

Cranex

Planmeca Tome

(MS)

(DDS)

(DDS)

(DDS)

*

s.t_mohtavipour@yahoo.com:

// :

// :

Cranex Tome Planmeca

ion - chamber

%

sample paired test

Cranex Tome

/ mSV Cranex Tome / mSV

/ mSV Cranex Tome / mSV

Cranex Tome

/

/

:

Danforth

Planmeca 2002 CC praline

(.)

Hayakawa

(.)

Lecomber (.)

(.)

)
(
Cranex Tome %
(Sordex,Finland) .()

.()
Cranex Tome

SPSS
sample paired test

% (USA,Arrow-tech) ion chamber



()
()

focal trough

planmeca EC

(Helsinki,Finland) proline

(planmeca Cranex Tome)

()

paired

Planmeca

Cranex Tome Planmeca

%

sample

()

Cranex Tome

planmeca

(mSV)						
	S	mA	KVP			
/				A		
/				B		
/				C		
/				D		
/				E		
/				F		
/				G		
/				H		

:S

Cranex Tom

(mSV)						
	S	mA	KVP			
/				A		
/				B		
/				C		
/				D		
/				E		
/				F		
/				G		
/				H		

Planmeca Cranex Tome

		Cranex Tome	planmeca		
NS	/	/	/	A	
NS	/	/	/	B	
NS	/	/	/	C	
NS	/	/	/	D	
NS	/	/	/	E	
NS	/	/	/	F	
NS	/	/	/	G	
NS	/	/	/	H	

NS: Non Significant

Isoardi . TLD
 Gijble . ion chamber TLD
 . (DWP) dose – width product
 DWP . ()

 m Sv planmeca .
 . / m Sv , Cranex Tome / Isoardi .
 Danforth ion-chamber
 Planmeca 2002 CC Proline . () DWP TLD
 TLD TLD ion-chamber
 . ()
 mA KVP
 ion- chamber
 /
 Danforth
 Danforth
 Cranex Tome
 Planmeca EC Porline
 Lecomber .
 / Planmeca 2002 CC Proline
 .
 Gigbles .
 . () TLD TLD
 Planmeca EC
 Planmeca 2002 CC proline . Cranex Tome Proline
 . () Danforth () Lecomber / Cranex Tome
 Lecomber / Planmeca EC Porlin
 Orthophos . ()

planmeca CC Proline () TLD
 / mA KVP
 KVP
 / mA
 / () white
 / / mSV Cranex Tome Cranex Planmeca
 / / mSV Tome
 White Lecomber

() White
 / mSV
 μSV Cranex Tome
 / × Orthophos planmeca 2002 EC porline
 White
 white
 Cranex Tome %
 Hayakawa
 Orthophos ()

1. Bianchi J, Goggins W, Rudolph M. In Vivo Thyroid And Lens Surface Exposure With Spiral And Conventional Computed Tomography In Dental Implant Radiography. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2000; 90:249-53.
2. White S, Pharoah M. Oral Radiology Principles and Interpretation. New York; Mosby, 2009: 32-42.
3. Danforth RA, Dennis E. Effective Dose From Radiation Absorbed During A Panoramic Examination With A New Generation Machine. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2000; 89:236-43.
4. Hayakawa Y, Koboyashi N, Kuroyonagi K, Nishizawa K. Paediatric Absorbed Doses From Rotational Panoramic Radiography. Dentomaxillofac Radiol 2001; 30:285-292.
5. Lecomber AR, Downes SL, Mokhtari M, Faulkner K. Optimisation Of Patient Doses In Programmable Dental Panoramic Radiography. Dentomaxillofac Radiol 2000; 29:107-112.

6. Isoardi P, Ropolo R. Measurement Of Dose – Width Product In Panoramic Dental Radiology. The British Journal Of Radiology 2003;76:129-131.

7. Gijbels F, Jacobs R, Bogaerts R, Debaveye D, Verlinden S, Sanderink G. Dosimetry Of Digital Panoramic Imaging. Part I: Patient Exposure. Dentomaxillofac Radiol 2005;34:745-749.

8. Lecomber AR, Yoneyama, Love Lock DJ, Hosoi T, Adamsam. Comparison Of Patient Dose From Imaging Protocols For Dental Implant Planning Using Conventional Radiography And Computed Tomography. Dentomaxillofac Radiol 2001;30:255-259.

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Comparison of Skin Absorbed Dose in Thyroid Gland Area of Planmeca and Cranex Tome Panoramic Machines

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Abstract

Introduction: The goal of health physics is to prevent the occurrence of deterministic effects and to reduce the likelihood of stochastic effects by minimizing the exposure of patients and radiation workers during radiographic examination. Regarding to panoramic radiography is the most common radiograph in the head and neck region and thyroid gland is the most sensitive area and also the extensive variety in panoramic machines, this comparative study was designed.

Objective: Comparison of skin absorbed dose in thyroid gland area of planmeca and cranex tome panoramic machines.

Materials and Methods: In this in vitro study a dry skull and a Pocket ion-chamber dosimeter were used. At first, panoramic examination was done in different exposure conditions for small, medium, large and child patients in planmeca machine. After every exposure, the charge of dosimeter was read and recorded. These stages were repeated for Cranex Tome Machine. Then statistical analysis was performed by sample paired test with %95 confidence.

Results: In both panoramic machines, the highest mean thyroid skin dose was detected in large size patient and in the highest level of exposure factors. The mean values of doses were recorded 0.11 mSV in planmeca machine and 0.14 mSV in Cranex Tome machine. There was the least mean absorbed dose in child programs and 0.03 mSV in planmeca machine and 0.02 mSV in Cranex Tome machine. There was no significant statistical difference between mean absorbed doses in patients with different size in two panoramic machines

Conclusion: There was no difference between two panoramic machines for thyroid skin dose .Child program reduced thyroid skin dose definitely in both systems.

Key word: Radiography, Panoramic /Radiometry/Thyroid gland

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