

Dento-alveolar trauma rehabilitation using fixed prosthesis: clinical case report

Reabilitação de traumatismo dento-alveolar por meio de prótese fixa: relato de caso clínico

DOI:10.34119/bjhrv6n6-312

Recebimento dos originais: 01/11/2023

Aceitação para publicação: 05/12/2023

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ABSTRACT

Dental trauma is an unexpected, accidental event and requires immediate emergency attention. There are several etiological factors and almost any collision between the face and an object can result in a dental trauma. Objective: The objective of this study is to report a case of dento-alveolar trauma and its dental management, promoting the patient's well-being, restoring health, function and aesthetics. Case report: A 20-year-old male patient came to the dental clinic of CEUNI - FAMETRO complaining of dissatisfaction with his broken tooth after a sports collision. Intraoral clinical examination revealed a large coronary loss below the gingival level in element 15, leaving only the buccal and lingual faces. In the initial radiographic examination, it was verified the presence of an endodontic treatment already performed, but endodontic retreatment was necessary, due to exposure and contamination of the filling material. The treatment plan proposed to the patient consisted of rehabilitation with an intraradicular retainer and then the cementation of a ceramic crown. Conclusion: The study concluded that the rehabilitation with the use of an intraradicular retainer, the fiberglass pin and the metal-free ceramic crown also obtained good results. Thus, it was observed that these materials were able to return the functionality of the tooth, oral health and aesthetics with a natural aspect to the element, the patient reported that he was very satisfied with the final result of his treatment.

Keywords: crown of the tooth, dental trauma, extracoronary restoration, fixed partial prosthesis, intraradicular retainer technique.

RESUMO

O traumatismo dental é um acontecimento inesperado, acidental e requer atenção de emergência imediata. Existem diversos fatores etiológicos e quase qualquer colisão entre o rosto e um objeto pode resultar em um traumatismo dental. Objetivo: O objetivo do trabalho é relatar um caso de traumatismo dento-alveolar e seu manejo odontológico promovendo o bem-estar do paciente, devolvendo saúde, função e estética. Relato de caso: Paciente do sexo masculino, 20 anos, compareceu a clínica odontológica do CEUNI - FAMETRO queixando-se de insatisfação com seu dente quebrado, após uma colisão esportiva. No exame clínico intraoral, constatou-se grande perda coronária abaixo do nível gengival no elemento 15, restando apenas as faces: vestibular e lingual. No exame radiográfico inicial, verificou-se a presença de um tratamento endodôntico já realizado, porém foi necessário o retratamento endodôntico, devido a exposição e contaminação do material obturador. O plano de tratamento proposto ao paciente resumiu-se em fazer uma reabilitação com um retentor intraradicular e posteriormente a cimentação de uma coroa de cerâmica. Conclusão: O estudo concluiu que a reabilitação com o uso de retentor intraradicular, o pino de fibra de vidro e a coroa de cerâmica metal free, também obtiveram bons resultados. Sendo assim, foi observado que estes materiais foram capazes de devolver a funcionalidade do dente, saúde bucal e a estética com aspecto de naturalidade para o elemento, o paciente relatou que ficou muito satisfeito com o resultado final do seu tratamento.

Palavras-chave: coroa do dente, prótese parcial fixa, restauração extracoronária, técnica para retentor intraradicular, traumatismos dentários.

1 INTRODUCTION

Dental trauma is an unexpected, accidental event and requires immediate emergency attention. (MULE and COHENCA, 2016) Although these injuries are more common in children and adolescents, all are subject to a possible contusion in their daily activities (PETTI ET. AL, 2018). Traumatic injuries are not considered a disease, but a consequence of various risk factors. In this way, even an individual with meticulous oral hygiene can suffer an accident and have several complications resulting from the trauma. (LAM, 2016)

Traumatic dental injuries are very common in society and comprise 85% of people who have injuries in the oral region (LOCKER, 2007). Even though, the oral region covers a small body area, oral injuries account for 5% of all bodily injuries at all ages (INTERNATIONAL ASSOCIATION OF DENTAL TRAUMATOLOGY, 2020). Therefore, these complications can cause serious emotional problems by affecting the appearance, which directly influences social relationships and ends up affecting the psychological, in addition to producing significant costs for the victim of the trauma (CORTES ET. AL, 2002).

