بسم الله الرحمن الرحيم

قال تعالى :

{ لاَ يُكَلِّفُ اللّهُ نَفْسًا إِلاَّ وُسْعَهَا لَهَا مَا كَسَبَتْ وَعَلَيْهَا مَا اكْتَسَبَتْ رَبَّنَا لاَ تُؤَاخِذْنَا إِن نَّسِينَا أَوْ أَخْطَأْنَا رَبَّنَا وَلاَ تَحْمِلْ عَلَيْنَا إِصْرًا كَمَا حَمَلْتَهُ عَلَى الَّذِينَ مِن قَبْلِنَا رَبَّنَا وَلاَ تُحَمِّلْنَا مَا لاَ طَاقَةَ لَنَا بِهِ وَاعْفُ عَنَّا وَاغْفِرْ لَنَا وَارْحَمْنَآ أَنتَ مَوْلاَنَا فَانصُرْنَا عَلَى الْقَوْمِ الْكَافِرِينَ }

سورة البقرة الآية {286}

Dedication

.....To

My family

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My Teachers

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My Friends

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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. Hussan .Ahmed Hassan for his supports and advice

Also great thanks to the staff of Radiology department in Almarkaz Altebi Alhadeeth and Alneleen Medical Center for their helps to complete the study, and I would like to thank every one who has participated in the completion of .this study

I would like to sincerely thank my family for their consistent mental support. Finally, Thanks by every means of thanks for every person help in successful of this .research

Contents

List of Tables

List of Figures

Abstract

MRI scan play important role in diagnostic radiology, make possible study of sectional anatomy, evaluate the texture of soft lesion, three dimension imaging .and fast sequence examination

The aim of this study to compare between two MR machine with different magnetic power the first 1.5 tesl an the second 0.3 tesla to determine the best in .quality between them

Random sample consist of 20 patient divided 50:50 between the two MR machine. The patient data registered (age and gender).Their age ranged from 20 to 80 years old. The study was done in (ALmarkz ALtiby ALhdeeth) and (ALNileen Medical Center)).

The Chi square test was applied to collected data and the output values showed clearly the MR machine 1.5T was better than MR machine 0.3T in lumbar spine image quality.

المستخلص

يمثل الرنين المغنطيسى دورآ هاما فى مجال الاشعه التشخيصيه وله عدة مميزات مثل دراسه التشريح المقطعى تقيم قوام الانسجه التصوير ثلاثى الابعاد والفحص التسلسلى السريع.

الهدف من هذه الدراسه المقارنه بين جهازين للرنين المقنطيسي الاول قوته 1.5 تسلا والثانى 0.3 تسلا لمعرفه ايهما افضل فى جودة الصور للفقرات القطنيه.

تم اخذ 20 عينه عشوائيه قسمت بالتساوى على الجهازين وكانت البيانات المأخوذه منه هى(العمر-النوع)وكان توزيع اعمارهم بين 20 الى 80 عام.

تم اجراء الدراسه فى (المركز الطبي الحديث) و (مركز النيلين الطبي).

تم تحليل البيانات المأخوزه بواسطة (Chi-Square test) واظهرت القيم المخرجة بواسطه التحليل افضليت جهاز الرنين المغنطيسي بقوة 1.5 تسلا على نظيره فى جوده الصور الفقرات القطنيه.

:ABBREVIATIONS

.A summary of common abbreviations in M.R.I and throughout the research

A……. Anterior

ASIS……Anterior superior iliac spine

AVM……Arterio venos malformation

CNR…….Contrast to noise ratio

CNS……..Central nervous system

EPI…….Echo planar imaging

FAST……..Fourier acquired steady state

FID……..Free induction decay signal

FLAIR…….Fluid attenuated inversion recovery

F.MRI……..Functional MRI

FSE……..Fast spin echo

GFE…….Gradient field echo

GR……..Gradient rephrasing

I……..Inferior

IR……Inversion recovery

MAST…….Motion artifact suppression

MR……..Magnetic resonance

MRA……Magnetic resonance angiography

MRI……..Magnetic resonance imaging

PC…….Phase contrast

PD…….Proton density

ROI……Region of interest

SE……..Spin echo

SNR……Signal to noise ratio

SS……Single shot

STIR……Short time inversion recovery

TE…….Echo time

TOF……..Time of flight

TR…….Repetition time

TSE……Turbo spin echo