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Frequency of intrusive dislocation in primary teeth and its effects

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ABSTRACT

Introduction: The intrusive dislocation in primary teeth is when the tooth moves to the interior of the alveolar bone, and can harm the periodontal structure, the pulp tissue and the successor teeth through the destruction and rupture of the fibers of the periodontal ligament and the vascular supply. Objective: the objective of this study is, through a literature review, to analyze aspects related to intrusive dislocation such as epidemiological data, diagnosis, degrees of injury, radiographic examinations, sequelae in permanent teeth and forms of treatment. Literature review: Intrusive dislocation in children is the trauma that happens most frequently, knowledge of the techniques of manipulation of intrusive dislocation is essential to perform a good treatment. The importance of radiographic examination should be emphasized, because without it it is not possible to find out where the root of the tooth has moved. Most of the time as a form of treatment if the root of the intruded tooth has not reached the successor tooth is chosen to wait for the reeruption of the intruded tooth, but if there is any complication during the wait can opt for tooth extraction. Final considerations: Most of the time as a form of treatment it is chosen to wait for the reeruption of the primary teeth when there is no compromise of the permanent successor tooth and opt for extraction only if there is any complication during the wait, due to the proximity of the primary tooth with the permanent tooth it is common to have the occurrence of sequelae in the permanents, That is why it is necessary to have a follow-up until the reeruption of the primary tooth and an orientation to the country, it is also important to emphasize the importance of clinical and radiographic examination because when they are done correctly they can reduce the chances of sequelae in the primary and permanent teeth.

Keywords: Dental trauma, Intrusive dislocation, Pediatric dentistry.

1 INTRODUCTION

The intrusive dislocation in primary teeth occurs when the tooth moves to the interior of the alveolar bone, which can harm the periodontal structure, the pulp tissue and the successor teeth through the destruction and rupture of the fibers of the periodontal ligament and the vascular supply. (LIMA et al, 2013) (Plural Science et al, 2019)

There are 4 ways of treating the deciduous intruded tooth among them are waiting for the intruded tooth to reerupt where the patient must be accompanied by the dentist because some complication may occur during the reeruption, another treatment option is to reposition the intruded tooth, this option can avoid aesthetic and occlusion problems. When talking about the extraction of the primary tooth we have two options the immediate that usually occurs when the intruded tooth is compromising the dental germ of the permanent successor tooth and the mediate that occurs when one

chooses first to wait for the reeruption of the tooth and some complication occurs, thus having the need for tooth extraction (LIMA et al, 2013).

Intrusive dislocation in deciduous dentition comprises most dental traumas, with a frequency ranging from 52% to 72%, in children from 1 to 3 years of age the peak prevalence is 52.6%. Regarding gender, according to the study by Soporowski et al., in 1994 it was noticed that the number of cases in male children is twice as high. In relation to age, intrusive dislocation is common in children aged 1 to 3 years, and the most affected teeth are the upper incisors. (LIMA et al, 2013) (FILHO et al., 2005).

Intrusive dislocation is common among young children, the degree of intrusion is a factor to be analyzed because depending on it the deciduous tooth can suffer great sequelae affecting even the permanent successor teeth, the type of treatment to be chosen is much discussed in the literature, where most of the time it is chosen to wait for the reeruption of the primary teeth when there is no compromise of the permanent successor tooth and opt for extraction only if some complication happens during the wait.

The objective of this study was, through a literature review, to analyze the intrusive type of dental trauma in deciduous dentition, describing the epidemiological data, possible diagnoses, sequelae in the primary and successor teeth and their forms of treatment.

2 LITERATURE REVIEW

Primary teeth are the first teeth to erupt in a child's mouth, these teeth have a high prevalence of trauma, and intrusive dislocation is the most frequent trauma, with a frequency ranging from 62 to 72% (LIMA et al, 2013)

Intrusive dislocation is a trauma that happens when the tooth is entered into the alveolar process by a vital impact dirated, generating maximum damage to the support structures and pulp of the tooth. The most frenetic causes of dental trauma is the fall since children engage in intense physical activities and have little sense of danger (Bonanato et al, 2005).