There are several etiological factors and almost any collision between the face and an object can result in a dental trauma. The World Health Organization (WHO) developed a nomenclature system to classify such lesions in 1978, which was later modified by Andreasen and Andreasen (2001). One of these classifications is complicated fractures of the crown that affect the enamel, dentin, and pulp. (BRAZIL, 2013).

Endodontically treated teeth may have a reduction in the structure of coronal dental tissue and, therefore, require an intraradicular pin to retain the restoration. (PEROZ ET. AL., 2005). In addition, fiberglass posts have mechanical characteristics like those of dental tissues and when subjected to occlusal loads, they better absorb and distribute the forces exerted along the tooth structure, reducing the possibility of a fracture (RAMÍREZ-SEBASTIÀ, 2014).

The main focus should be directed to the ultimate goal of recovering the functions of the stomatognathic appliance, in addition to providing aesthetic harmony to the smile and trying as much as possible to match the healthy tooth. Thus, the aesthetic and functional feasibility of restorative techniques in ceramics, combined with adhesive procedures, facilitates the rehabilitation of these teeth with proven clinical longevity (NAUMANN ET. AL, 2005).

Often, the decision to use the prefabricated core depends on whether the amount of residual dentin requires additional support and the smaller the remaining amount, the greater the need to obtain a support that can be acquired by the use of the intraradicular pin (CHIERUZZI ET. AL, 2017). Therefore, there are important direct factors for a satisfactory final result, which are: mechanical properties, shape, translucency and radiopacity. There are

also indirect factors that benefit the treatment, such as the material cementing agent of the crown filling core and the quality of the endodontic treatment (FURTOS ET. AL, 2016).

That said, the objective of this study is to report a case of dento-alveolar trauma and its dental management, promoting the patient's well-being, restoring health, function, and aesthetics.

2 CASE REPORT

A 20-year-old male patient came to the dental clinic of CEUNI - FAMETRO complaining of dissatisfaction with his broken tooth after a sports collision. In the anamnesis, the patient reports that he fractured element 15. He also reported that he had undergone endodontic treatment on the same element, but due to the direct exposure of the filling material over a long period, there was a need for root canal retreatment (Figure 1). Intraoral clinical examination revealed a large coronary loss below the gingival level in element 15, leaving only the buccal and lingual surfaces (Figure 2).

Figure 1: Initial Appearance



Source: authorial

Figure 2: lateral intraoral appearance



Source: authorial

In the initial radiographic examination, it was verified the presence of an endodontic treatment already performed, but endodontic retreatment was necessary due to exposure and contamination of the filling material (Figure 3).

Figure 3: Initial X-ray



Source: authorial

The treatment plan proposed to the patient consisted of rehabilitation with an intraradicular retainer and then the cementation of a ceramic crown. Clinical crown augmentation surgery with osteotomy was performed, respecting the biological space. After the clinical crown augmentation, the deep margin was surveyed with A2 (Grandioso Heavy Flow - Voco) resin on the mesiodistal surface and the cavity was sealed with temporary resin material (Bioplic - Biodynamics) in order to raise the end of the restoration margin to the supragingival level (Figures 4, 5 and 6). the step of elevation of the margin was essential to be able to isolate the element, so the endodontic retreatment began, in which type K #10 files (Dentsply) were used for catheterization and Logic RT (Easy) for reisturing the conduit and Gattes n° 2 drills for de-filling the canal (Maillefer - Dentsply), it is recommended to maintain 5 millimeters of conduit filling up to the apex to obtain apical sealing.

