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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : JURNAL ILMIAH

Judul Karya Ilmiah (Artikel) : Noise Reduction in CT Images Using a Selective Mean Filter
 Jumlah Penulis : 7 Orang
 Status Pengusul : Penulis pertama/ Penulis ke / Penulis Korespondensi **
 Identitas Jurnal Ilmiah : a. Nama Jurnal : Journal of Biomedical Physics and Engineering
 b. Nomor ISSN : 2251-7200
 c. Volume, Nomor, Bulan, Tahun : Vol. 10 No. 5, Oktober 2020
 d. Penerbit : Shiraz University of Medical Sciences
 e. DOI artikel (jika ada) : 10.31661/JBPE.V0I0.2002-1072
 f. Alamat web jurnal : <https://jbpe.sums.ac.ir/>
 g. Terindeks di Scimagojr/Scopus atau di...**
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d. Kelengkapan unsur dan kualitas penerbit (30%)	11,5	11,5	11,5
Total = (100%)	38,8	36,8	37,8
Nilai untuk Pengusul : $(60\% \times 37,8) = 22,68$			

Semarang, 1 Desember 2021

Reviewer 1



Prof. Dr. Drs. Muhammad Nur, DEA
 NIP. 195711261990011001
 Bidang ilmu/Unit kerja : Fisika/Fakultas Sains dan Matematika

Reviewer 2



Dr. Drs. Catur Edi Widodo, M.T.
 NIP. 196405181992031002
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LEMBAR
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d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12			11,5
Total = (100%)	40			38,8
Nilai Pengusul = 60% x 38,8 = 23,28				

Catatan Penilaian artikel oleh Reviewer :

1. Kelengkapan unsur isi jurnal:

Pendahuluan sangat baik dan menggambarkan pentingnya penelitian ini. Telah terlihat kebaruan dari artikel. Artikel telah ditulis sesuai dengan Journal of Medical Physics and Engineering yang diterbitkan oleh Shiraz University of Medical Sciences.

2. Ruang lingkup dan kedalaman pembahasan:

Ruang lingkup bahasan sudah luas, hasil dan pembahasan sudah didiskusikan dengan mengaitkan hasil-hasil dari referensi.

3. Kecukupan dan kemutakhiran data/informasi dan metodologi:

Referensi sudah mutakhir. Metoda dapat dipahami oleh mereka yang ahli dibidang ini dan bisa direfleksikan. Diskusi yang dilakukan dalam membahas hasil penelitian ini telah melibatkan referensi yang dijadikan acuan.

4. Kelengkapan unsur dan kualitas terbitan:

Penerbitan sudah sangat baik dan jurnal terindeks Scopus, Q3/Q4 SJR: 0.3 (2020). Nilai maksimum untuk journal katagori ini adalah 40. Jurnal ditata dengan sangat baik sesuai standard Journal of Medical Physics and Engineering diterbitkan oleh Shiraz University of Medical Sciences

Semarang, 29 Desember 2021
 Reviewer 1



Prof. Dr. Drs. Muhammad Nur, DEA
 NIP. 195711261990011001
 Unit Kerja : Fisika
 Bidang Ilmu: Fakultas Sains dan Matematika

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Total = (100%)	40			36,8
Nilai Pengusul = 60% x 36,8 = 22,08				

Catatan Penilaian artikel oleh Reviewer :

1. Kesesuaian dan kelengkapan unsur isi jurnal:

Unsur isi jurnal sudah lengkap sesuai dengan tata cara penulisan yang memuat Title, Introduction, Materials and methods, Results and Discussion, Conclusion, Acknowledgement dan References. Substansi artikel sesuai bidang ilmu penulis pertama.