2.1 EPIDEMIOLOGICAL DATA

Intrusive dislocation in deciduous dentition comprises most dental traumas, with a frequency ranging from 52% to 72%, in children from 1 to 3 years of age the peak prevalence is 52.6%. This type of trauma is more common in children because they have an alveolar process is more spongy, that is, they have larger medullary spaces. (ANDREASEN et al, 2001)

Regarding the frequency of intrusive dislocation in relation to gender, in a study by Soporowski et al. 1994, twice as many were perceived in male children. In Gondim and Moreira (2005) a frequency of 56.25% was observed in male children.

Regarding age, intrusive dislocation is more common in children aged 1 to 3 years, and its

occurrence in children aged 4 years. In deciduous dentition, trauma affects the incisor teeth much more, especially the upper ones. Altun et al., in 2009 fex a research in a pediatric hospital in Turkey, using the medical records of the year 1999 until 2006 and realized that of the 103 children who suffered the trauma of intrusive dislocation, 93.4% had the upper central incisor teeth affected. (LIMA et al, 2013) (SON et al., 2005)

2.2 DIAGNOSIS

To diagnose intrusive dislocation requires a detailed clinical and radiographic examination, before any treatment it is necessary that the dentist check if he hears any injury after trauma, such as any neurological change, such as vomiting, nausea, drowsiness, loss of consciousness, cyanosis, changes in breathing patterns and abnormal eye movements. If the patient has these symptoms should be referred to a doctor. The clinical examination should have the analysis of the tissues, because through palpation it is possible to have a sense of the intensity of the lesion. (LIMA et al, 2013)

During the intraoral examination we must observe that in addition to the total or partial intrusion into your alveolus, there is bleeding thanks to the rupture of the blood vessels, it must present without mobility, firmly attached to the bone and during the test the percussion may present metallic sound, the radiographic examination is necessary to identify the location of the tooth affected by the trauma. (VIDAL et al,2021)

2.3 DEGREES OF INJURY

The instructed primary teeth can present three degrees of depth of the lesion where grade 1 presents a small intrusion where more than 50% of the crown is clinically visible, grade 2 presents a moderate partial intrusion, where less than 50% of the color is visible and grade 3 that presents a total intrusion, in case of grade 3 intrusion is very common to be confused with avulsion. (Plural Science et al, 2019)

2.4 RADIOGRAPHIC EXAMINATION

To have a more accurate diagnosis we need complementary tests such as radiographic. Among the radiographic examinations are the lateral radiography of the nose where it is removed in an extra oral way positioning the film of perpendicular profile to the labial commissure of the patient, if the deciduous tooth has deviated from its successor tooth its root will be vestibularized, the extraoral lateral radiography is contraindicated as a routine, especially when the lateral incisors are involved due to the difficulty of defining the apical alignment of the involved tooth, we also have the periapical radiography with the bisection technique this technique is performed to form intra oral between the two incisors In this case, if the image of the intructive tooth is enlarged in relation to the successor

tooth, the dislocation determined an approximation with its permanent successor, with probable invasion to the developing follicle. (LIMA et al, 2013) (Moura et al, 2011).

Figure 1: Lateral radiographic technique of the nose, with the mother holding the film in position (Source: Walter et al., 1999)

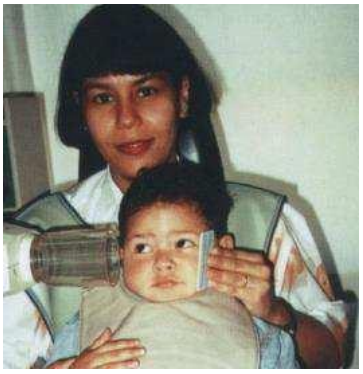
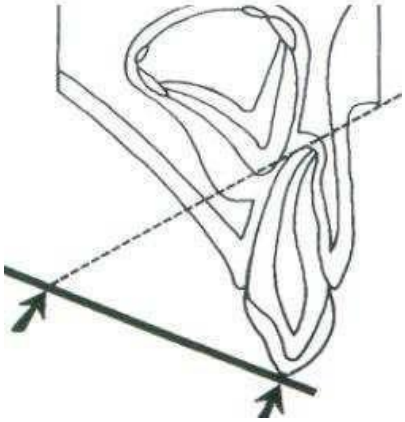


Figure 2: Schematic drawing showing incidence of radiographic image in displacements from root to palatine.