Figure 4: Element with Absolute Isolation



Source: authorial

Figure 5: Beginning of Margin Drawdown



Source: authorial

Figure 6: Depth Margin Elevation Performed



Source: authorial

In another session, the protocol for installing the fiberglass pin as an intraradicular retainer was initiated. Intraoral prophylaxis was performed with Robinson brushes (American Burrs) and prophylactic paste (Maquira), there was no need to anesthetize the patient, and the operative field was completely isolated with a rubber sheet (New Tone - Madeitex), staple No. 209 (GOLGRAN) and Teflon tape (TDV) was used for better gingival clearance and moisture control (Figure 7).

Figure 7: Properly insulated element to receive the retainer.



Source: authorial

The pin in the conduit was measured (figure 8) and the one that best adapted was the n° 1 (Exacto - Angelus) of 18 millimeters, and the tooth was 21 millimeters and then the use of the specific reamer drill of the fiberglass pin kit at low rotation and irrigation (figure 9).

Figure 8: Pin Proof



Source: authorial

Figure 9: Preparation of the conduit



Source: authorial

After the preparation of the conduit, it was cleaned with 0.9% saline solution and dried abundantly with absorbent paper tips (Dentsply). To prepare the pin, it was immersed in 70% alcohol in the glass dappen pot, after disinfection the pin was conditioned (figures 10 and 11)

with 10% hydrofluoric acid (FGM) for one minute, conditioning its surface and making it more reactive to silane. The bonding agent (Prosil - FGM), the silane (figure 12) was applied to promote a more adequate adhesion between the pin-composite interface and the air jet for the volatilization of the solvent after this step, it was observed that the fiberglass pin was more porous with micro retentions.

Figure 10: Pin Conditioning



Source: authorial

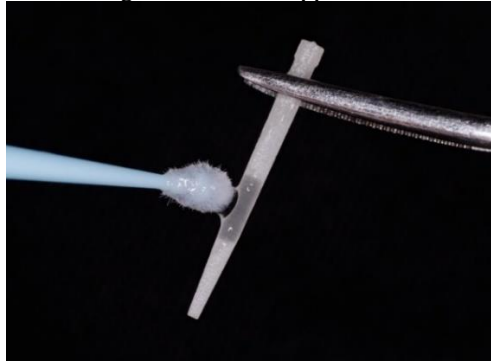
Figure 11: Pin Appearance After Conditioning



Source: authorial

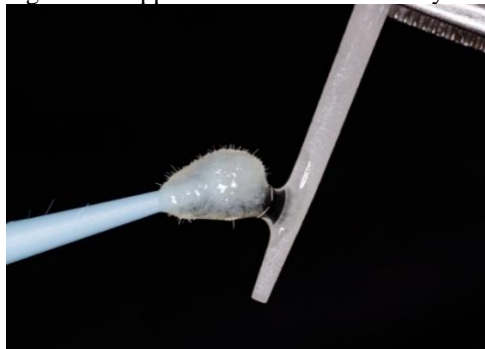
Also, for the preparation of the fiberglass pin, the universal adhesive system (Ambar - FGM) was applied (Figure 13) with the aid of the microbrush applicator (Cavibrush - FGM), and the air jet was also made for the volatilization of the solvent and light-curing for 120 seconds (Figure 14). For the anatomical molding of the conduit in the pin, it is necessary to lubricate it with liquid petroleum jelly (Rioquímica) so that the increments of composite resin do not adhere to the walls of the channel (figure 15).

Figure 12: Silane application



Source: authorial

Figure 13: Application of the adhesive system



Source: authorial

Figure 14: Photoactivation of the adhesive system



Source: authorial

Figure 15: Channel lubrication



Source: authorial

The modeling with composite resin (Form A3 - Ultradent) was done to adapt the resin and individualize the pin (figure 16) by the technique of increments with the aid of the suprafill spatula n° 1 (Golgran). After modeling, the composite resin was photoactivated on the pin (Figure 17).

