



UNIVERSIDADE FEDERAL DE UBERLÂNDIA
FACULDADE DE ODONTOLOGIA



JÚLIA MEDEIROS

**THE INFLUENCE OF EARLY CHILDHOOD
CARIES ON CONGENITAL HEART DISEASE:
CASE REPORT**

UBERLÂNDIA

2017

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CARIES ON CONGENITAL HEART DISEASE:
CASE REPORT**

Trabalho de conclusão de curso
apresentado a Faculdade de
Odontologia da UFU, como requisito
parcial para obtenção do título de
Graduado em Odontologia

Orientadora: Prof^a. Dr^a. Danielly Cunha
Araújo Ferreira de Oliveira

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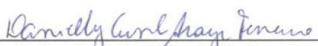


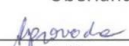
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TRABALHO DE CONCLUSÃO DE CURSO

ATA DA COMISSÃO JULGADORA DA DEFESA DE TRABALHO DE CONCLUSÃO DE CURSO DO (A) DISCENTE **Júlia Medeiros** DA FACULDADE DE ODONTOLOGIA DA UNIVERSIDADE FEDERAL DE UBERLÂNDIA.

No dia seis de julho de 2017, reuniu-se a Comissão Julgadora aprovada pelo Colegiado de Graduação da Faculdade de Odontologia da Universidade Federal de Uberlândia, para o julgamento do Trabalho de Conclusão de Curso apresentado pelo (a) aluno (a) **Júlia Medeiros**, COM O TÍTULO: **"THE INFLUENCE OF EARLY CHILDHOOD CARIES ON CONGENITAL HEART DISEASE: CASE REPORT"**. O julgamento do trabalho foi realizado em sessão pública compreendendo a exposição, seguida de arguição pelos examinadores. Encerrada a arguição, cada examinador, em sessão secreta, exarou o seu parecer. A Comissão Julgadora, após análise do Trabalho, verificou que o mesmo encontra-se em condições de ser incorporado ao banco de Trabalhos de Conclusão de Curso desta Faculdade. O competente diploma será expedido após cumprimento dos demais requisitos, conforme as normas da Graduação, legislação e regulamentação da UFU. Nada mais havendo a tratar foram encerrados os trabalhos e lavrada a presente ata, que após lida e achada conforme, foi assinada pela Banca Examinadora.

Uberlândia, 06 de julho de 2017

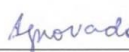

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A Deus por guiar meus passos e me dar força para superar as dificuldades.

A minha orientadora Prof^a. Dra. Danielly Cunha Araújo Ferreira de Oliveira pelo suporte no pouco tempo que lhe coube, pelas suas correções e incentivos.

Aos meus pais, pelo amor, incentivo e apoio incondicional.

E a todos que direta ou indiretamente fizeram parte da minha formação, o meu muito obrigado.

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Title: The Influence of Early Childhood Caries on Congenital Heart Disease:
Case Report

Short Title: Early Childhood Caries and Cardiopathy

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Abstract

Early Childhood Caries (ECC) in children with heart disease may lead to the development of infective endocarditis. The Interatrial Communication is a congenital malformation that receives three classifications, among which the ostium secundum type stands out. A 5-year-old male patient, diagnosed with Interatrial Communication ostium secundum attended by the Pediatric Cardiology sector of the Clinics Hospital of the Federal University of Uberlândia was referred to the Special Patients Division of the same institution due to the presence of ECC. Clinical and tomographic examination revealed the presence of residual roots of deciduous teeth, fistulas in the anterior superior region and the presence of all permanent tooth buds. The extraction of all residual roots was performed under general anesthesia. It was concluded that the dental treatment was successful, there was an improvement in the quality of life and the patient is able to undergo cardiac surgery.