2.5 PROGNOSIS OF INTRUDED TEETH

In relation to the prognosis of the instructed deciduous tooth we must investigate several factors that include the degree, intensity of the dislocation, age and time between trauma and care, the effects of trauma also include pathological changes such as necrosis of the canal and internal or external root resorption, in cases of root resorption caused due to intrusive dislocation of the primary teeth it is necessary to perform endodontic treatment because the premature loss of this Tooth can bring aesthetic problems, phonetics, premature eruption of permanent teeth and loss of phonetics. (LIMA et al, 2013)

For Freitas (2013), among the dislocations, dental intrusion presents the most doubtful prognosis, since the immediate sequel is the rupture of the periodontal ligament and the neurovascular supply of the pulp by crushing. In the deciduous dentition most often it is recommended to wait for the reeruption, except when the apex of the deciduous is displaced to the successor gene (Moreira et al et al. 2005)

2.6 SEQUELAE IN THE DECIDUOUS TEETH AND SUCCESSORS

Pulp necrosis is a sequel that affects most traumatized teeth, endodontic treatment is initiated about 2 to 3 weeks after the trauma. Clinical follow-up with vitality and radiographic tests should be performed to diagnose and follow up the sequelae. (VIDAL et al, 2021)

In the dental trauma of intrusive dislocation the successor teeth can also suffer sequelae, the traumas of the type intrusive dislocation in the deciduous teeth have a prevalence of 12 to 69% of disorders in the permanent successors. The reason that leads to changes in the developing permanent teeth is the small relationship of the deciduous tooth with the germ of the permanent tooth. (LIMA et al, 2013)

For Moura et al. (2011) the most common sequelae in successor teeth are white spots and yellow-brown spots of enamel with a prevalence of 33.9%, the authors justify this prevalence by the fact that the germ of the successful tooth is more sensitive in the early stages when it is common to occur trauma in cinacas of less than 2 years (LIMA et al, 2013)

2.7 TREATMENT

The treatment of the deciduous intrusive tooth is a subject much discussed in the literature, being the objective of the treatment to avoid phonetic and aesthetic problems and to prevent changes in the developing teeth between the treatments we can wait for the eruption or even perform an extraction of the intruded tooth. (LIMA et al, 2013)

When the choice is to wait for the intruded tooth to re-erupticion, if you should make the appointment 1 week after the trauma, if the teeth do not present even one complication, the appointments should be scheduled between the time period, successively, from two to three weeks, six to eight weeks, six months and one year after the trauma. Parents should be indicated to feed children with pasty foods, perform oral hygiene with chlorhexide 0.12% four times a day, the pacifier to be taken for fifteen days because this habit disrupts the prognosis. Parents should be warned about the possible sequelae resulting from the trauma, such as bone resorption and pulp necrosis, ankylosis and damage to the development of the permanent tooth germ Usually, the intractable deciduous tooth begins the reeruption process after a few weeks. (LIMA et al, 2013) (Trombini et al., 2008)

When the choice is to reposition the deciduous tooth instructed some of the benefits is to decrease the risks of ischemia and the release of apical compression, repositioning can avoid aesthetic and occlusion problems. (LIMA et al, 2013)

When you choose to perform extraction we have two options the immediate and the mediate, the immediate is indicated in the occurrence of impairment of the dental germ of the permanent successor tooth in order to relieve pressure and inflammatory processes, if the tooth is kept in this case the consequences will be even greater. For the best condition of this technique it is necessary that the

tooth is attached with the forceps and removed without even an additional dislocation, it should be considered a suture at the end. (Filho et al, 2005).