Figure 16: Pin anatomization



Source: authorial

Figure 17: Individualized pine



Source: authorial

With the pin installed, the tooth of the beveled end was prepared respecting three parameters: the anatomy of the element, the marginal gingival and the biological space. The stripping was performed with medium-grained diamond tips, n° 3216 to perform the preparation, n° 2200 for the proximal surfaces and n° 4138 to finish and round the preparation (Invicta Fixed Partial Prosthesis Kit - American Burrs). Thus, the step of making the provisional crown by the veneer technique with prefabricated teeth (Biolux - VIPI) (Triunfo 62 32L) began, where the palatal surface of the stock tooth was worn and the prepared tooth and its neighbors were sealed with solid petroleum jelly and the aid of a brush, so that the element could be fitted together with increments of self-curing acrylic resin in color 66 (Vipiflash). As soon as the acrylic resin was attached, the end of the temporary crown with tungsten tips (Maxicut n° 1251 - American Burrs) was worn out, then the finishing and polishing was carried out with the fixed

prosthesis finishing and polishing kit (American Burrs) and the temporary crown was cemented with temporary cement (Temp Bond NE, Kerr) (figure 18).

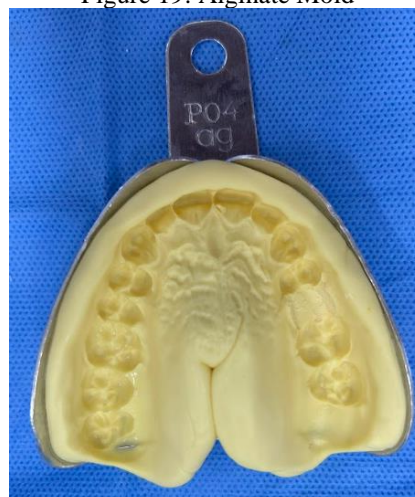
Figure 18: Cemented Temporary Crown



Source: authorial

In the molding stage for the making of the ceramic crown, a top perforated tray of n° 6 (Tecnodent) was used, then the retractor wire n° 000 (Ultrapak - Ultradent) was placed, the molding technique took place in two phases: first, the condensation silicone (Optosil - Kulzer) was manipulated in the heavy material, in which it is necessary to place a portion in the hand and then make a marking with the dispenser, inside the circle, the X is made with the catalyst tube, it is manipulated until the homogeneous color is obtained, it is placed on the tray to be positioned in the mouth, after the material takes hold, the mold is removed and prepared to make the relief. With the mold ready (figure 19), the fluid paste was manipulated on a glass plate with spatula n°24 (figure 20).

Figure 19: Alginate Mold



Source: authorial

Figure 20: Silicon Condensing Fluid Paste



Source: authorial

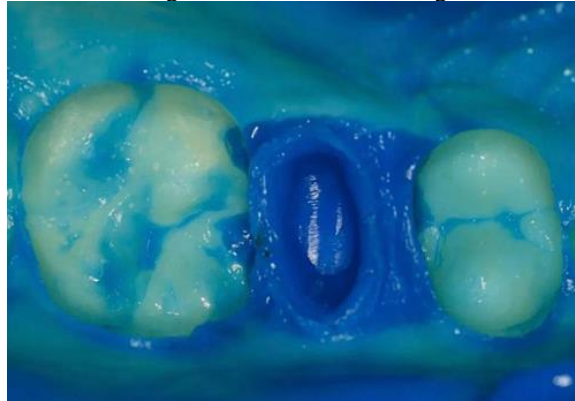
At this stage, the elastomer injector was used to insert one portion of the paste into the mold, and the other in the marginal gingival region, at the same time that the gingival retractor wire was removed, the tray was then placed in position again and with the material attached it was possible to observe a more faithful molding of the preparation (Figures 21 and 22). Next, the patient's bite was recorded, and the antagonist arch was molded with alginate (Jeltrate Plus) and leakage with type III plaster cast (Herodent - Coltene). With the Vitta scale, the color of element A1 was selected in all regions of the tooth, all together with the patient.