2. Ruang lingkup dan kedalaman pembahasan:

Substansi artikel yaitu tentang reduksi noise menggunakan selektif mean filter pada citra Computer Tomografi telah sesuai dengan ruang lingkup jurnal, dengan kedalaman pembahasan sangat baik

3. Kecukupan dan kemutakhiran data/informasi dan metodologi:

Data-data hasil penelitian sudah menunjukkan ada kebaruan informasi. Pustaka -pustaka yang diacu sesuai dengan tema penelitian dan sebagian besar pustaka adalah mutakhir.

4. Kelengkapan unsur dan kualitas terbitan:

Jurnal ini tergolong jurnal internasional dengan editorial board lebih dari 4 negara, Kontributor lebih dari 2 negara, unsur dan kualitas terbitan sangat baik gambar dan simbol jelas terbaca. Indikasi plagiasi dengan Cek Turnitin: Similaritas = 12% yang artinya jurnal ini bukan hasil plagiat.

Semarang, 23 Nopember 2021

Reviewer 2

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NIP. 196405181992031002

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Noise reduction in CT images using a selective mean filter

Anam C.^a ✉, Adi K.^a, Sutanto H.^a, Arifin Z.^a, Budi W.S.^a, Fujibuchi T.^b, Dougherty G.^c

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^a Department of Physics, Faculty of Sciences and Mathematics, Diponegoro University, Jl. Prof. Soedarto SH, Tembalang, Semarang, 50275, Central Java, Indonesia

^b Department of Health Sciences, Faculty of Medical Sciences, Kyushu University, 3-1-1 Maidashi, Higashi-ku, Fukuoka, 812-8582, Japan

^c Department of Applied Physics and Medical Imaging, California State University Channel Islands, Camarillo, 93012, CA, United States

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Background: Noise reduction is a method for reducing CT dose; however, it can reduce image quality. Objective: This study aims to propose a selective mean filter (SMF) and evaluate its

Cited by 1 document

Implementation of a selective mean filter algorithm to reduce noise in computed radiography images

Saragih, J.H. , Anam, C. , Budi, W.S.
(2021) *AIP Conference Proceedings*

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Anam, C. , Sutanto, H. , Adi, K.
(2020) *Biomedical Physics and Engineering Express*

THE SIZE-SPECIFIC DOSE ESTIMATE of PAEDIATRIC HEAD CT EXAMINATIONS for VARIOUS PROTOCOLS

Fahmi, A. , Anam, C. , Suryono
(2020) *Radiation Protection Dosimetry*

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effectiveness for noise suppression in CT images. Material and Methods: This experimental study proposed and implemented the new noise reduction algorithm. The proposed algorithm is based on a mean filter (MF), but the calculation of the mean pixel value using the neighboring pixels in a kernel selectively applied a threshold value based on the noise of the image. The SMF method was evaluated using images of phantoms. The dose reduction was estimated by comparing the image noise acquired with a lower dose after implementing the SMF method and the noise in the original image acquired with a higher dose. For comparison, the images were also filtered with an adaptive mean filter (AMF) and a bilateral filter (BF). Results: The spatial resolution of the image filtered with the SMF was similar to the original images and the images filtered with the BF. While using the AMF, spatial resolution was significantly corrupted. The noise reduction achieved using the SMF was up to 75%, while it was up to 50% using the BF. Conclusion: SMF significantly reduces the noise and preserves the spatial resolution of the image. The noise reduction was more pronounced with BF, and less pronounced with AMF. © 2020, Shiraz University of Medical Sciences. All rights reserved.

Author keywords

Algorithms; Computed tomography; Image processing; Image quality; Noise; Noise reduction; Selective mean filter; X-rays