Keywords: dental caries, quality of life, heart diseases

Introduction

Early Childhood Caries (ECC) and Severe Childhood Caries (ECC-S) are the most aggressive forms of dental caries¹. The definition and classification of this disease are well defined in the literature². The etiology of ECC is multifactorial³ and among these aspects, the risk factors for dental caries are present, which may negatively influence the development of the disease⁴. Diet is a risk factor that stands out because it has an influence not only on dental caries, but also on other systemic diseases such as obesity, heart disease, cancer and diabetes⁵.

Interatrial communication (IAC) is a congenital malformation of the heart characterized by an opening between the atrial cavities, which can be classified as Ostium secundum, Ostium primum or Sinus venosus⁶. Between the three classifications, atrial septal defect (Ostium secundum) represents approximately 70% of the cases, with the highest occurrence of heart disease⁷. There are two options for the treatment of this alteration, through conventional surgery or percutaneous treatment^{6,7}.

Due to the severity of the disease, ECC and ECC-S may have a negative impact on the quality of life of children with cardiac abnormalities^{8,9}. These patients are more susceptible to bacteremia and infective endocarditis induced by invasive or non-invasive dental procedures¹⁰. Therefore, oral health care is essential to prevent dental caries, as well as being a very important requirement for children with heart disease¹¹. The objective of this study was to report the case

of a cardiac patient with ECC-S and underwent general anesthesia for dental treatment and quality of life evaluated before and after treatment.

Case Description

A 5-year-old male patient was attended at the Special Patients Division of the Dental Hospital of the Federal University of Uberlândia (SEPAE-UFU), accompanied by the mother. Patient was referred by the Pediatric Cardiology Clinic of the Federal University of Uberlândia (PCC-UFU) of this institution, since the mother reported that the oral condition had been an obstacle to performing cardiac surgery and patient had a congenital heart disease

Previous and Current Medical History

The patient had congenital Interatrial communication type ostium secundum, diagnosed when he was 3 years old. He attends regularly to follow up appointments at the PCC-UFU, and awaited the spontaneous healing of the IAC, as the healing did not occur and the child was referred to receive the surgical correction. The patient has a disproportionate short stature, bone age compatible with an 1 year and 6 months of age for males and apparent craniofacial disproportion with no syndromic aspect, and is therefore being investigated for the presence of another associated systemic alteration. During the pre-surgical preparatory phase, the attending physician directed the family to seek dental care, to improve the oral condition with the removal of the infection so that cardiac surgery could be performed.

Anamnesis and Clinical Examination

The patient's diet was highly cariogenic, ingesting 3 or more bottles containing sweetened milk during the night. The oral hygiene was deficient being performed less than 3 times a day and without the use of dental floss.

The presence of ECC-S in all deciduous teeth, with residual roots and fistulae in the anterosuperior region, was observed. In the tomographic examination, coronary destruction was observed in almost all the teeth in the oral cavity, with compromised pulp and the presence of all permanent tooth germs (Figure 1).

Suggested treatment

In view of the oral condition and the need for dental treatment as well as the cardiac risk presented by the patient, the option of choice for the treatment was the extraction of all dental elements performed under general anesthesia. According to the treatment plan, the patient was hospitalized 24 hours and after all the steps of simple tooth extraction were performed, the suture thread used was resorbable (Figure 2). The postoperative guidelines were given to those in charge and the patient was scheduled to return after 7 days of postoperative control.

Evaluation of Quality of Life Related to Oral Health

The oral health-related quality of life (OHRQoL) was evaluated using the Early Childhood Oral Health Impact Scale (B-ECOHIS) questionnaire on quality of life at preschool age¹². The B-ECOHIS was applied before the treatment, after

the treatment and after ten months follow up (Table 1). At the first dental visit, the mother reported that the child had already suffered tooth and mouth pain, as well as difficulty eating certain foods and sleeping due to dental problems (Score: 23). After 7 days of treatment, it was possible to perceive a significant alteration in OHRQoL, with a decrease of 09 points in the score.