Figure 21: Element with retractor wire n°000



Source: authorial

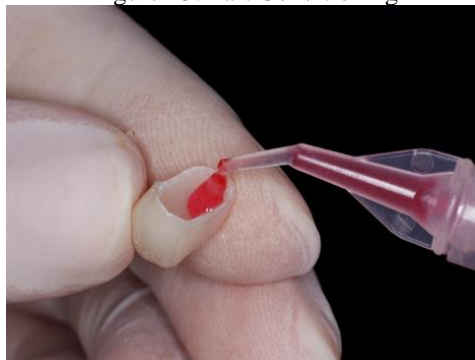
Figure 22: Element Molding



Source: authorial

After the patient's return and the ceramic crown was made, the temporary crown was removed and the preparation was cleaned with water and pumice, the crown test was performed and there was no need to make occlusal adjustments. Once the cementation protocol begins, the internal surface of the ceramic is conditioned with 10% hydrofluoric acid (Condac - FGM) (figure 22) in this step, it is expected that the piece will have micro porosities to improve the adhesion of the future adhesive material (figure 23), after 20 seconds the acid is removed by washing abundantly for 1 minute, application of silane (Prosil - FGM) (figure 25) with the aid of microbrush (Cavibrush - FGM) and volatilization of the solvent, application of the universal adhesive system (Ambar - FGM) and volatilization of the solvent.

Figure 23: Part Conditioning



Source: authorial

Figure 24: Post-conditioning aspect



Source: authorial

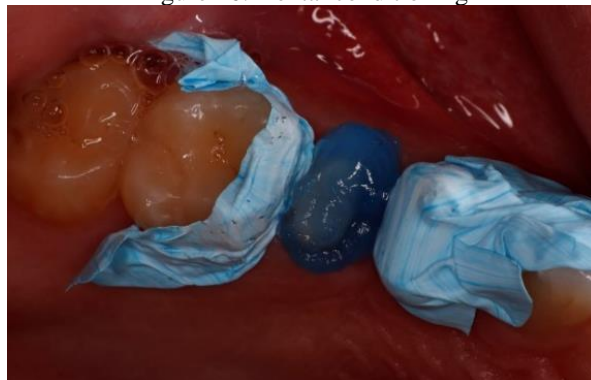
Figure 25: Silane application



Source: authorial

Once the conditioning of the tooth surface began, 37% phosphoric acid (Condac 37 - FGM) was applied to the entire tooth surface for 30 seconds (Figure 26), in which the preparation was washed twice as long and the preparation was dried with absorbent paper, soon after, the universal adhesive system (Ambar - FGM) was used with the aid of the microbrush (Cavibrush - FGM) (Figure 27) and the solvent was volatilized.

Figure 26: Dental conditioning



Source: authorial

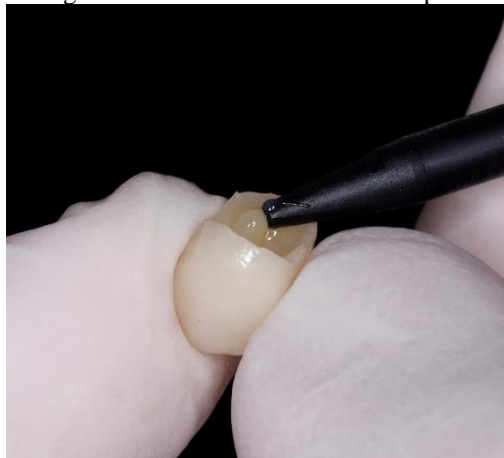
Figure 27: Application of the adhesive system



Source: authorial

With the preparation ready, in the cementation stage, resin cement (Dual All One Hundred Core – FGM) was used (figure 28) after the adaptation, it is necessary to remove the excess with the help of a suprafill trowel n° 1 and wait for a time of 2 to 5 minutes for polymerization of the material. Once the cementation was completed, the piece was well adapted and had a natural shine and appearance (figure 29).