Mediate extraction occurs when it is first chosen to wait for the reeruption of the intruded deciduous tooth and sequelae occur in it with the appearance of abscesses and fistulas that indicate necrosis of the pulp or when the tooth does not erupt in 3 weeks. (LIMA et al, 2013) (VIDAL et al,2021)

2.8 CONCLUSION

From the literature review we realize that intrusive dislocation is common among young children, the degree of intrusion is a factor to be analyzed because depending on it the deciduous tooth can suffer great sequelae affecting even the permanent successor teeth, the type of treatment to be chosen is much discussed in the literature, where most of the time it is chosen to wait for the reeruption of the primary teeth when there is no compromise of the permanent successor tooth and opt for extraction only if there is any complication during the wait, due to the proximity of the deciduous tooth with the permanent tooth it is common to have the occurrence of sequelae in the permanent ones, so it is necessary to have a follow-up until the reeruption of the deciduous tooth and an orientation to the country, It is also important to emphasize the importance of clinical and radiographic examination, because when they are done correctly, they can reduce the chances of sequelae in primary and permanent teeth.

3 METHODOLOGY

This literature review aimed to analyze the effects of intrusive dislocation in primary teeth and its forms of treatment, academic databases such as PubMed and google scholar were used to identify articles and studies related to intrusive dislocation in primary teeth and its effects and 1520 articles were found where 16 were selected between the years 2002 to 2022. The research descriptors used were Dental trauma, intrusive dislocation.

The inclusion criteria for the selection of articles were as follows: the studies should report epidemiological data on intrusive dislocation; We included studies that talked about all traumas in primary teeth and studies that talked about the treatment in deciduous teeth. The research includes articles published in dental magazines and journals, in English and Portuguese, as well as books and other scientific publications.

The exclusion criteria were to eliminate articles published before 2002, articles that are not related to the topic, articles that had inconclusive results and articles that were published in languages other than English and Portuguese.

4 RESULTS

Authors	year	Nature of research	Methods	Conclusion
Ferreira et al	2013	Review of literature	analyze aspects related to intrusive dislocations in primary teeth including epidemiological data, diagnosis, sequelae in the teeth deciduous, treatment of the intractable deciduous tooth and possibility of involvement in the successor permanent teeth.	The type of treatment to be instituted In these cases it depends on a clinical and radiographic analysis, and in cases where there was no involvement to the permanent successor tooth, waiting for passive reeruption may be indicated.
Bastos et al	2019	Case report	address the occurrence of a intrusive dental trauma in the deciduous dentition, describing aspects related to the diagnosis, treatment and proservation of the dental unit.	Knowledge of the techniques of Trauma manipulation dento-alveolar and soft tissue is essential for the realization of an adequate treatment of these conditions. In this way, it is important to Dental surgeon have skills in the management of child for a correct diagnosis, establishing an adequate one treatment for a better prognosis of the dental unit.
Maris et al.	2011	Case report	Care in children with Trauma in the deciduous dentition requires a different approach from that used in the permanent dentition, because the primary dentition is close to the Permanent dentition It can cause sequelae in the permanent teeth.	sought to address this theme of broad way, from anamnesis to general, intraoral examinations and radiographic, with a view to fully analyzing the patient, also addressing the degrees of the lesion.
Trobim et al Feldens et al Feldens et al	2008	Case report	two clinical cases of patients who presented intrusive dislocation in the deciduous incisors. The patients were monitored since the consultation of urgency and accompanied until the eruption of the successor permanent teeth	In both cases, due to the severity of intrusion, there was sequelae for the successor teeth, with developmental alteration in the crown.
Moura et al Blasco et al Costa and al Cruz and al Lubian and al Torrian et al	2011	Review of literature	Accompany the primary teeth intruded and observe the occurrence of sequelae.	Track the eruption spontaneous of the instructed teeth and carefully observe the appearance of sequelae is the Alternatively, some sequelae may appear months after the trauma. Figuring out the degree of intrusion is also a factor important.
Rocha et al Jacomo et al Campos et al	2008	Review of literature	Determine the frencia of traumas anterior deciduous teeth in relation to sex, age group their causes and types,	The boys were the most affected by traumas trauma, and the most

