

الأية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ
اللَّهُ لَا إِلَهَ إِلَّا هُوَ الْحَيُّ الْقَيُّومُ لَا تَأْخُذُهُ
سِنَةٌ وَلَا نَوْمٌ لَهُ مَا فِي السَّمَوَاتِ وَمَا فِي
الْأَرْضِ مَنْ ذَا الَّذِي يَشْفَعُ عِنْدَهُ
إِلَّا بِإِذْنِهِ يَعْلَمُ مَا بَيْنَ أَيْدِيهِمْ وَمَا خَلْفَهُمْ
وَلَا يُحِيطُونَ بِشَيْءٍ مِنْ عِلْمِهِ إِلَّا بِمَا شَاءَ
وَسِعَ كُرْسِيُّهُ السَّمَوَاتِ وَالْأَرْضَ
وَلَا يَئُودُهُ حِفْظُهُمَا وَهُوَ الْعَلِيُّ الْعَظِيمُ

صدق الله العظيم

سوره البقره ايه الكرسي (255)

Dedication

To.....

My family

My teachers

My friends

My colleagues

Acknowledgements

I extremely grateful to many people who supported me during the preparation of this study.

Firstly, I would like to express my deep gratitude to my supervisor **Dr.Hussen Ahmed Hassan** for his supports and advice.

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Abbreviation

CR: Computed Radiography

DR: Digital Radiography

SNR: Signal To Noise Ratio

3D: three dimension

PSP: photo stimulable phosphor plates LDAs (Linear Diode Arrays)

NR:noise reduction

LCA: Lateral chromatic aberration

LR: Low resolution

HR: high resolution

SR: super resolution

NDRL: National Diagnostic Reference Level

NPS: power spectrum

CIP: conventional image processing

FFD: Focal Film Distant

mA : Mail ampere

KV : kilo volte

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Abstract

The objective of the research was to study the image quality in digital radiography in Modern Medical Center.

the data were collected the from radiography department in Modern Medical Center for 40 patient (males and femals) in adult with average age (15-45) ,20 patients under went to chest x ray image PA ,10 chest performed by digital radiography (DR) and other 10 chest performed by computed radiography (CR).

20 patients Lumbar spine, 10 spinal cord performed by digital radiography and other 10 performed by computed radiography, this images evaluated by this score (excellent=4 ,very good=3,good=2,acceptable=1) in all each factor images by ten senior graduated students in sudan university and toke the average of images .

The percentage of contrast in chest images in DR is 93% and in CR is 91%, the percentage of resolution in chest images in DR is 93.4% and in CR is 90.3%, the percentage of artifact in chest images in DR is 96% and in CR is 93% and the percentage of noise in chest images in DR is 97% and in CR is 94.5% ,the percentage of contrast lumbar spine images in DR is 91.3% and in CR is 87.4%, the percentage of resolution lamer spine images in DR is 93.1% and in CR is 87.7%, the percentage of artifact lumbar spine images in DR is 76.2% and in CR is 72.3% and the percentage of noise lumbar spine images in DR is 97% and in CR is 83.8%.

This means the all percentages of images parameters in DR is better than in CR.

الخلاصة

الهدف من هذا البحث هو دراسة جوده ألصوره في التصوير الإشعاعي بالديجيتال . لإخراج هذا البحث قام الباحث بجمع المعلومات من قسم التصوير بالأشعه المركز الطبي الحديث لأربعين مريض (ذكور واثاث) تتراوح اعمارهم من (15-40) سنه ، 20 مريض خضعو للتصوير الإشعاعي للصدر 10 مريض بالتصوير الاشعاعي بالديجيتال و 10 مريض بالتصوير الإشعاعي بالكمبيوتر .

20 مريض خضعو للتصوير الإشعاعي للعمود الفقري ، 10 مريض للتصوير الاشعاعي بالديجيتال 10 مريض للتصوير الاشعاعي بالكمبيوتر، كل هذه الصور قيمت بهذه الدرجات (لو ممتاز = 4 , جيد جدا=3, جيد=2 ، مقبول =1) لكل عوامل الصوره بواسطه عشره طلاب خريجين سناير في جامعه السودان .

النتيجه لتصوير الصدر النسبه للتباين في الديجتال 93% وفي الكمبيوتر 91%, النسبه لدرجه وضوح الصوره في الديجيتال 93.4% وفي الكمبيوتر 90.3%, النسبه للخطاء في الديجيتال 96% وفي الكمبيوتر 93%, النسبه للضوضاء في الديجتال 97% وفي الكمبيوتر 94.5%.
النتيجه لتصوير العمود الفقري النسبه للتباين في الديجتال 91.3% وفي الكمبيوتر 87.4%, النسبه لدرجه وضوح الصوره في الديجيتال 93.1% وفي الكمبيوتر 87.7%, النسبه للخطاء في الديجيتال 76.2% وفي الكمبيوتر 72.3%, النسبه للضوضاء في الديجتال 97% وفي الكمبيوتر 83.8%.
هذا يعني ان النسبه لكل الصور للتصوير الاشعاعي بالديجيتال افضل من التصوير الاشعاعي بالكمبيوتر.