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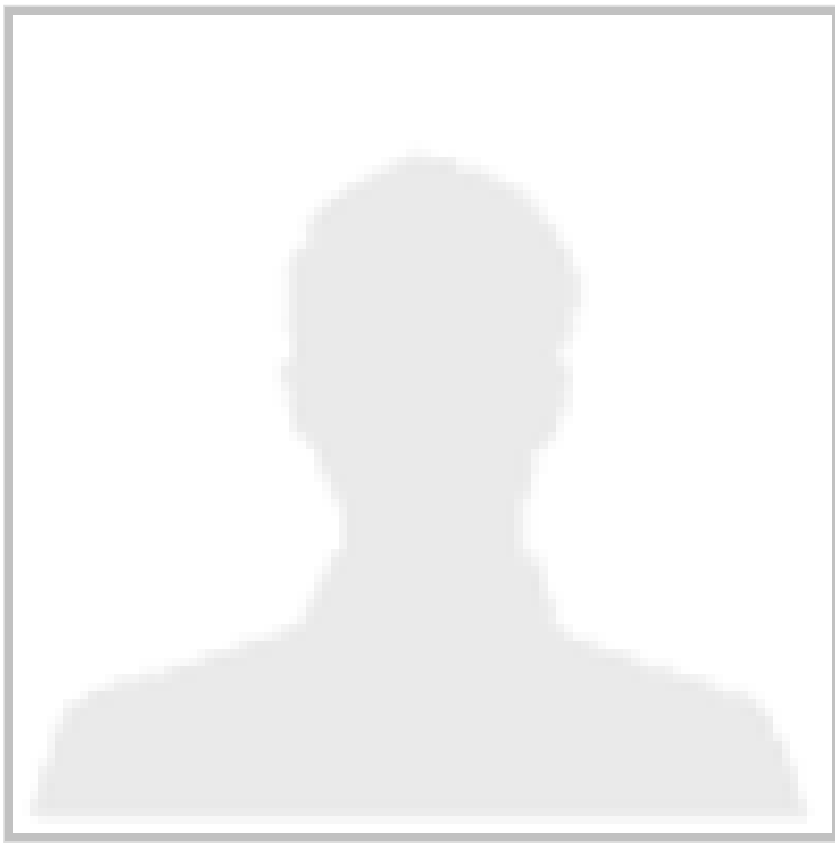
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