Figure 28: Cementation of the workpiece



Source: authorial

Figure 29: Final Appearance



Source: authorial

3 DISCUSSION

In the case presented, the fractured tooth was the upper premolar, however, most dental traumas involve the anterior teeth and extend to the pulp, hard tissues and periodontals. (Hecova et. al, 2010). However, Zaleckiene et. AL, 2014 reports that any impact, direct or indirect, can generate dental trauma and the extent of the damage is directly related to the energy of the impact, the shape of the impacting object, the direction of the blow and the reaction of the affected parts.

Aesthetic and functional rehabilitation in teeth with coronary destruction is always a challenge for dentistry. In cases of great loss of dental structure, root retainers can be used to offer better support for the rehabilitation of the unit (Silva et. al 2020). The difficulty of determining treatment and planning is shown in a study reported by Türp et. al, 2007 asked four specialists about the best treatment for a fracture of a lateral incisor, and different treatment strategies were received based on the literature. For Faria et. al, 2010 A factor taken into consideration for the choice of treatment was the masticatory load that the element received and the amount of remaining structure still present. Tamse et al, 1998, observed that fractures in teeth or roots with a narrow mesiodistal dimension, such as that of maxillary premolars, are more common.

In a study of Malawat et. al, 2019 teeth with subgingival fracture, clinical crown augmentation can be performed for aesthetic enhancement, prosthetic, restorative purposes, as well as to establish the biological space by exposing the crown above the gingival margin. In agreement, Roshan & Varkey 2016 states that the prosthetic margin should be at least 3 mm from the alveolar crest, since the insertion of the connective tissue and junctional epithelium averages 2 mm and the sulcus comprises 1 mm.

Imura et. al, 2007 states that endodontically treated teeth without coronal covering for canal sealing presented high rates of treatment failure. Minju et. al 2014 explains that this happens because microorganisms can invade and recolonize the root canal system, which can induce and/or perpetuate periradicular disease, which makes it necessary to retreat the conduit.

Magne et. al, 2017 and Miorando et. al, 2011 state that currently, fiberglass pin is the most indicated intraradicular retainers, as they are aesthetic and have the modulus of elasticity more like that of dentin. Previously, Peroz et. al., 2005, comments that there are many principles to be considered when choosing the retainer, such as the length should reach 2/3 of the total size of the tooth and the diameter of the pin should be 1/3 of the total diameter of the tooth, as both directly influence the dissipation of masticatory loads along the root, in addition to its superficial characteristics.

It was demonstrated in the *in vitro* study of Peroz et. al, 2005 with level of evidence II b, that the roots in which the pins were cemented with resin cements obtained higher fracture strength than those using zinc phosphate cement, based on this evidence, adhesive fixation for any type of pin is recommended. However, Magne et. al, 2017 and Miorando et. al, 2011 show that the main failure of the fiberglass pin is associated with intraradicular adhesion difficulties, directly impairing clinical efficacy.

According to Culp and McLaren 2010, the IPS e.max system deals with restorative options for both anterior and posterior teeth, where it is possible to have different opacities or translucencies available, a variety of creative aesthetic options that only happen because the crystalline phase of 70% of this glass-ceramic material refracts light in a very natural way. To Lima et. AL 2013 Some factors can be considered in the selection of the metal free crown, such as the translucency of the ceramic insert and adjacent teeth, the magnitude of the forces incident on the region to be restored, and the color of the tooth to be rehabilitated.