10 months follow up

The patient is under dental supervision and in the Figure 3 we can observe the current oral condition of the patient with the presence of teeth # 16, 31, 41 after 10 months of follow up. Regarding OHRQoL, all aspects evaluated in the questionnaire were answered as never before, verifying the success of the treatment and improvement in quality of life (Score: 14).

Discussion

The ECC is one of the most prevalent biofilm-dependent infectious diseases affecting children worldwide¹. This disease presents a multifactorial and complex etiology³. In addition, it can have psychosocial, physical and functional consequences due to episodes of acute infection, loss of sleep, irritability and difficulty in feeding due to dental pain¹³, as well as may have an impact on nutrition, growth and development⁸. Among the etiological factors, the cariogenic diet and hygiene deficiency can be highlighted as the main factors for the installation of the ECC, these two factors were found and interpreted as harmful habits during the anamnesis of the patient in the presented case, determining a very deficient oral condition with innumerable and extensive lesions of caries. This oral condition may have contributed directly to the worsening of the patient's

quality of life, where it was found difficulty in eating, sleeping and although it was not reported by the mother, during the dental examination, speech difficulties and shyness of the patient were observed.

ECC continues to be considered a serious public health problem becoming a worldwide concern¹⁴. Children with congenital heart disease have a worse oral health condition compared to healthy children at the same age¹¹. This condition can be justified by the presence of hypoplasias, caused by structural alterations and the enamel and dentin composition of patients with this cardiac alteration¹⁵. Hypoplasias, classified as an enamel development defect, are considered to be a high risk factor for dental caries², thus justifying an increase in the incidence of caries in these patients.

The appropriate dental approach with a conservative treatment may be able to reestablish the orofacial functions and the quality of life, altered by the ECC⁸. However, in the present case it was not possible to perform a conservative dental treatment, due to the extensive lesions of caries with compromised pulp, associated with congenital heart disease. The purpose of the extraction of all deciduous teeth was to remove all the infection presented by the patient, allowing the patient to undergo cardiac surgery for IAC correction.

The OHRQoL was compared in children with ECC undergoing local or general anesthesia to perform dental treatment. It was observed that the dental treatment performed under both techniques promotes the improvement in the child's quality of life⁹. The option to perform dental treatment under general anesthesia is justified by the need of dental care due to their young age, the

number of procedures needed and the presence of heart disease. After the dental treatment, an improvement in the patient's quality of life was observed, where it was possible to verify the absence of toothache, as well as to improve feeding and sleeping, episodes reported by the mother at the beginning of the treatment. The improvement of the oral condition can also contribute to weight gain and the socialization process. The differences between scores before and after treatment confirmed the success of our approach. The total score decreased from 23 to 14 points within a week, which shows the importance of oral health.

Conclusion

1. The dental treatment had significant success, with the removal of the mouth infection's source.
2. There was a quality of life improvement related to oral health verified by the information answered by the mother before and after dental treatment.
3. The patient fits de criteria for IAC correction heart surgery.
4. Children with congenital heart disease need an early dental approach, so that professionals can act in a preventive way against the ECC.

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Figures legends

Figure 1. **A.** Clinical intraoral scanning teeth with severe destruction coronary and compromised of the dental pulp. **B.** Tomographic examination showed the extent of the lesions of tooth with pulp involvement in all teeth and used in the planning of dental extractions.

Figure 2. Proposed treatment: extraction of all deciduous teeth. **A** and **B.** Aspect of lower and upper arches after extractions: suture with absorbable wire. **C.** Deciduous teeth extracted.

Figure 3. After 10 months of total extraction of deciduous teeth **A.** Clinical intraoral examination with the presence of permanent teeth erupted (31 and 41). **B.** The upper arch with the presence of tooth 16 partially erupted.

