: crossbite anterior; komunikasi; tumbuh kembang*

INTRODUCTION

Communication between the dentist and the patient is an important thing. Communication is a competency that must be mastered by dentists in dental health services to improve service effectiveness and patient satisfaction. Good communication between dentists and patients will create success in the patient care process to improve the patient's health status, correcting dental problems properly without feeling any problems with the teeth and mouth, or psychological trauma problems.[1] Good communication will help patients to improve their understanding of medical information, perceptions, and expectations, build full trust in the doctors who treat them so that patients will obey all suggestions and advice, and regulate emotions.[2]

The cooperative relationship between the dentist and the patient can occur smoothly if the patient already has confidence in her dentist. Trust is also influenced by the way dentists provide instructions and information to patients.[3] A communicator to achieve effective communication must have trust, attractiveness, and strength.[4] Other factors such as patients who are accompanied by friends or family members when entering the dentist's office will help facilitate good communication between dentists and patients.[5]

Dental practice without good communication will be difficult to achieve its goals and the success of preventive dentistry can only be achieved by providing instructions and education to patients, in this case, to achieve the goals is very dependent on the effectiveness of two-way communication.[3] According to Wright, McDonald, and Avery interpersonal relationships between children, parents, as well as operators (Dentists), are part of the basic pattern of behavioral management or

orthodontic treatment in children.[6]

Malocclusion is a condition of dentofacial disharmony that can interfere with mastication, swallowing, speech, and facial alignment. This can be a barrier to the patient's physical or emotional health that requires treatment. During the mixed dentition period, especially in children aged around 6 years, anterior dental crossbite involving 1 or 2 permanent teeth is a frequent case in the clinic. Dentists must be able to identify, diagnose and prevent these occlusion problems because some experts recommend repairing these malocclusion problems as soon as possible.[7,8]

Malocclusion can be corrected with orthodontic treatment equipment according to the indication. Treatment of anterior crossbite in mixed dentition is highly recommended because this malocclusion cannot be corrected with growth or age. Untreated anterior crossbite will result in abnormal lower incisor function, and mandibular incisor compensation leading to labial alveolar bone reduction and/or gingival recession.[9,8]

There are several possible and recommended approaches for the treatment of simple anterior dental crossbite, namely: (1) tongue blade therapy, (2) lower incline plane, (3) reverse stainless steel crown, (4) Hawley retainer with auxiliary spring, and (5) labial and lingual archwires.[11]

The purpose of this case report is to report orthodontic treatment in a case of Angle grade 1 malocclusion type 1 and 3 with good motivation in a 9-years-old girl.

CASE REPORT

A 9-year-old girl came to *RSGM Unjani* with a complaint that her right upper front tooth grew behind her lower front teeth and she felt insecure when smiling and uncomfortable when biting. The patient's mother and the patient want a treatment that can return the teeth into a good and normal position.

The patient has no history of disease either in childhood or at present. Dental history such as normal tooth eruption, premature loss, and dental trauma was denied but the patient stated that the permanent teeth had grown before the baby teeth fell out. The patient has no bad habits. Based on the family history, the patient's mother had crowding teeth. Examination of the patient's body mass index in a state of ideal weight, normal growth and development, signs of secondary maturation already exist, and normal gait. The patient expects treatment so that the maxillary and mandibular front teeth are neat because of themselves. (Figure 1)

Figure 1. Extra-oral photos of the patient

Before the examination, the dentist had given informed consent to the patient's mother. The results of the extra-oral examination showed that the patient's head was mesocephalic with a mesomorphic face shape and a convex facial profile. The patient's lips are symmetrical, the proportions are normal, the relation is competent, and the tone is normal. The patient's nose was normal, with a rounded nostril and an obtuse nasolabial angle. On palpation of the temporomandibular joint, there were no abnormalities. On intra-oral examination, there was a plaque on the posterior lingual of the mandible. The maxillary and mandibular labial frenulum approach the mucobuccofold, and the right and left buccal include high classification. The U-shaped palate, medium size, medium depth; There are no ulcerations, fissures, and papillae/rugae, there are no abnormalities (Figure 2).

Figure 2. Photos before treatment.

The patient's upper and lower jaws showed sufficient space, only tooth 11 palatoverted resulting in negative overjet and tooth 32 distal out, tooth 31 mesial out, tooth 41 mesial in, tooth 42 mesial in, and tooth 43 mesial out. Based on Angle malocclusion calcification, the diagnosis in this patient was Angle class 1 malocclusion types 1 and 3.

At this age, the patient is in the ugly duckling face phase and is seen in the patient's upper and lower jaws according to the phase of her age so that in the future there may be enough space for permanent teeth to grow.

Figure 3. Intraoral photos after treatment.

In this case, education was carried out to the patient and his mother regarding the use of a tongue blade to push tooth 11 toward the labial direction to correct the palatoverted tooth 11.

Education and use of the tongue blade were carried out from March with the cooperation of the patient and the patient's parents. The follow-up in July after 4 months of education and instructions for using tongue blade malocclusion on tooth 11 could be corrected which was indicated by the position of tooth 11 already through the mandibular incisors (Figure 3).