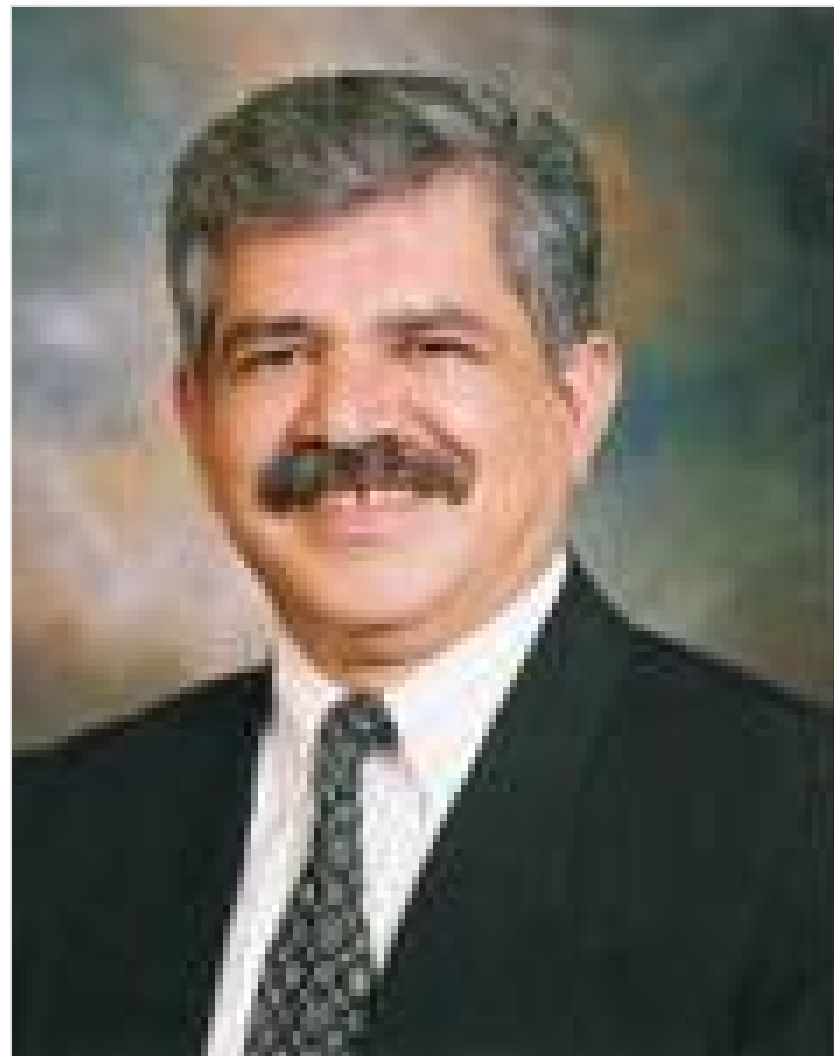
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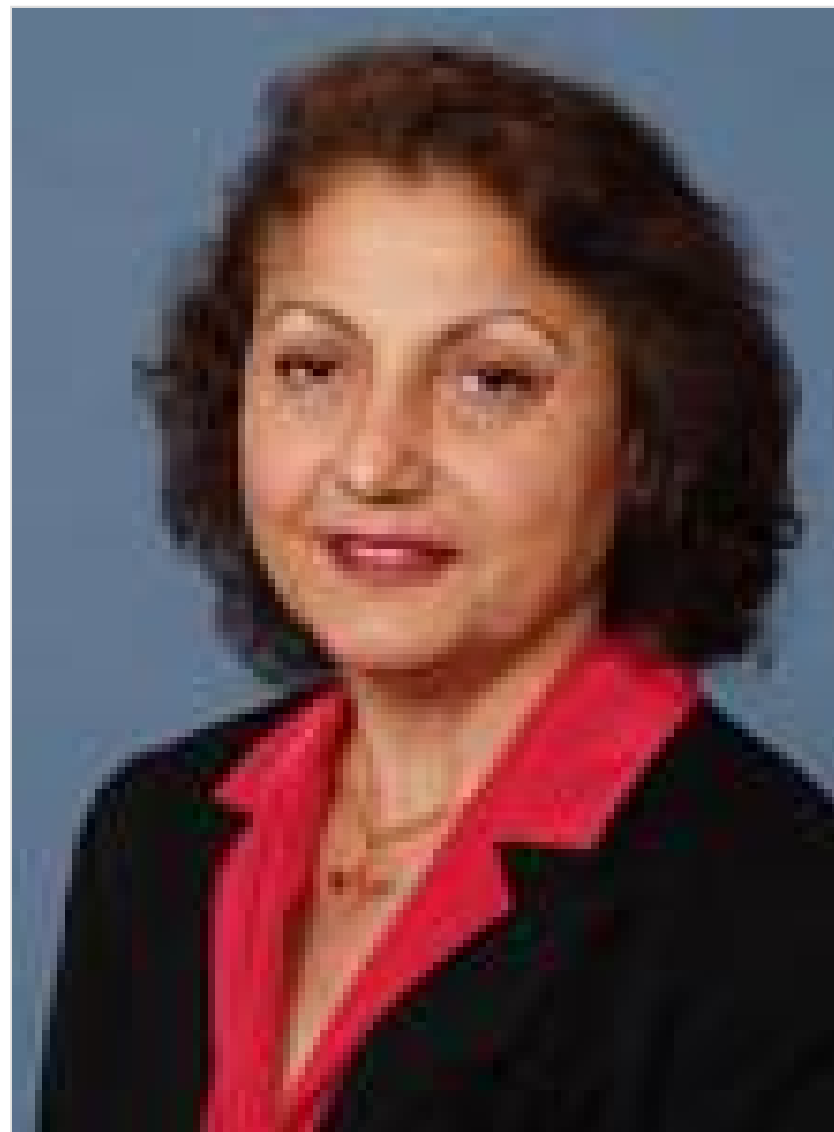