Table 1. Total Early Childhood Oral Health Impact Scale Score

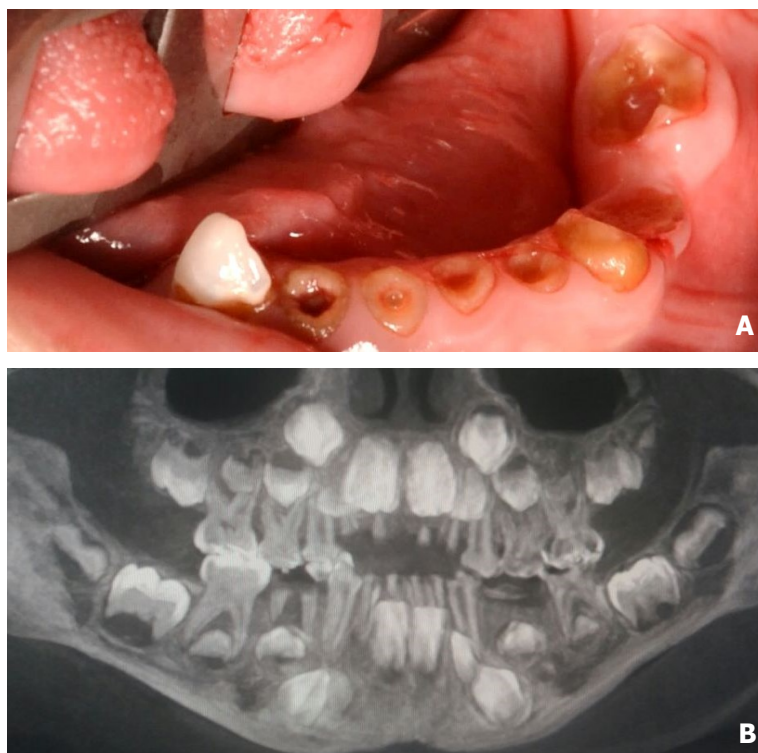
Figure 1

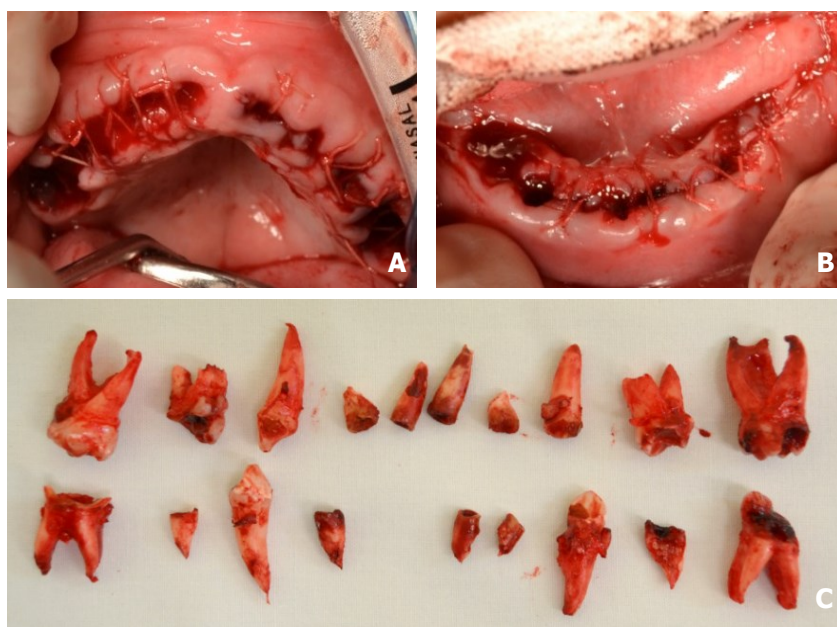
Figure 2

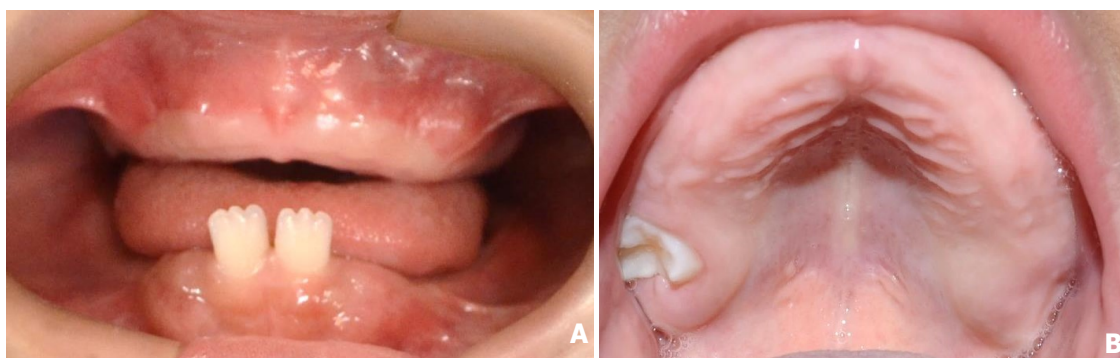
Figure 3

Table 1. Total Early Childhood Oral Health Impact Scale Score

Impacts	Domains	Before treatment	After treatment	After 10 months
Child	Child had pain in the teeth, mouth, or jaw	5	1	1
	Child had difficulty drinking hot or cold beverages	1	1	1
	Child had difficulty eating certain foods	4	1	1
	Child had difficulty pronouncing some words	1	1	1
	Child missed daycare, kindergarten, or school	1	1	1
	Child has stopped doing some daily activity	1	1	1
	Child had difficulty sleeping	3	1	1
	Child became angry	1	1	1
	Child avoided smiling	1	1	1
	Child avoided talking	1	1	1
Family	Caregiver became upset	1	1	1
	Caregiver felt guilty	1	1	1
	Caregiver missed work	1	1	1
	Caregiver felt the financial impact on the family	1	1	1
Total B-ECOHIS score		23	14	14

Appendix A

AAPD Instructions for Authors

Pediatric Dentistry

Pediatric Dentistry is the official publication of the American Academy of Pediatric Dentistry, the American Board of Pediatric Dentistry and the College of Diplomates of the American Board of Pediatric Dentistry. It is published bi-monthly and is internationally recognized as the leading journal in the area of pediatric dentistry. The journal promotes the practice, education and research specifically related to the specialty of pediatric dentistry. This peer-reviewed journal features scientific articles, case reports, and abstracts of current pediatric dental research.

Journal of Dentistry for Children