Moliterno et al			in addition to the frequency of sequelae in the deciduous teeth and their successors.	affected was from 1 to 4 years. Falls were the main causes and the Dislocation was the most common type of trauma. In the dentition deciduous premature loss was the most common sequelae and in the permanent dentition was the irruption alteration.
Santin et al Terra and al Martioli et al Provenzano et al Camilo et al Maciel et al	2016	Literature review	The aim of this study was to evaluate 139 children with a history of trauma to deciduous teeth, verifying the sequelae and the association with gender and age.	It is concluded that there is a high prevalence of sequelae diagnosed at follow-up, demonstrating the importance of preservation.
Cunha and al Bento and al Lopes and al Granja and al Lima et al Rodrigues et al Carneiro et al		Literature review	The main immediate and late sequelae of dental trauma in the deciduous dentition	Based In the studies the intrusion to dental avulsion, crown and root fractures and root fractures, are the lesions that present the most severe immediate sequelae, which may cause tooth extraction, and may be at a later or immediate stage.
Bonanato and al Marinho and al Castro and al Meneses and al Auad and al Martins and al Paiva et al	2005	Case report	To report the clinical case of an 8-year-old female child who suffered the intrusion of 4 teeth, 2 deciduous upper lateral incisors and 2 upper central incisors Permanent.	The option for this treatment was crown surgery followed by orthodontic extrusion, The patient was followed up clinically and radiographically until complete dental repositioning, the follow-up was four years and confirmed the effectiveness of the method.
Ribas et al Czlusniak et al	2004	Literature review	Analyze enamel anomalies dental, which result from the action of various etiological factors during the stages of apposition and mineralization of the dental development	by means of a diagnosis precise differential, an effective and effective treatment will be sought for re-establish the function, aesthetics and self-esteem of patients who are patients with enamel hypoplasia

5 DISCUSSION

In the case of dislocations in primary teeth, they comprise between 21 and 81% of traumatic injuries, where 4.4% and 22% are intrusive dislocations (Andreasen, Ravn et al, 1972), for ANDREASEN; ANDREASEN et al, 2001 the intrusive dislocation has a frequency ranging from 62 to 72%, in children from 1 to 3 years of age the peak prevalence is 52.6%. (LIMA et al, 2013).

For Assed et al, 2002 in relation to age the peak of prevalence occurs in children from 1 to 3 years of age, occurring rarely in children over 4 years, intrusive dislocation is common in children of young age because they in this period are learning to walk. In Leite et al, 2019 highlighted that intrusive dislocation happens most often in 3-year-old children due to their lack of motor maturity.

Intrusive dislocation trauma is considered an emergency injury, and should receive the correct protocol as soon as possible because sequelae may occur if not treated correctly, such as injured periodontium and resorptions from the pulp. (VIDAL et al,2021), in the studies of Rushmah et al 1990 it was noticed that the interval between trauma and emergency treatment is related to the severity of the injury and the patient's dental status.

To diagnose intrusive dislocation requires a detailed clinical and radiographic examination, for SANTOS et al, 2019 the radiography in intrusive dislocation helps us to know where the tooth has moved, when the tooth was elongated in relation to the successor, probably the deciduous tooth has reached the permanent, but if it is shortened, it is probably distant from the permanent successor. For LIMA et al,2013 before any

Treatment It is necessary for the dentist to check if he hears any post-trauma injury, such as any neurological alteration, such as vomiting,

nausea, drowsiness, loss of consciousness, cyanosis, changes in breathing patterns and abnormal eye movements, for SANTOS et al, 2013 as the trauma probably just happened to children should be in a lot of pain and scared making it difficult to attend, so we should use the

talk-show-do management techniques and positive reinforcement. If the patient has these symptoms should be referred to a doctor. The clinical examination should have the analysis of the tissues, because through palpation it is possible to have a sense of the intensity of the lesion.