Intraradicular retainers are still widely used materials in the market, but some authors, such as Magne et. al, 2016 and Carvalho et. al, 2018 question its efficacy, where it is presented that because it is necessary to prepare the element for this technique, the tooth ends up being more susceptible to fractures. To minimize fractures, Pergoraro et. al, 2014 report in their study that when the tooth element is being prepared, the principle of the ferula effect (protective hugging effect) must be considered, where it will act as a force dissipator, minimizing its action on the rest of the root. The success of rehabilitation using fixed partial prosthesis is determined by fundamental principles: durability of the prosthesis, the pulp and gingival health of the teeth involved and patient satisfaction. The dental surgeon needs to demonstrate skill throughout all phases of treatment, including evaluation, diagnosis, planning and preparation of the prosthesis. (Almeida E. S, Machado K. S, Souza G. C, 2023).

That said, there are treatment possibilities evidenced in scientific articles to save a tooth with great destruction of healthy tissue (Türp et. al, 2007). Considering the most recent studies, another approach that could be used for this case would be restoration with composite resin without the fiberglass pin, since it preserves healthy tissue and has shown great progress in its materials and rehabilitation (Demarco et. al, 2011) (Montag et. al, 2018). Therefore, it is necessary to evaluate the amount of remaining structure to indicate the best treatment. (Peroz et. al, 2005).

4 CONCLUSION

Therefore, for teeth that have great coronary destruction, there are several types of treatments, some more conservative and others not so much. One of the most conservative treatments for this type of case would be to perform endodontic retreatment and later perform the restoration indirectly with the aid of an aluminum oxide blaster, which has shown excellent results in improving adhesion to the composite and substrate. However, the study concluded that rehabilitation with the use of an intraradicular retainer, the fiberglass pin and the metal-free crown also obtained good results. Thus, it was observed that these materials were able to return the functionality of the tooth, oral health, and aesthetics with a natural aspect to the element, the patient reported that he was very satisfied with the final result of his treatment.

ACKNOWLEDGEMENTS

My God, thank you for your plans in our lives, for they are always bigger than our own dreams. We thank our parents for their love, encouragement and unconditional support, our families for the difficult times and who understood our absence. It is with great admiration and enormous respect that we show all our gratitude to the teacher/advisor and to the other teachers who contributed to the accomplishment of this work and also to the educational institution for the support for the accomplishment of this work.

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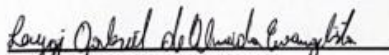
APPENDAGES

CENTRO UNIVERSITÁRIO FAMETRO (CURSO DE GRADUAÇÃO EM
ODONTOLOGIA)
TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO

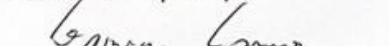
Convidamos o senhor Luygi Gabriel de Almeida Evangelista para participar do *Relato de caso*, visando construir coletivamente um entendimento sobre *Tratamento Reabilitador em adulto de 20 anos de idade, do sexo masculino, para melhoria na qualidade de vida*. O procedimento adotado será RELATO DE CASO. Ressaltando que todos os procedimentos são feitos com embasamento científico e teórico, será feito em ambiente clínico, e as informações permanecerão confidenciais, não sendo divulgadas de forma a declarar a sua identidade. Os dados obtidos serão utilizados apenas para fins deste estudo. Se necessário, o pesquisador coloca-se à disposição para realizar o acompanhamento psicoterápico.

Sua participação neste estudo é voluntária. Na eventualidade da participação neste Relato de caso não lhe causar qualquer tipo de dano, os pesquisadores disponibilizarão acompanhamento psicológico. O senhor (a) pode retirar-se a qualquer momento, não havendo qualquer tipo de prejuízo a sua pessoa. Sendo o senhor(a) participante deste estudo terá sempre que necessário esclarecimento de dúvidas, no que diz respeito ao estudo, podendo entrar em contato com o pesquisador Amanda Christine Auzier Alencar, Américo Lucas de Moura Batista ou com o pesquisador Gabriel Catunda de Souza pelo endereço: Av. Constantino Nery, 3000, Chapada ou pelos telefones: (92) 98476-1408 e (92) 98418-2540 ou ainda pelos e-mails: [christine.amanda@hotmail.com/](mailto:christine.amanda@hotmail.com) a.lucasmoura12@hotmail.com