Acquired after the merger between the American Society of Dentistry for Children and the American Academy of Pediatric Dentistry in 2002, the *Journal of Dentistry for Children (JDC)* is an internationally renowned journal whose publishing dates back to 1934. Published three times a year, *JDC* promotes the practice, education and research specifically related to the specialty of pediatric dentistry. It covers a wide range of topics related to the clinical care of children, from clinical techniques of daily importance to the practitioner, to studies on child behavior and growth and development. *JDC* also provides information on the physical, psychological and emotional conditions of children as they relate to and affect their dental health.

Introduction

Manuscripts that are selected for publication promote the practice, education and research for the specialty of pediatric dentistry. Manuscripts are considered for publication only if the article, or any part of its essential substance, tables or figures have not been or will not be published in another journal or are not simultaneously submitted to another journal.

The statements, opinions, and advertisements are solely those of the individual authors, contributors, editors, or advertisers, as indicated. Published manuscripts do not necessarily represent the views of the editor, the AAPD Communications Department, or the American Academy of Pediatric Dentistry organization.

Types of Manuscripts

Type of manuscript must be one of the following: *Meta-Analyses/Systematic Reviews*, *Scientific Studies*, *Case Reports*, or *Literature Reviews (JDC only)*, *Letters to the Editor*, *Editorials* and *Brief Communications*.