During the intra-oral examination several details should be analyzed to have a better diagnosis, such as partial or total intrusion into the alveolus, bleeding due to ruptures of the vessels

It should be checked if the tooth has any mobility or if it is firmly to the bone, however the radiographic examination is necessary to close the diagnosis and as an aid to know the position in which the tooth is (VIDAL et al, 2021). Santos et al 2013 complete by saying that it is necessary to palpate the fundus of the vestibule to verify if the intrusion was severe to the point of tearing the alveolar bone. The authors are unanimous regarding the clinical examination, the intrusion can present itself according to three degrees, where grade 1 is when the tooth presents a mild intrusion, where more than 50% of the crown is visible

Clinically, grade 2 presents a reasonable intrusion, where less than 50% of the crown is clinically visible, grade 3 is the most severe where it has a small part of the crown visible clinically or the tooth fully instructed. (Assed et al,2002) (Santos et al 2013) (VIDAL et al,2021).

To have a more accurate diagnosis we need complementary tests such as radiographic. Among the radiographic examinations are the lateral radiography of the nose where it is removed in an extra oral form positioning the film of perpendicular profile to the labial commissure of the patient (LIMA et al, 2013). Moura et al 2011 highlights that extraoral radiography is contraindicated as routine especially when there is involvement of the lateral incisor or multiple intrusions, due to the difficulty

of finding the apical alignment of the tooth involved.

Lima et al 2013 reports that the prognosis of the instructed deciduous tooth should be ascertained several factors that include the degree, intensity of the dislocation, age and time between trauma and care, the effects of trauma also include pathological changes such as necrosis of the canal and internal or external root resorption and Amarante et al 2022 completes saying that the best prognosis to have is the displacement of the deciduous tooth for college entrance exams.

In the sequelae in the successor teeth the extent of the disorders and the occurrence is related to the intensity of the trauma, the stage of formation of the dental germ, the type of trauma of the deciduous tooth and the force of the impact. The younger the child, the greater and more severe the traumas will be and the more numerous the developmental disorders of the crown.

For Moura et al. (2011) the most common sequelae in successor teeth are white spots and yellow-brown spots of enamel with a prevalence of 33.9%, the authors justify this prevalence by the fact that the germ of the successful tooth is more sensitive in the early stages when trauma is common in children under 2 years of age (LIMA et al, 2013). Costa et al 2005 completes by saying that intrusive dislocation is one of the

traumas that most cause sequelae in the successor teeth, it is observed that 54% of intrusive dislocations in primary teeth can cause anomalies in successor teeth.

In Santos et al 2013 when the intruded tooth does not move towards the successor and there is no contact between them is indicated to wait for the reeruption of the deciduous tooth, already for MOURA et al., 2008, in addition to the position of displacement we must look at the magnitude of the trauma.

6 CONCLUSION

Intrusive dislocation in children is the trauma that happens most often, knowledge of the techniques of manipulation of intrusive dislocation is essential to perform a good treatment. The importance of radiographic examination should be emphasized, because without it it is not possible to find out where the root of the tooth has moved. Most of the time as a form of treatment if the root of the intruded tooth has not reached the successor tooth is chosen to wait for the reeruption of the intruded tooth, but if there is any complication during the wait can opt for tooth extraction.

REFERENCES

LIMA, Silvana F. B. Xavier de L. Luxações intrusivas na dentição de decídua:Uma revisão de literatura. Curitiba,2013

FILHO, P.N.; ASSED, S.; SILVA, L.A.B. Odontopediatria Bases Científicas paraa Prática Clínica. In: _____ASSED, S., Traumatismo na Dentição Decídua. 1 ed. São Paulo: Artes Médicas, 2005, cap.23, 811-855.

MOURA, L.B.; BLASCO, M.A.P.; COSTA, V.P.P.; CRUZ, M.K.; JUBIAN, C.T. TORRIANE, D.D. Avaliação Clínica e Radiográfica de Dentes Decíduos Intruídos por 31 Traumatismos Alvéolo-Dentário. Pesquisa Brasileira de Odontopediatria e Clínica Integrada, João Pessoa, v.11, n.4, p. 601-06, 2011.

