Endodontic management of dilacerated and bayonet shaped roots

Tratamento endodôntico de raízes dilaceradas e em forma de baioneta

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ABSTRACT

Successful root canal therapy requires a thorough knowledge of root anatomy and root canal morphology which may be quiet variable. The significance of internal root canal morphology has been emphasized by studies demonstrating that variations in canal morphology may affect the endodontic outcome. Consequently, in treating each tooth the clinician must assume that complex anatomy occurs often enough to be considered normal. Root dilaceration is one of the variations that may complicate the endodontic therapy. It is important for a clinician to have complete knowledge of internal anatomy relationships, careful interpretation of radiographs; proper access preparation and a detailed exploration of the interior of the tooth to achieve a successful treatment outcome. This paper reports successful endodontic therapy of severe dilaceration of the root of mandibular first molar and bayonet shaped root of maxillary first premolar and highlights the clinical considerations to be followed during the endodontic procedures to get the successful outcome.

***Indexing terms**: Dental pulp cavity. Root canal therapy. Tooth root.*

RESUMO

Um tratamento de canal bem sucedido requer conhecimento profundo da anatomia da raiz dentária e morfologia do canal radicular, que pode ser variável. A importância da morfologia interna do canal radicular tem sido enfatizada por estudos que demonstram que as variações na morfologia do canal podem afetar o resultado do tratamento endodôntico. Consequentemente, no tratamento de cada dente, o clínico deve assumir que uma anatomia complexa ocorre com frequência suficiente para ser considerada normal. A dilaceração da raiz dentária é uma das variações que podem complicar o tratamento endodôntico. É importante para o clínico ter conhecimento completo das relações da anatomia interna, fazer uma interpretação cuidadosa de radiografias; preparar adequadamente o acesso e realizar uma exploração detalhada do interior do dente para conseguir um resultado de tratamento bem sucedido. Este artigo relata casos de terapia endodôntica bem sucedida de dilaceração severa da raiz do primeiro molar inferior e de raiz em forma de baioneta de um primeiro pré-molar superior e destaca as considerações clínicas a serem seguidas durante os procedimentos endodônticos para se obter êxito no tratamento.

Termos de Indexação: Cavidade pulpar. Tratamento do canal radicular. Raiz dentária.

INTRODUCTION

The term dilacerations refers to an abrupt change in the axial inclination or curve in the crown or root of a tooth. It was first used by Tomes in 1848[1]and refers to an angulation that may occur anywhere along the length of the tooth, that is, its crown, amelocemental junction, along the root, or by only involving the apex of the root[1-2]. The exact etiology of dilacerations is still controversial but the most accepted cause is mechanical trauma to the primary predecessor tooth[3-6]. However, this pathogenesis has been questioned[7-8]. The other possible contributing factors that have been proposed include the ectopic development of the tooth germ, presence of scar/ infection/ cyst/ tumour, developmental anomaly of tooth germ, lack of space, syndrome and hereditary factors[9]. The prevalence of dilacerations ranges from 0.32% to 7% but only 0.45% in mandibular first molar, mandibular third molars are affected most often, while the maxillary arch is affected more than the mandibular arch. Furthermore, permanent teeth are affected more frequently than primary teeth and posterior teeth more than anterior teeth with no gender predilection[10-13]. Dilaceration may occur bilaterally in some patients[14]. The recognition and diagnosis of a dilacerations

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are essential for any tooth that requires root canal therapy, as failure to diagnose root dilacerations contributes to higher rate of unfavourable outcome of endodontic treatment[13]. Although dilacerations of a crown can be observed visually in the oral cavity, radiographic examination is required to diagnose a dilacerated root. The direction of root dilacerations can be in single plane or two planes. If the root bends mesially or distally, the dilacerations can be clearly apparent on a periapical radiograph while in buccal / palatal (lingual) direction it gives bull's eye appearance. When the root dilaceration is in labial direction, it is called a scorpion tooth. If a tooth is doubly affected, it is called a bayonet dilaceration[15]. According to severity; dilaceration can be mild, moderate, or severe. This paper reports successful endodontic management of mandibular first molar with severe dilacerations of root at the apex and bayonet dilaceration in maxillary premolar.