Meta-Analyses / Systematic Reviews

Authors of systematic reviews must adhere to Preferred Reporting Items for Systematic Reviews and Meta-Analyses, available at: <http://www.prisma-statement.org/statement.htm>.

Structured Abstracts for systematic reviews are recommended. Headings should include: *Research Question*, *Research Protocol*, *Literature Search*, *Data Extraction*, *Quality Appraisal*, *Data Analysis and Results*, and *Interpretations of Results*.

Scientific Studies

Full-length manuscript not to exceed 3,500 words (including structured *Abstract*, *Introduction*, *Methods*, *Results*, *Discussion*,

Conclusions, and *Acknowledgments*; excluding *References* and *Figure Legends*). The structured abstract should be no longer than 200 words and contain the following sections: *Purpose*, *Methods*, *Results*, and *Conclusions*. The Introduction section should include only pertinent references. The Methods section should be sufficiently detailed to replicate the study. The Results section should include only results and not discussion of the data. The Discussion section should discuss the results, of the present study and compare them to the existing knowledge base. The Conclusions section should consist of succinct, numbered statements that are supported by the results of the study. They should not repeat the *Results* section.

Maximum Figures: 4 • Maximum Tables: 3

Case Reports

Full-length manuscript not to exceed 1,850 words (including unstructured *Abstract*, brief *Introduction*, *Description of Case*, *Discussion*, *Acknowledgments* (if any), and *References* (if any). The unstructured Abstract should be no longer than 150 words.

Maximum Figures: 4 • Maximum Tables: 3

Literature Reviews (JDC only)

Full-length manuscript not to exceed 2,500 words (including unstructured *Abstract*, *Introduction*, the *Review of the Literature* with appropriate subheading, *Discussion*, *Conclusions*, and *Acknowledgments*; excluding *References*). The unstructured Abstract should be no longer than 150 words.

Maximum Tables: 4

Letters to the Editor

Full-length manuscript not to exceed 350 words; excluding *References*.



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Type of article	Abstract maximum length & type	Maximum text length	Maximum references	Maximum no. of figures	Maximum no. of tables	Notes
<i>Meta-Analyses/ Systematic Reviews</i>	200 words, structured	3,500 words	No limit	No limit	No limit	Inclusion of figures and tables will be at the Editor-in-Chief's discretion
<i>Scientific Studies</i>	200 words, structured	3,500 words	40	4	3	
<i>Case Reports</i>	150 words, unstructured	1,850 words	20	4	3	
<i>Literature Reviews (JDC only)</i>	150 words, unstructured	2,500 words	0	0	4	
<i>Brief Communications</i>	150 words, structured	2,000 words	20	2	2	
<i>Letters to the Editor</i>	none	350 words	8	0	0	
<i>Editorials</i>	none	1,000 words	40	2	2	Invited by the Editor-in-Chief

Editorials

Full-length manuscript not to exceed 1,000 words; excluding *References* and *Figure Legends*.

Maximum Figures: 2 • Maximum Tables: 2

Brief Communications

Full-length manuscript not to exceed 2,000 words (including structured *Abstract*; excluding *References* and *Figure legends*). The structured *Abstract* should be no longer than 150 words.

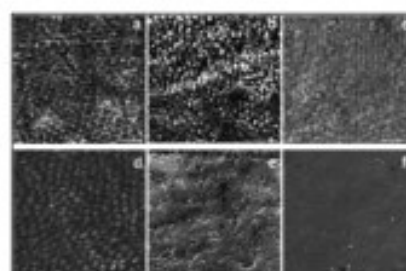
Authors desiring to have more Figures or Tables **MUST** agree to electronic publication of their manuscript, and must select this preference. Each separate chart, graph or photograph will be counted as a separate figure. Figures grouped together will be counted as their individual parts. See samples below:



3 Figures



4 Figures



6 Figures

Manuscript Submission

All new manuscripts must be submitted to AAPD's online submission and review website, ScholarOne Manuscripts; *Pediatric Dentistry* at: "<http://mc.manuscriptcentral.com/pediadent>"; *JDC* at: "<http://mc.manuscriptcentral.com/jdentchild>". Authors who do not yet have an account on the website should click the 'Create Account' link on the upper right-hand corner of the welcome page and follow the step-by-step process to open an account. On the dashboard page, authors should select the Author Center. In the Author Center, they should click the 'Click here to submit a new manuscript' link.