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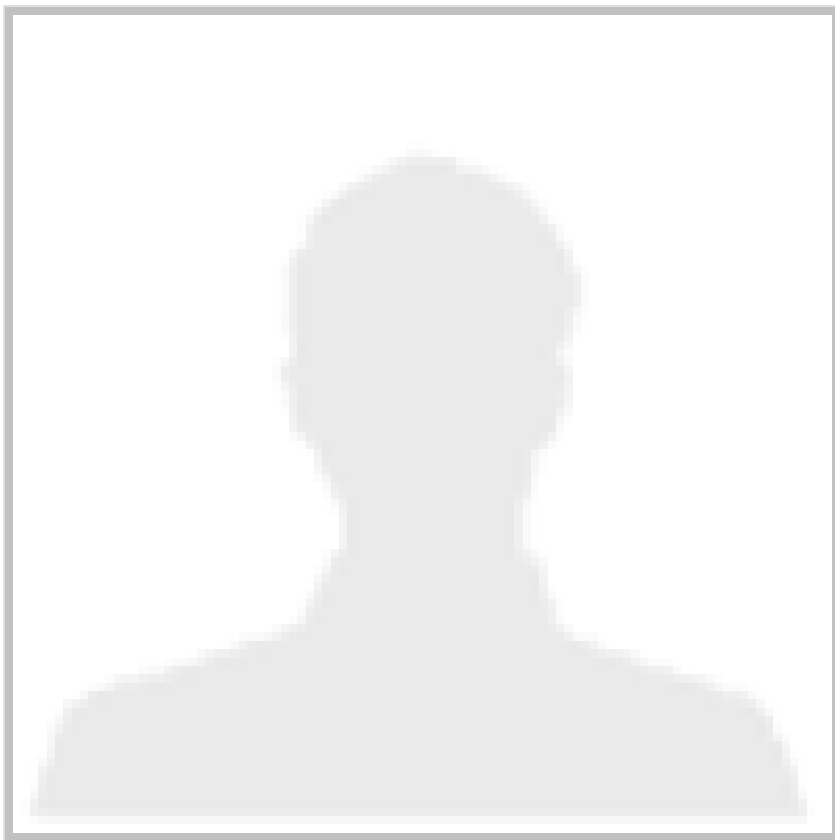
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