CASE REPORT

Case 1

A 46 year old female patient reported to the clinic, with a chief complaint of pain on chewing in the lower right back tooth since last two weeks. Medical and family histories were noncontributory. Intraoral examination revealed a deep carious lesion with respect to the mandibular right first molar. On pulp status evaluation, the tooth showed no response with heat, cold and electric pulp tests (Parkell Electronics Division, Farmingdale, NY). The tooth was sensitive to percussion suggestive of symptomatic apical periodontitis. Intraoral periapical radiograph (IOPA) was advised and it revealed the presence of the coronal radiolucency involving the pulp, suggestive of caries perforating the pulp chamber with widening of periodontal ligament space confirming the diagnosis of symptomatic apical periodontitis. After careful reading of preoperative radiograph, presence of dilacerations was seen in distal root and severe curvature in mesial root of mandibular right first molar (Figure 1). Treatment plan was then formulated. Root canal therapy was advised for the mandibular right first molar (tooth 46). The tooth was anaesthetized with lignocaine 2% with epinephrine 1:100 000 and a conventional endodontic access opening was made using round carbide (ISO 014) and Endo-Z FG burs (Cavity Access Z Set, Dentsply Maillefer, Ballaigues, Switzerland) under rubber-dam isolation. Two canals, mesial and distal were located. Then to get the straight line access to the apical foramen the conventional triangular access was extended more mesially. Canal patency was established using # 10 K file. Working lengths were determined with a #15 K file by using the technique of Ingle and Bakland (Figure 2)[16]. The working lengths were kept 1 mm short of radiographic apex. It was decided to use flexible NiTi instruments. All rotary endodontic files were used using Tri Auto ZX, a cordless endodontic treatment handpiece (J. Morita USA, Inc.). For each file the individual torque limit and rotational speed (280 +/- 50 rpm) already programmed in the endodontic motor were used. RaCe endodontic instruments (FKG Dentaire, Swiss dental Products) were used in a crown down manner according to the manufacturer's instructions using a gentle in-and-out motion to shape the root canals. Instruments were withdrawn when resistance was felt and changed for the next instrument. A 0.10 taper size 40 instrument was used to one third of the working length followed by 0.08 taper size 35 instrument to one third to one half of the working length (coronal third of the root canal). Subsequently 0.06 taper size 30 instrument was used to one half to two thirds and 0.04 taper size 25 instrument to two thirds of the working length (middle third). Further apical preparation of both root canal was done using Xtreme Race rotary instruments (FKG Dentaire, Swiss dental Products) in a sequence of 15/.02 > 20/.02 > 25/.02 to the full working lengths with periodic recapitulation of # 15 K flex file (Dentsply Maillefer, Ballaigues, Switzerland). The canals were thoroughly irrigated with 2.5% sodium hypochlorite, 17% aqueous solution of EDTA, 0.2%weight/volume chlorhexidine gluconate (Vishal Dentocare PVT, LTD, India) and saline as a final irrigant using 26 gauge needles. The canals were dried using sterile paper points (Dentsply Maillefer, Ballaigues, Switzerland). Calcium hydroxide powder (Raman Research, Kolkata, India) was mixed with propylene glycol, made into a paste, and placed in the root canals as the interim filling by using a lentulospiral (Dentsply Maillefer, Ballaigues, Switzerland). The access cavity was temporarily sealed with Cavit (3M ESPE, St Paul, MN, USA). The patient returned after one week, and the canals were then irrigated with 17% aqueous solution of EDTA and saline as a final irrigant to remove the remnants of the calcium hydroxide. The canal were dried using paper points (Dentsply Maillefer, Ballaigues, Switzerland) and obturated with previously selected guttapercha cones (Dentsply Maillefer, Ballaigues, Switzerland) and AH Plus sealer (Dentsply, DeTrey, GmbH, Konstanz, Germany) with the lateral and vertical compaction technique. Coronal cavity was temporarily restored using Cavit (3M ESPE, St Paul, MN, USA). In the next appointment post space preparation was

done for the distal canal, and a prefabricated metal post (Produits Dentaires S.A., Switzerland) was cemented. The core build up was done using composite resin (3M ESPE, St, Paul, MN, USA). The final restoration was delivered in the form of porcelain fused to metal crown (Figure 3). One year follow up radiograph revealed successful healing.