If you already have an account, enter your user ID and password and log in.

Manuscript submission guidelines for *Pediatric Dentistry* follow the 'uniform requirements for manuscripts submitted to biomedical journals' which have been developed by the International Committee of Medical Journal Editors (ICMJE). Please visit the ICMJE website at: "http://www.icmje.org/manuscript_prepare.html" for more information.

Author Information

The author must include each author's name, earned academic degrees, professional title (such as 'associate professor', 'chair'), work affiliations, complete address, telephone and fax numbers, and email address. In addition, each author should provide a statement of responsibility detailing what he or she contributed to the manuscript. These can be uploaded to the site as a Microsoft Word Document (it is recommended that statements from all authors be placed in a single document). No honorary designations such as 'FRCS', 'FICD', 'Diplomate', should be listed.

A submission with more than one author implies that each author contributed to the study or preparation of the manuscript. Only individuals who have made a significant contribution to the study or manuscript should be listed as authors. Contributors who do not meet the criteria for authorship, such as individuals who provided only technical help or writing assistance, should be listed in the *Acknowledgments* section at the end of the manuscript. The corresponding author should submit the following statement: "All authors have made substantive contribution to this study and/or manuscript, and all have reviewed the final paper prior to its submission."

Authors (including authors of letters to the editor) are responsible for disclosing all financial and personal relationships that might bias their work. If such conflicts exist, the authors must provide additional detail in the appropriate text box during online submission. Funding sources for the work being submitted must be disclosed in the *Acknowledgments* section of the manuscript.

Authors should express their own findings in the past tense and use the present tense where reference is made to existing knowledge, or where the author is stating what is known or concluded. Footnotes should be avoided and their content incorporated into the text. The editors reserve the right to revise the wording of papers in the interest of the journal's standards of clarity and conciseness.

The corresponding author will be asked to submit the names and email addresses of four preferred reviewers for their manuscript. Preferred reviewers should not be colleagues at the contributors' institution or present or former research partners.

Manuscripts will be published in English, using American spelling. Manuscripts must be submitted with proper English grammar, syntax, and spelling. Before submitting a manuscript for consideration authors may consider using a professional editing service such as: "<http://www.journalexperts.com>". AAPD does not endorse such service and use of such service has no relation with acceptance of a manuscript for publication.

Two versions of the manuscript must be uploaded, one version containing all the author information and one version without any information identifying the authors or their institutions. Tables should appear at the end of the main document, while photos, photomicrographs and graphs are to be submitted as separate files (.jpg or .tif format only). Do not embed tables, photos, figures or graphics in the text of the manuscript. Prior to submission, the corresponding author must guarantee that the article has not been published and is not being considered for publication elsewhere.

Manuscript Preparation

Authors are advised to review several recently published articles to familiarize themselves with proper format and requirements.

Title: Titles should be as brief as possible while clearly conveying the main point or purpose of the article. The manuscript title is limited to 20 words or less, and a short title limited to five words or less must also be submitted. All submissions, including titles and subheads, are subject to change during the editing process.

Short Title: Also referred to as a 'Running Head', must be a brief but comprehensive phrase of what the paper is all about, or a brief version of the title of the paper, not to exceed 50 characters.

Keywords: A maximum of five keywords must be submitted. Authors should ensure that the keywords appear in the title and/or abstract and that they are PubMed searchable.