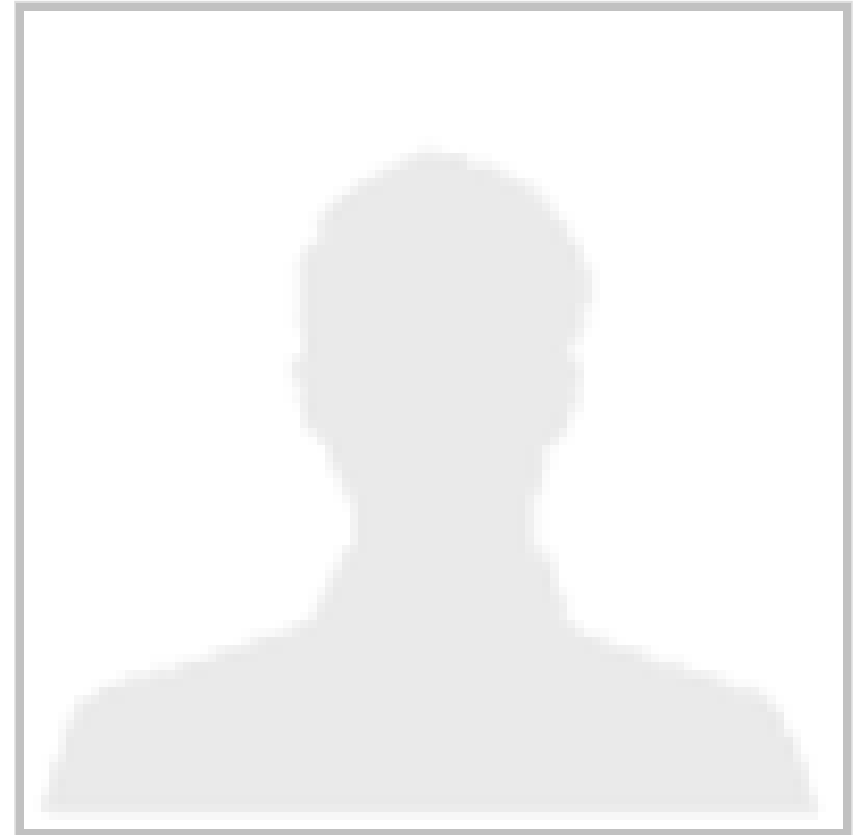
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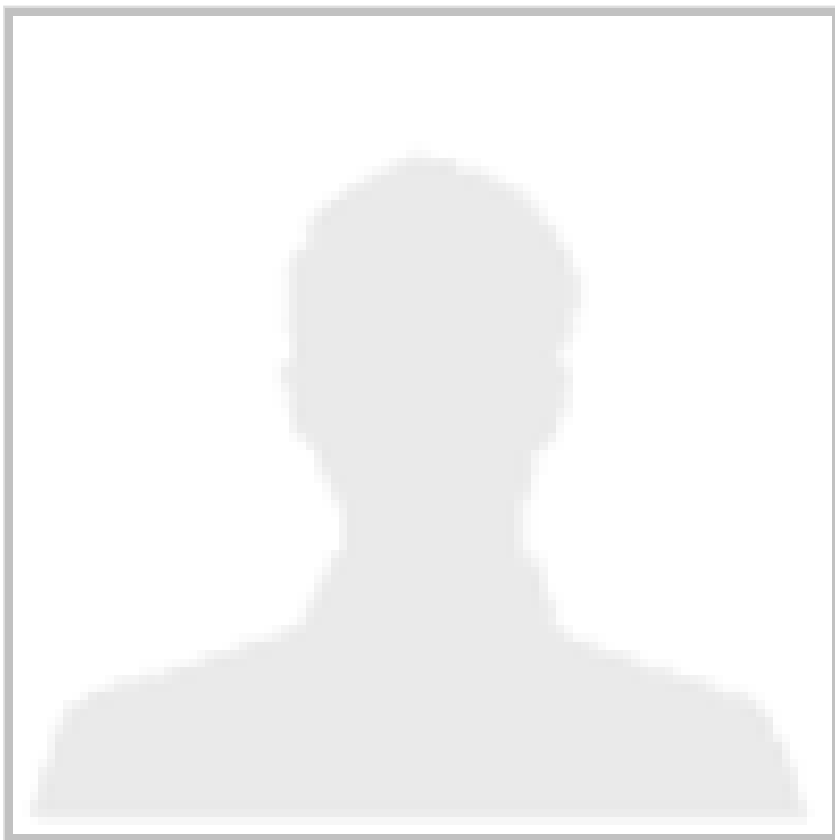