DISCUSSION

Building good interpersonal relationships between doctors and patients can be seen as an important goal of communication. Rooter and Hall stated that communication is the main basic ingredient in health care, communication is the basic instrument by which doctor-patient relationships are made, and where therapeutic goals are achieved. Berry revealed that there are 3 (three) purposes of doctor and patient communication, namely: (1) creating a good interpersonal relationship (creating a good interpersonal relationship), (2) exchanging information (exchange of information), and (3) decision making. medical (medical decision-making).[12]

Interpersonal relationship materials that operators need to pay attention to so that the success rate of orthodontic procedures is high include: a) Operator and parental attitudes (eg: caring, friendly, friendly, etc.), b) Organized planning (eg: orthodontic action plans are discussed together between children, parents, and operators), c) a positive approach (eg holding emotions, patient, etc.), d) belief in the ability to succeed (eg showing convincing skills to children, etc.), e) tolerance attitude (eg giving tolerance according to the actual situation in children, etc.), and f) Flexibility in giving instructions (eg not rigid in giving instructions to children or parents, etc.) g) Communication systems (eg constantly repeating instructions in children's language, etc.), h) The "Tell Show Do" approach system

(everything that will be done must be explained first, then shown and done according to what is explained and shown) .[6]

The results of research and observations show that communication between doctors and patients in Indonesia has not become a major concern. Communication competence tends to be neglected results Based to the Indonesian medical council. It is known that some doctors in Indonesia feel they don't have enough time to chat with their patients resulting in them only asking what is necessary. Doctors are very likely not to get enough information to make a diagnosis and determine further planning and action. In addition, patients generally feel they are in a lower position in front of doctors, so they are afraid to ask questions and only answer doctors' questions. It is not easy for doctors to find records from patients because a thorough understanding is not obtained in a short time.[13]

Effective communication can influence the patient's emotions in making decisions about the next action plan, while ineffective communication will invite problems. Effective communication needs to be built with openness, honesty, and understanding of each other's needs, expectations, and interests. With the establishment of effective communication, patients will provide correct and complete information so that they can assist doctors in diagnosing the patient's illness properly and giving the right medication to the patient. Good communication and taking place on an equal footing are very necessary so that patients are willing and able to tell their pain and complaints honestly and clearly.[14]

According to Ong et al., communication between doctors and patients is a type of communication that takes place transactionally, face to face, and takes place directly. This type of communication involves two people in different positions, is not voluntary, and contains important messages that require good cooperation.[15] Communication between doctors and patients is a complex form of interpersonal health communication. The communication process is controlled by how the relationship takes place in the communication process. In evaluating the pattern of communication control between doctors and patients according to Roter and Hall, they describe four basic forms of the relationship between doctors and patients, namely the standard form (default), paternalistic form (paternalistic), and consumerism (consumerist), and mutualistic (mutualistic). The standard relationship in the form of a doctor-patient

relationship is characterized by a lack of control between both parties on the part of both the doctor and the patient and is far from ideal. The paternalistic form is characterized by a relationship between a dominant physician and a passive patient. The form of consumerism is associated with the rights and obligations of doctors to patients, this indicates that this form is the opposite of the paternalistic form. While the mutualistic form is characterized by the relationship between doctors and patients who share in joint decision making and both parties understand each other's roles.[16,17]

Primary health services based on the principles of Family Medicine have four service characteristics (4C), namely, contact, comprehensive, continuous, and collaborative. Comprehensive health services referred to in these characteristics are providing complete services including preventive, curative, palliative, and rehabilitative promotive with a holistic approach, namely viewing the patient as a biopsychosocial and existential unit. In providing comprehensive services, doctors who are in primary health care face challenges that are not easy, especially changes in healthy lifestyle behavior and disease treatment, patient compliance with chronic diseases, as well as dealing with patients with different cultural backgrounds.[18]

Crossbite is an abnormality of the buccolingual relationship between the maxillary teeth and the mandibular teeth. Graber defines crossbite as a condition in which one or more teeth are in an abnormal position in either the buccal, lingual, or labial direction to the opposing teeth. The prevalence of anterior crossbite in children ranges from 4% to 26%. Brito et al reported a prevalence of anterior crossbite of10.1% in a study of 407 children aged 9 to 12 years who were randomly selected and observed by trained professionals. Oshagh et al examined the medical records of 700 patients aged 6 to 14 years at the Department of Orthodontics at Shiraz University in Shiraz, Iran, and found an anterior crossbite prevalence of 17%.[11]

The etiology of anterior crossbite can be classified into dental and skeletal factors. A dental crossbite is a crossbite involving one or more teeth and is usually caused by an abnormal direction of tooth eruption. This abnormality can also be caused by the tipping position of the teeth and does not involve the basal bone. Dental crossbite usually occurs when the permanent incisors erupt and is not dangerous to the patient's general health, and the problems caused are usually periodontal and esthetic related. Skeletal crossbite is a crossbite associated with maxillary and mandibular size

discrepancies. Skeletal crossbites are usually genetic or result from abnormalities in embryonic development. This disorder can occur in the anterior or posterior region and is usually caused by stunted maxillary growth or mandibular overgrowth.[11]