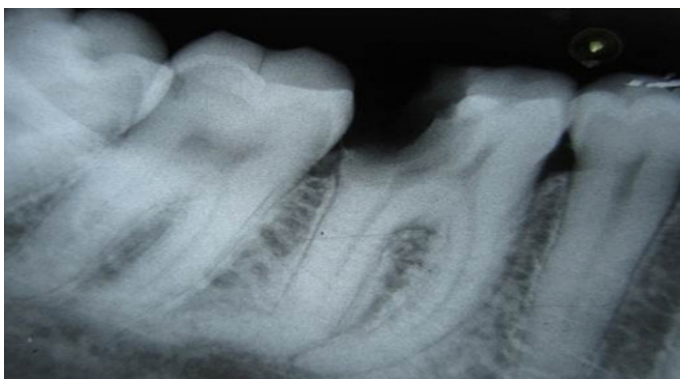

Figure 1. Preoperative intraoral periapical radiograph showing carious lesion encroaching upon the pulp tissue and dilacerated roots.

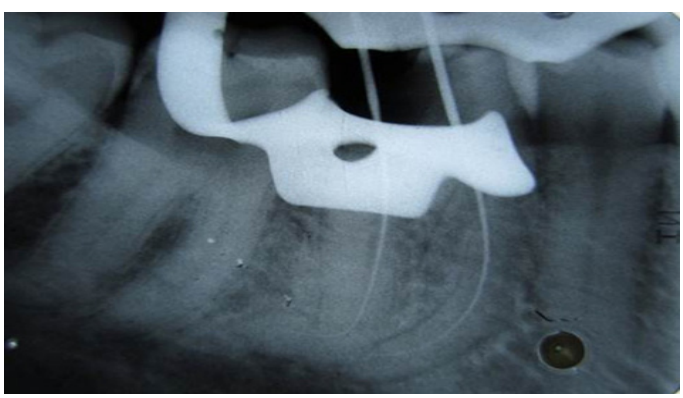

Figure 2. Intraoral periapical radiograph showing working length determination.

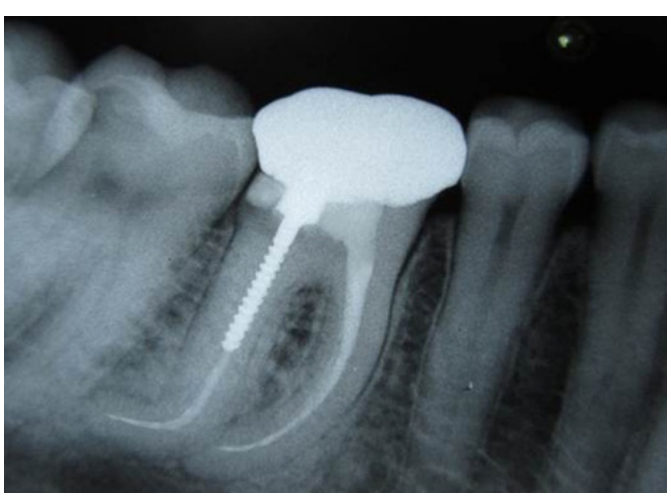

Figure 3. Intraoral periapical radiograph showing complete obturation of dilacerated canal with post and final restoration.

Case 2

A 38 year old female reported to the department, with a chief complaint of decay in the upper right back tooth. The patient gave a history of severe pain since the last two days on drinking hot liquids. Medical and family histories were noncontributory. On intraoral examination, a deep carious lesion was seen in maxillary right first premolar (tooth 14). Pulp status was evaluated using heat test, cold and electric pulp tests (Parkell Electronics Division, Farmingdale, NY, USA). The tooth showed an exaggerated response to heat testing with lingering pain suggestive of symptomatic irreversible pulpitis. An intraoral periapical (IOPA) radiograph was advised for the tooth, which revealed the presence of a coronal radiolucency involving the pulp chamber, suggestive of caries encroaching upon the pulp tissue confirming the diagnosis of irreversible pulpitis. The roots were double curved (Bayonet or 'S' shaped) (Figure 4). Faulty restorations were seen on the proximal aspect of maxillary right canine (tooth 13) and second premolar (tooth 15), not involving the pulp chamber. Treatment plan was then formulated. Maxillary right first premolar was advised for endodontic therapy and maxillary right canine and second premolar were advised for re-restorations. The tooth was anaesthetized with lignocaine 2% with epinephrine 1:100 000 and a conventional endodontic access opening was made using round carbide (ISO 014) and Endo-Z FG burs (Cavity Access Z Set, Dentsply Maillefer, Ballaigues, Switzerland) under rubber-dam isolation. Canal patency was established using # 10 K file. Working lengths were determined by using the technique of Ingle and Bakland[16], using #15 stainless steel K-files and the working lengths were kept 1 mm short of radiographic apex. Shaping and cleaning of the root canals were done using Xtreme Race rotary instruments (FKG Dentaire, Swiss dental Products) similarly as done in the case report 1. Coronal enlargement was done for both the canals using Pre-Race rotary instruments (FKG Dentaire, Swiss dental Products), which reduced the angle of curvature to the first curve, and enabled easier approach to the second curve. The canals were irrigated with 2.5% sodium hypochlorite, 17% aqueous solution of EDTA, 0.2% weight/volume chlorhexidine gluconate (Vishal Dentocare PVT, LTD India) and saline as a final irrigant using 26 gauge needles. The canals were dried using sterile paper points (Dentsply Maillefer, Ballaigues, Switzerland). Calcium hydroxide powder (Raman Research, Kolkata, India) was mixed with propylene glycol, made into a paste, and placed in the root canals as the interim filling by using a lentulospiral (Dentsply Maillefer, Ballaigues, Switzerland). The access