Fui informado sobre o que o pesquisador quer fazer e porque precisa da minha colaboração, e entendi a explicação. Portanto, concordo em participar do projeto, sabendo que não vou ganhar nada e que posso me retirar quando quiser. Estou recebendo uma cópia deste documento, assinada, comprometendo-me de guardá-la.


Assinatura do participante

01/03/2023
Data


Pesquisadora Responsável

01/03/2023
Data

Impressão Dactiloscópica





CENTRO UNIVERSITÁRIO FAMETRO
(CURSO DE GRADUAÇÃO EM ODONTOLOGIA)

TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO

Convidamos o senhor Luygi Gabriel de Almeida Evangelista para participar do Trabalho de Conclusão de Curso intitulado Reabilitação de Traumatismo Dento-Alveolar por meio de Prótese Fixa: Relato de Caso Clínico, visando construir coletivamente um entendimento sobre o respectivo assunto e sua abordagem terapêutica, a fim de contribuir com a área odontológica. Sua participação neste estudo é voluntária. Na eventualidade da participação nesta pesquisa lhe causar qualquer tipo de dano, os pesquisadores disponibilizarão acompanhamento psicológico. O senhor pode retirar-se a qualquer momento, não havendo qualquer tipo de prejuízo a sua pessoa. Sendo o senhor participante deste estudo terá sempre que necessário esclarecimento de dúvidas, no que diz respeito ao estudo, podendo entrar em contato com os pesquisadores Amanda Christine Auzier Alencar, Américo Lucas de Moura Batista e Gabriel Catunda de Souza, pelo endereço: Av. Constantino Nery, 3378 - Nossa Sra. das Graças, Manaus - AM, 69010-160 ou pelo telefone: (92) 98476-1408 ou (92) 98418-2540 ou ainda pelos e-mails: christine.amanda@hotmail.com ou a.lucasmoura12@hotmail.com. Por todo o exposto acima, EU Luygi Gabriel de Almeida Evangelista concordo e aceito: I - Que todas as radiografias, fotografias, modelos de gesso, histórico de antecedentes familiares, filmagens, resultados de exames clínicos e de laboratório ou quaisquer outras informações concernentes ao planejamento de tratamento ou diagnóstico, relacionados a minha pessoa, possam ser utilizadas para fins acadêmicos, científicos ou didáticos (aulas, congressos, apresentações e publicações científicas), podendo ficar de posse da INSTITUIÇÃO. II - Comprometo-me ainda, a seguir todas as orientações a pós-operatório, inclusive com relação aos medicamentos prescritos, a retornar periodicamente para controle e manutenção conforme determinação da equipe, podendo ainda, caso necessário ser designado a outro profissional apto para realizar o acompanhamento. Fui informado sobre o que o pesquisador quer fazer e porque precisa da minha colaboração, e entendi a explicação. Portanto, concordo em participar do projeto, sabendo que não vou ganhar nada e que posso me retirar quando quiser. Estou recebendo uma cópia deste documento, assinada, comprometendo-me de guardá-la. Todas estas normas estão de acordo com o código de ética profissional odontológico, segundo a resolução do CFO 042/03, resolução CNS/MS 196/96 e com a declaração de Helsinque II.

Luygi Gabriel de Almeida Evangelista Data: 01/03/2023
Assinatura da paciente

Amanda Christine Auzier Alencar Data: 01/03/2023
Assinatura do aluno

Américo Lucas de Moura Batista Data: 01/03/2023
Assinatura do aluno

Lucas Catunda Data: 01/03/2023
Assinatura do professor



Impressão dactiloscópica da paciente