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Study of Demineralized Dental Enamel Treated with Different Fluorinated Compounds by Raman Spectroscopy

Barrera-Ortega C. C.^{1*}, Vázquez-Olmos A. R.², Sato-Berrú R. Y.², Araiza-Téllez M. A.³

ABSTRACT

Background: Current diagnostic methods for enamel caries detection are unable to detect caries lesions (incipient caries lesion) at a very early stage.

Objective: This study aims to determine the remineralizing effect of three fluorinated compounds on demineralized subsurface tooth enamel using Raman spectroscopy characterization.

Material and Methods: In this experimental study, sixty impacted 3rd molars, with intact anatomical crowns recently extracted and without structural defects, were sectioned longitudinally in a mesio-distal direction using a diamond disc, obtaining two working surfaces (buccal and lingual). The 120 working surfaces obtained were immersed for 96 h in a demineralization solution at 37°C in order to demineralize the enamel surface. All samples were randomly divided into three groups (n=30 each) and their surfaces were treated with silver diamine fluoride (SDF), Difluoride silane (DSF), and acidulated phosphate fluoride (APF), and with no treatment undertaken in the control group (CG). The samples were immersed in alternating solutions for demineralization and remineralization at pH 4.4 and pH 7.0, respectively. The results were analyzed with Principal Component Analysis (PCA) in order to determine the variance.

Results: The most important difference (91.7%) is observed in APF group between PCA1 respect to PCA2, followed by DSF (91.5%) and SDF (76.3%) respectively. Therefore, a greater remineralization in the dental enamel can be observed by the three experimental groups.

Conclusion: The APF and DSF have the effect of recovering the mineralization of dental enamel, except for the SDF. Functional groups OH⁻ and PO₄³⁻ were identified in all subsurface.

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Keywords

Tooth Remineralization; Dental Enamel; Raman Spectroscopy; Fluorine Compounds, Tooth Demineralization

Introduction

Dental enamel is the hardest and most highly mineralized tissue of the human body, which contains more than 95% of carbonated hydroxyapatite and less than 1% of organic matter. As a highly mineralized tissue, enamel can withstand a wide range of functional and non-functional loads and protect the underlying dentin from directly ex-

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Spiral Computed Tomography with Phytocomposition as a Diagnostic Tool for Adhesive Intestinal Obstruction

Mufazalov F.¹, Sufiyarov I.², Hasanov A.², Yamalova G.³, Bakirov E.³, Samorodov A.^{4*}

ABSTRACT

Background: Adhesive intestinal obstruction is a common and potentially lethal complication after surgical interventions in the abdomen. Radiologic imaging is the main diagnostic method.

Objective: This study aims to analyse the diagnostic value of spiral computed tomography with a novel method (n = 54).

Material and Methods: In this multidirectional cohort study, we present the data with non-parallel (historical) control. This study included the analysis of results of patients with a diagnosis of intestinal obstruction (n = 54) who were admitted to the surgical departments of the City Clinical Hospitals (Ufa city) from 2013 to 2019; the patients' examination methods included computed tomography with conventional enhancement. The proposed novel enhancement method was implemented by ingesting a mixture containing 50 ml of the contrast Unigexol (300 mg) in 1.0 L cold mineral carbonated water, and Computed tomography (CT) was performed during 40 min after ingesting the contrast meal. Further, the patients with suspected obstruction in the colon were administered a pre-prepared contrast enema with a decoction of leaves of smoke-tree (100 g), chamomile flowers (100 g) and calendula flowers (100 g). Additionally, CT was performed.

Results: Obstruction was conservatively stopped in 24 (44.4%) patients of the main group. Remaining 30 (55.6%) patients from the main group were operated with minimal surgical access in the early stages.

Conclusion: Owing to early diagnosis of intestinal obstruction and application of the phytocomposition during the examination, exerting various effects such as antispasmodic, analgesic, disinfectant, bactericidal, cicatrising, choleric, tanning and decongestant, unnecessary surgical interventions were prevented.

Citation: Mufazalov F, Sufiyarov I, Hasanov A, Yamalova G, Bakirov E, Samorodov A. Spiral Computed Tomography with Phytocomposition as a Diagnostic Tool for Adhesive Intestinal Obstruction. *J Biomed Phys Eng*. 2020;10(5):607-612. doi: 10.31661/jbpe.v0i0.1912-1032.

Keywords

Intestinal Obstruction; Enema; Abdomen; Tanning; Analgesic; Phytocomposition

Introduction

Adhesive intestinal obstruction is considered one of the most common and potentially lethal complications after surgical interventions in the abdomen. According to the International Adhesion Society, the post-operative adhesive process in the abdomen is considered as a common complication of surgical interventions. Owing to peritoneal commissures, approximately 1% of previously operated

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