MOURA, L.F.A.D.; BEZERRA, A.C.B.; AMORIM, L.F.G.; MOURA, M.D.; TOLEDO, O.A. Intrusive luxation of primary teeth: case report. DentalTraumatology, Copenhagen, v. 24, n.1, p.91- 95, 2008.

ANDREASEN, J.O; ANDREASEN, F.M. Dental trauma. In: PINE C.M. Community Oral Health. London: Elsevier Science Limited, 2002. p.94-99.

RUSMAH, M. Traumatized anterior teeth in children – A 24-month follow-upstudy. Aust. Dent. J., v.35, p.430-3, 1990

Costa LRRS, Corrêa MSNP, Ribeiro RA. Traumatismo na dentição decídua. In: Corrêa, MSNP. Odontopediatria na primeira infância. 2. ed. São Paulo: EditoraSantos, 2005. p.645-667

Leite, Rafaella B. L. AVALIAÇÃO CLÍNICA E RADIOGRÁFICA DE INTRUSÃODENTÁRIA NA DENTIÇÃO DECÍDUA: RELATO DE CASO. Ciencia plural, rio grande sul .2019

Vidal,Vinicius Lima Vidal. DIAGNÓSTICO, TRATAMENTO E SEQUELAS DA LUXAÇÃO INTRUSIVA: REVISÃO DE LITERATURA. Revisão de literatura. Juazeiro do norte. 2021

Santos, J. de O. S. et al, TRATAMENTO DE TRAUMAS DO TIPO LUXAÇÃO EM DENTES DECÍDUOS E SUAS REPERCUSSÕES. Revisao de literatura.Sinop.2019

MOURA, L.F.A.D.; BEZERRA, A.C.B.; AMORIM, L.F.G.; MOURA, M.D.; TOLEDO, O.A. Intrusive luxation of primary teeth: case report. DentalTraumatology, Copenhagen, v. 24, n.1, p.91- 95, 2008.

Amarante, Viviane de O.Z.A. Luxação intrusiva em criança – quatro anos de acompanhamento. Relato de caso. 2022.

FERREIRA, Silvana F. B. Xavier de L. Luxações intrusivas na dentição dedecídua: Uma revisão de literatura. Curitiba,2013

Bastos, Rafaela B. L. Avaliação clinica e radiográfica de intrusão dentaria nadentição decídua:Relato de caso. Rio grande do norte, 2009

WALTER, L.R. F.; FERELLE, A.; ISSAO, M. Traumatismo na Dentição Decídua. In:_. Odontologia para o Bebê. 1 ed. São Paulo: Artes Médicas, 1996. p.153-181.

SOPOROWSKI, N.J.O., DMD; ELIZABETH, N.; ALFRED, M.S.; HOEARD, L. NEEDLEMAN, DMD. Luxation injuries of primary anterior theeth – prognosis and related correlates. Pediatric Dentistry, Chicago, v. 16, n.2, p.96-101, 1994

ALTUN C.; ESENLIK, E.; TOZUM,T.F. Hipoplasia of a permanent incisor produced by primary incisor intrusion: a case report. Journal Canadian DentalAssociation, Ottawa, v.75, n. 3215, 2009.

ANDREASEN F. M.; ANDREASEN J.O. Traumatismos de luxação. In:_____. Texto e Atlas Colorido de Traumatismo Dental. 3 ed. Porto Alegre: Artmed, 2001.

GONDIM,J.O; MOREIRA NETO J.J. Evaluation of intruded primary incisors primary incisors. Dental Traumatology, Compenhagen, v.21, n.3, p.131- 133,2005.

TROMBINI, C.S.; FELDENS, E.G.; FELDENS, C.A. Luxação intrusiva em dentes decíduos: relato de casos. Stomatos, Canoas, v.14, n.27, p.74-86, 2008.