Anterior crossbite can be caused by one or a combination of several etiologic factors, including abnormal growth of the jaw due to hereditary factors or trauma at birth causing the maxilla to grow stunted and become smaller than the mandible and resulting in all the teeth in the maxilla falling on the right side, linguality of the lower jaw, abnormalities in the muscles of mastication or neuromuscular disorders can cause abnormalities in a masticatory function that can cause a person to chew in a crossbite manner. The growth of the upper incisors is hindered by the lower incisors from moving forward, the persistence of the primary teeth can cause the replacement teeth to erupt by taking a crossbite position. This situation can occur in anterior teeth and posterior teeth, bad habits such as sleeping on one arm, and supporting the chin, in patients who have premature extraction of deciduous teeth causing displacement of the remaining teeth, and lack of space for the remaining teeth. will grow can cause these teeth to take place with a crossbite position.[19,20]

The essence of treatment in cases of crossbite is to open the bite and bring the crossbite tooth through the plane of occlusion to the right position. There are several possible and recommended approaches for the treatment of simple anterior dental crossbite, one of which is tongue blade therapy, which only involves 1 tooth, and can be corrected in this way. The patient was instructed to place the tongue blade 45 degrees behind the crossbite tooth. A tongue blade is a flat wooden stick that resembles an ice cream stick. Its use is by inserting the appliance into the mouth and touching the appliance to the palatal aspect of the crossbite upper tooth. At the time of jaw closure, the opposing tongue blade will touch the labial aspect of the antagonist mandibular anterior tooth which will serve as the fulcrum. The patient was then instructed to move the oral portion of the tongue blade in a labial direction and to use the lower incisors as support, thereby propelling the maxillary teeth labially. This was done 1 or 2 hours a day for 10 or 14 days. There was no precise control over the amount and direction of the applied force. In carrying out this treatment, a collaboration between patients, parents, and dentists is needed to achieve optimal results.[21]

Anterior dental crossbite treatment involving 1 or more teeth can be done using a cemented acrylic incline plane or

commonly called a lower incline plane. This appliance can be made on a jaw model or it can be done directly on the patient's teeth in 1 visit. The fabrication must cover the six lower anterior teeth (if the canines are still present) polished and cemented in place. This is to prevent lingual movement of the lower incisors during treatment. This method can cause an open bite if used for more than 2 or 3 weeks.[21]

Composite or stainless-steel crown. This device is paired by cementing the anterior SSC in reverse on the central incisor or the crossbite, where the labial surface is facing the palate and the palatal surface is facing the labial one. SSC is the choice to treat simple anterior crossbite malocclusion because it can produce reciprocal pressure that will move the teeth. When the SSC was inverted on a locked maxillary anterior tooth, the labial surface of the crown served as a guiding plane that would bring the locked tooth into a normal overjet and overbite relationship. A method with inverted stainless steel crown cementation of the incisors held in the lingual position at an angle of 45° to the occlusal plane. This method overcomes the weakness of the incline plane method and is difficult to apply in cases of partially erupted maxillary incisors.[21]

A removable orthodontic appliance with a double Cantilever Spring or often called Z-spring is one of the most commonly used devices to correct an anterior dental crossbite. The Z springs can be used if there is room to move the teeth in a labial direction. The Z springs are made of 0.5 mm clamps and are designed to move one or two incisors. This spring consists of two helices which are between two parallel arms and a retentive arm. This spring should be placed perpendicular to the palatal surface of the teeth. The Z spring is activated by opening the two helixes by 2-3 mm. To work properly, this removable appliance must have the retention that can be achieved by using Adam's clamp placed on the molars. If the clamp does not work properly, the force from the activated spring will cause the device to detach. This spring consists of a double helix between two parallel arms and a forearm that serves as retention on the acrylic plate. The spring can be activated by clamping the outer arm and pulling it in the opposite direction to the acrylic plate.[21]

The main advantage of early treatment of anterior crossbite is the opportunity to affect the maxillary growth process and reduce or prevent dentofacial abnormalities in the future as early as possible. It will be sufficient to produce satisfactory changes, both functional and esthetic and treatment are simple or sometimes even not required tools. If left

untreated, crossbites can cause various health problems, namely misaligned bites that can leave lasting scars that escalate to permanent deformities of the bones and skull on the face, speech disturbances, unbalanced facial appearance, headaches, and muscle tension due to abnormal pressure placed on the jaw. In severe cases, crossbites can affect the jaw and facial development, especially in young patients.[11]

CONCLUSION

Cases of anterior crossbite in permanent teeth are quite common in children who are growing and developing. Early treatment to stimulate the balance of growth and occlusal development is necessary to modify the direction of growth to prevent further malocclusion. Interpersonal relationships between children, parents, and operators (Dentist) are very necessary when orthodontic treatment in children. Treatment using a tongue blade in children growing up with and followed by patient cooperation and parental support can correct the malocclusion that occurs.

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