cavity was temporarily sealed with Cavit (3M ESPE, St Paul, MN, USA). The patient returned after one week, and the canals were then irrigated with 17% aqueous solution of EDTA and saline as a final irrigant to remove the remnants of the calcium hydroxide. The canals were dried using sterile paper points (Dentsply Maillefer, Ballaigues, Switzerland), master cones were selected (Figure 5) and obturated with guttapercha cones (Dentsply Maillefer, Ballaigues, Switzerland) and AH Plus sealer (Dentsply, DeTrey, GmbH, Konstanz, Germany) using lateral and vertical compaction technique. The access cavity was cleaned with damped cotton pellet and then restored with composite resin (3M ESPE, St, Paul, MN, USA). Post-endodontic restoration was delivered in the form of porcelain fused to metal crown (Figure 6).

Figure 4. Preoperative intraoral periapical radiograph showing carious lesion encroaching upon the pulp tissue and bayonet shaped roots.

Figure 5. Intraoral periapical radiograph showing master cone selection.

Figure 6. Intraoral periapical radiograph showing complete obturation of bayonet shaped canals with final restorations.

DISCUSSION

The main goal of endodontic therapy is thorough chemomechanical debridement of the entire root canal system followed by a three-dimensional obturation with an inert filling material and a final coronal restoration, thereby preventing access to microorganisms. To achieve this goal it is necessary for the clinician to have thorough knowledge of root canal morphology and its variations. Root dilaceration is one of the variations that may complicate the endodontic therapy hence diagnosing it before endodontic treatment is an important objective for the successful outcome[17]. The criteria for recognizing root dilaceration vary in the literature. According to some authors a tooth is considered to have a dilacerations, if there is a 90-degree angle or greater along the axis of the tooth or root[10-13], whereas others defined dilaceration as a deviation from the normal axis of the tooth of 20 degrees or more in the apical part of the root[12]. A frequent error that may occur during endodontic procedure in dilacerated root is the failure to maintain root canal curvature, resulting in ledge formation, apical transportation, zipping, perforation, and instrument breakage[18]. To avoid these mishaps, the basic principles of endodontic therapy must be followed, that is good preoperative radiograph, straight line access to apical foramen, pre-curving the endodontic hand instrument, file recapitulation, thorough irrigation and use of flexible Ni- Ti instruments[9,19]. Hence in the present cases all these principles were followed. Access cavities were modified