Abstract: All submissions must include an *Abstract*. An *Abstract* should be brief, providing the reader with a concise but complete summary of the paper. Generalizations such as 'methods were described' should not be used. Meta-analyses/Systematic Reviews and Scientific Studies should have a structured abstract of no more than 200 words with the following sections: *Purpose*, *Methods*, *Results* and *Conclusions*. Case Reports, Literature Reviews (*JDC* only) and Brief Communications should have an unstructured abstract of no more than 150 words.

Introduction: The introduction should provide the context for the article, the objective of the study, and should state the hypothesis or research question (purpose statement), how and why the hypothesis was developed, and why it is important. It should generally not exceed two or three paragraphs.



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Methods: The *Methods* section should include as appropriate, a detailed description of the study design or type of analysis and dates and period of study; condition, factors, or disease studied; details of sample (eg study participants and the setting from which they were drawn); method of random sequence generation in detail (coin flip, random table, etc.); method of allocation concealment in detail (opaque envelopes, sequential numbered drug containers, etc.); description of treatment providers; whether providers and participants were blinded; inclusion and exclusion criteria; intervention(s), if any; outcome measures; method of blinding of outcome assessors; method of standardization and calibration of outcome assessors, including kappa statistics; and statistical analysis.

Results: The results reported in the manuscript should be specific and relevant to the research hypothesis. Characteristics of the study participants should be followed by presentation of the results, from the broad to the specific. The *Results* section should not include implications or weaknesses of the study, but should include validation measures if conducted as part of the study. Results should not discuss the rationale for the statistical procedures used.

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Conclusion: The *Conclusion* should help the reader understand why the research should matter to them after they have finished reading the paper. Conclusions should be numbered, succinct statements that are supported by the results of the study. They should not repeat the *Results* section.

Acknowledgment: Funding and other sources of support must be disclosed in the *Acknowledgment* section. Personal acknowledgments should be limited to appropriate professionals who have contributed intellectually to the paper but whose contribution does not justify authorship.

References: References are a critical element of a manuscript and serve three primary purposes—documentation, acknowledgment, and directing or linking the reader to additional resources. Authors bear primary responsibility for all reference citations. References should be numbered consecutively with superscript Arabic numerals in the order in which they are cited in the text. A list of all references should appear at the end of the paper in numeric order as they are cited in the text. Journal abbreviations are those used by Index Medicus. The reference style to use is the recent edition of the American Medical Association Manual of Style.

The following are sample references:

Journal

For journals, list all authors when there are six or fewer; when there are seven or more, list the first three, then 'et al.' Page numbers should be included where possible. For example: 12-8, 191-5, 347-51.

Bogert TR, García-Godoy E. Effect of prophylaxis agents on the shear bond strength of a fissure sealant. *Pediatr Dent* 1992;14(1):50-1.

Book

Bilder D. Genetic aspects of dental anomalies. In: McDonald RE, Avery DR, eds. *Dentistry for the Child and Adolescent*. 5th ed. Philadelphia: CV Mosby Co; 1987:90-116.

Article, report, or monograph issued by a committee, institution, society, or government agency

Medicine for the public: Women's health research Bethesda, Md.: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health; 2001. DHHS publication 02-4971.

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- Use basic fonts such as Arial, Courier, Helvetica no smaller than 11 points.

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Faculdade de Odontologia
Setor de Pacientes Especiais



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Cintia Cristina de Oliveira

Assinatura do Responsável

Nome: Cintia Cristina de Oliveira (mãe)
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Appendix C



DECLARAÇÃO



Declaro que Júlia Medeiros portadora do CPF nº 105.032.616-45 apresentou o trabalho "The influence of early childhood caries on congenital heart disease: case report", no evento Pet Odontologia: uma trajetória de 10 Anos da Universidade Federal de Uberlândia, no dia 23 de Junho de 2017, em Uberlândia, Minas Gerais.

Uberlândia, 23 de Junho de 2017.

Prof. Dr. Adriano Mota Loyola
Tutor do grupo PET Odontologia UFU