to reach the apical foramen; enough tooth structure was removed to get the straight line access to apical foramen, giving the access cavity a cloverleaf appearance. This modified outline form of access cavity is known as shamrock preparation which allows the endodontic instrument unrestrained in the severely curved canals[16]. In dilacerated teeth it is often difficult to explore and negotiate the canal to its apical foramen; hence the use of scout file is recommended in these kind of cases[19]. In the present cases # 10k file was inserted in watch-winding motion to confirm the canal patency. After exploring the canal, crown-down sequence of instrumentation was followed, as early coronal flaring leads to greater tactile awareness of the apical constriction, reduce coronal binding of instruments, less risk of inoculation of endodontic pathogens into the periradicular tissues, enhance penetration of irrigant into the root canal system, less likelihood for a change in the working length measurement during preparation and more effective performance of electronic apex locators[20]. In the present cases NiTi X^{treme} RaCe instruments (FKG Dentaire, Swiss Dental Product) were used. Reamer with Alternating Cutting Edges (RaCe) is NiTi endodontic rotary instruments having noncutting safety tip, non-threading blade with triangular section. RaCe instruments are supplied as easy RaCe and X^{treme} RaCe. Easy RaCe is used in slight or moderately curved canals while X^{treme} in severely curved root canals. Studies have shown that ccombination of triangular section, alternating cutting edges and flexibility of RaCe ensures efficient evacuation of chips and cutting debris, allows better penetration, effective cutting and maintains the original canal curvature[21-23]. Use of Tri Auto ZX automatic endodontic treatment handpiece is also very useful due to its three main functions: automatic start and stop, automatic torque reverse (automatically stops and reverses the rotation of the nickel titanium file when too much pressure is applied) and automatic apical reverse (automatically stops and reverses the rotation of the file when the file tip reaches a distance from the apex present by the clinician. In the present cases multiple visits approach was followed with the use of inter-appointment intracanal medicament using calcium hydroxide to ensure complete elimination of microorganisms. Calcium hydroxide was used with propylene glycol; a vehicle that allows calcium and hydroxyl ions to release slowly, enables them to remain in the periapical region for considerable time and thereby exerts a beneficial action[24]. Thereafter, root canals were obturated using lateral compaction technique. Flexible NiTi spreaders were used because they penetrate to greater depths and distribute forces more evenly than stainless spreader in severely curved canals[16]. Dilacerated teeth are uncommon but the presence of severe root dilacerations increases the risk of mishaps during the endodontic procedure. Hence thorough examination and sound treatment planning are strongly advocated. Clinicians should be aware of all the basic principles, modification and latest technology of endodontic therapy to manage these kinds of cases.

Collaborators

A PAROLIA and M KHOSLA performed the endodontic therapy for these teeth, also contributed significantly in the preparation of the manuscript and its review. ICCM PORTO and K MALA supervised the implementation and systematic interpretation of the manuscript. They significantly contributed in the review of this manuscript. All authors have read and approved the final manuscript.

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Non-nutritive sucking associated with self-mutilating behavior

Hábito de sucção não-nutritiva associada à automutilação

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ABSTRACT

Although sucking activity has been considered an essential behavior of early childhood to satisfy nutritive and non-nutritive needs, digit and pacifier sucking are deleterious oral habits that may interfere with child development. Furthermore, this clinical picture may be compounded by other concerning habits, such as self-mutilating behavior. This article reports 4-year follow-up of a child in whom non-nutritive sucking was associated with an unusual self-mutilating behavior; namely, the child would pull out her own hair after wrapping it around her finger every time she sucked on the pacifier. This occurred specially at bedtime, while she was watching TV, or when she was somewhat anxious, and remitted and recurred throughout the follow-up period. In an attempt to address this behavior, pacifier use was discontinued and the child's head was shaved. Ultimately, the case was only solved through combined efforts involving the child, her family, and health professionals. Based on the parents' reports and clinical examination and follow-up findings, we emphasize the importance of investigating the origin of the problem and considering emotional aspects and its association with other habits in such cases.

***Indexing terms**: Child. Pacifiers. Self mutilation.*

RESUMO

Apesar de a atividade de sucção ser considerada um comportamento essencial da primeira infância por satisfazer as necessidades nutritivas e não-nutritivas, a sucção do dedo e chupeta são hábitos deletérios ao desenvolvimento da criança. Além disso, esse quadro clínico pode ser ainda mais preocupante se houver associação com outros hábitos, como o da automutilação. Neste contexto, no presente artigo são relatados 4 anos de acompanhamento de uma criança que costumava arrancar seus cabelos depois de enrolá-los nos dedos enquanto estava com a chupeta na boca, sem demonstrar sinal algum de sintomatologia dolorosa. Tal fato ocorria especialmente próximo a períodos de sono, ansiedade ou quando assistia à televisão, havendo períodos de remissão e exacerbação. Na tentativa de solucionar o caso foi proposta, além da interrupção do uso da chupeta, a raspagem de todo o cabelo da criança. Contudo, a solução definitiva só foi possível quando houve o envolvimento coletivo, abrangendo criança, família e profissionais da saúde. Baseando-se no relato dos pais, no exame clínico e no acompanhamento do caso, enfatiza-se a importância de se investigar a origem do problema, considerando os aspectos emocionais e sua associação com outros hábitos..

Termos de Indexação: Criança. Chupetas. Automutilação.

INTRODUCTION

Sucking activity in the first years of life is considered an essential behavior of early childhood to meet nutritive and non-nutritive needs[1]. However, habitual digit and pacifier sucking are considered extremely deleterious to normal child development[2].

Prolonged or chronic digit or pacifier sucking may predispose to dental conditions such as dental caries[2] and malocclusion[3-5], and is associated with acute otitis media[6] and with some psychological disorders, including depression, as well as colic[7-9]. Pacifier use has been associated with development of latex allergy in infants[10], and pacifiers may serve as fomites for dissemination of microorganisms among children, leading to bacterial and fungal infections and reinfections[8], as in previous reports of increased Candida albicans colonization associated with pacifier use[9]. According to Kramer et al.[11], pacifier use discourages breastfeeding and contributes to early weaning. Furthermore, infants who are weaned early are more likely to use pacifiers than those who are breastfed for longer.

In view of the foregoing, digit and pacifier sucking are habits to be avoided. When complete avoidance is not possible, they should be kept to a minimum; neither habit

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should be encouraged beyond the first year of life. This article seeks to report the 4-year follow-up of a child who exhibited self-mutilating behavior (infant trichotillomania) associated with pacifier use.

CASE REPORT

A female infant was referred with a complaint of trichotillomania associated with pacifier use. While sucking her pacifier, the child would wrap her head hair around her fingers and pull it out without displaying any outward sign of pain (Figure 1). Both parents worked outside the home and the child had been in daycare since age 40 days.

The child had no medical conditions and no past medical history or family history of note. As soon as they noticed the child's hair loss, the parents sought the advice of their pediatrician, who attributed this behavior to pacifier use.

After a comprehensive assessment, the parents were informed of the risks and consequences of this self-mutilating habit and of the importance of terminating it as soon as possible. The pediatrician also recommended that the child's head be shaved completely. The child's parents followed all recommendations, but only head-shaving was successful, and temporarily so, as the child reverted to her previous behavior as soon as her hair had grown long enough to pull.

At age 18 months, the child was taken out of daycare because her mother had stopped working outside the home. Interestingly, as the child was able to spend more time with her mother, her hair-pulling behavior ceased completely and her pacifier use was rapidly and substantially reduced, until it was limited to bedtime.

At age 4 years, the child was sent to preschool as her mother had to return to work. Subsequently, the child reverted to occasional hair-pulling during pacifier use. The behavior was particularly pronounced at bedtime, while watching TV, or when the child was somewhat anxious, and was quickly curtailed by the mother, who warned the child and told her why she should not pull out her hair. Nevertheless, slight hair loss on the forehead and back of the neck was noticed.

In view of the persistence of this behavior and its manifest consequences, the parents sought advice from a pediatric dentistry specialist, who helped them along the encouragement process to assist the child in discontinuing pacifier use definitively. Within 1 year, both behaviors (pacifier use and hair-pulling) had ceased completely. The child's understanding and cooperation were determining factors in the success of this intervention.

Throughout the follow-up period, the child exhibited recurring episodes of severe otitis media. Furthermore, due to her pacifier use, she had maxillary constriction and a mild acquired deformity of the hard palate. Orthodontic treatment was planned to address these conditions.

The authors stress that all procedures were conducted in accordance with the ethical principles of the Declaration of Helsinki (2000) and with current Brazilian legislation. The child's legal guardians provided written informed consent for the publication of this report.

Figure 1. Clinical aspect of the child showing hair loss due to self-mutilating behavior.

DISCUSSION

Sucking is an important reflex in the first weeks of life. Breastfeeding confers benefits both in terms of its nutritive aspect and by satisfying the child's sucking instinct[12]. The World Health Organization[13] recommends exclusive breastfeeding in the first 6 months of life and mixed feeding (supplemented by other foods) thereafter until age 2. Children who are not breastfed, for a variety of reasons, usually meet their sucking needs by using a dummy or pacifier. There is strong evidence that pacifier use reduced motivation for breastfeeding and contributes to early weaning and other non-nutritive sucking habits[1,3,11]. According to Juberg et al.[1], pacifier use is among the most common oral habits in the first 36 months of life. This is because the decision to use a pacifier rests entirely with the child's parents or guardians, who provide it. Pacifiers are a common item in layette sets, and their use is often widely encouraged by family members.

The most serious hazards of this non-nutritive sucking habit are interference with breastfeeding, dental deformities, and the risk of accidents. Latex allergy, tooth loss, oral ulcers, and sleep disorders are also associated with

pacifier use[14], which also increases fungal colonization and proliferation in the oral cavity[10]. Furthermore, this habit has been associated with acute otitis media; the incidence and severity of infection were found to decrease after a reduction in daily pacifier use, which suggests that pacifier sucking is a risk factor for ear infection[6]. The child described in this report also had recurrent episodes of otitis media, which led to several doctor's appointments and courses of pharmacological therapy. The child's ear infections only improved after her pacifier sucking habit was reduced.

With continuous pacifier sucking, the child developed dental–skeletal alterations over time, including anterior open bite and posterior crossbite. These changes are commonly observed in children with a pacifier sucking habit, and depend on the frequency, duration, and intensity of pacifier use, as well as on the position of the teeth, on heredity, and on the child's age and overall health[12,15-17]. Likewise, spontaneous correction after cessation of the habit depends on the aforementioned variables and on the severity of malocclusion. Therefore, it is imperative that parents be informed and instructed as to the consequences of pacifier use so they can intervene at the proper age. Parental intervention notwithstanding, the child's cooperation is essential to the success of any therapy.

Juberg et al.[1] stress that sucking habits decrease with advancing age, following the pattern of normal child development. Indeed, this child's pacifier use decreased over time, to the point where it was eventually restricted to bedtime or to times of particular anxiety. According to several authors[11-12,15,18-21], some children engage in pacifier sucking more intensely than others. This fact may be explained by emotional aspects, as well as by social, domestic, cultural, and economic influences. Pacifier use is known to temporarily curtail crying or fussing in certain situations, but when used regularly, it may encourage or induce deleterious behaviors instead[11].

During the course of follow-up, we observed that the child's most severe pacifier sucking and hair-pulling behaviors coincided with the hours she spent in daycare. Therefore, her behaviors were probably an attempt to secure attention, particularly parental attention, with pacifier use serving as something of a self-comforting habit. We believe that development of this habit was directly related to early weaning of the child and to the absence of her parents, both of whom worked outside the home. The child appeared somewhat emotionally needy. Nevertheless, no psychological care or counseling was provided, despite our recommendations.

The literature stresses that the essential purpose of breastfeeding is to ensure frequent physical contact the mother and child. The reciprocal psychological and physiological benefits of breastfeeding to the mother–child pair in this symbiotic relationship play a vital role in normal child development. Touch is a basic behavioral need, just as breathing is a basic physical necessity; infants are destined to grow and develop socially by means of contact with others, and this need for contact will persist throughout the life course. If children are to develop properly, they must be touched, held, carried, caressed, embraced, and lovingly spoken to, even when breastfeeding is lacking. The emphasis is on the care and embracement provided by touch from the hands, arms, and lap; it appears that, even in the absence of many other stimuli, these are essential calming experiences that infants require to survive with at least some health. Humans are able to survive extreme deprivation of other senses, including deprivation of visual and auditory stimuli, as long as the sensory experience of skin contact is provided[22].

Within this context, we stress the importance of multidisciplinary guidance and monitoring of child development in these cases. As far as the role of the dental practitioner is concerned, it is recommended that children first see a pediatric dentist between the ages of 4 and 6 months[19]. This is a crucial age in which the professional can provide guidance and help prevent certain habits. Pacifiers can be a helpful childcare tool in some situations, but they should not be used as a source of emotional support.

CONCLUSION

We conclude that parental unavailability (particularly on the part of the mother) and early weaning played a key role in the development of deleterious habits (pacifier use and self-mutilating behavior) in this child. The child's emotional habits and lifestyle were modified in an attempt to induce cessation of these habits. This strategy was ultimately successful, but a multidisciplinary approach was required.

Collaborators

RC SILVA, F JEREMIAS, L SANTOS-PINTO, and ACC ZUANON all contributed to the drafting of the manuscript.

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