

To my generous father and kind mother, to my sisters & brother and their lovely kids.

To my dear teachers and colleagues in College of Medical Radiologic Science.

For all of them I dedicate this work.

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Researcher

List of Abbreviations

AP	Antero Posterior
APO	Antero posterior oblique
ASIS	Anterior Superior Iliac Spine
B.Sc	Bachelor of Science
C4	4 th Cervical vertebra
CSF	Cerebrospinal fluid
FOV	Field Of View
FSE	Fast Spin Echo
GRE	Gradient Recall Echo
L1	1 st lumbar vertebra
L2	2 ^{ed} lumbar vertebra
L4	4 th lumbar vertebra
L5	5 th lumbar vertebra
MRI	Magnetic Resonance Imaging
ms	milli-second
MSc	Master of science
NMR	Nuclear Magnetic Resonance
NMV	Net Magnetization Vector
PA	Postero Anterior
PAO	Postero Anterior oblique
PD	Proton density
RF	Radio Frequency
RTA	Road Traffic Accident
ROI	Region of Interest
S1	1 st sacral vertebra
SE	Spine Echo
TE	Time to Echo
TR	Time to Repeat
T1	Longitudinal magnetization relaxation time

T2	Transverse magnetization relaxation time
T2*	Inhomogeneous magnetization decay time
T7	7 th thoracic vertebra
T12	12 th thoracic vertebra

List of figures & tables

Figure & table

Page

Fig (2-1): (A) Lateral aspect & (B) Superior aspect of a typical cervical vertebra	6
Fig (2-2): (A) Lateral aspect & (B) Superior aspect of thoracic vertebra	7
Fig (2-3): (A) Lateral aspect and (B) Superior aspect of typical lumbar vertebra	8
Fig (2-4): (A) Anterior (B) lateral aspect of the sacrum and coccyx	9
Fig (2-5): (A) AP axial open mouth and (B) lateral with horizontal beam for the Atlas and Axis	21
Fig (2-6): Structures shown for (A) AP axial open mouth and (B) lateral position of atlas and axis	21
Fig (2-7): AP axial for cervical vertebra (A) erect and (B) supine position	25
Fig (2-8): lateral cervical spine (A) supine and (B) erect position	25
Fig (2-9): Structures shown, (A) AP axial and (B) lateral of cervical spine	25
Fig (2-10): PA axial oblique position (recumbent) (A) RAO and (B) LAO	26
Fig (2-11): Erect position, (A) PA axial oblique (RAO) and (B) AP right axial oblique (LPO)	26
Fig (2-12): Structures shown of (A) RAO and (B) LAO of the cervical spine	26
Fig (2-13): Supine AP position of the thoracic spine	30
Fig (2-14): Lateral position of the thoracic spin (A) erect and (B) recumbent position	30
Fig (2-15): Oblique position of the thoracic spine (A) erect and (B) recumbent position	30
Fig (2-16): Structures shown (A) AP, and (B) lateral and (C) oblique views of the thoracic spine	30
Fig (2-17): Lumbar spine (A) supine AP position and (B) lateral recumbent position	33
Fig (2-18): Lumbar spine recumbent (A) LPO and (B) RPO position	33
Fig (2-19): Structures shown (A) AP, (B) lateral and (C) oblique views of the lumbar spine	33
Fig (2-20): Supine position of (A) Sacrum AP axial projection and	

(B) coccyx AP axial projection	36
Fig (2-21) Structures shown of AP views of (A) sacrum and (B) coccyx	36
Fig (2-22): Recumbent position of (A) lateral projection of the sacrum and (B) lateral projection of the coccyx	36
Fig (2-23): Structures shown of lateral views of (A) sacrum and (B) coccyx	36
Table & Fig (4-1): Sex of the patients	46
Table & Fig (4-2) Rang of the patient s age	47
Table & Fig (4-3): Site of spine injury	48
Table & Fig (4-4): Type of spine injury	49
Table & Fig (4-5): Cause of spine injury	50
Table & Fig (4-6): Time in which the conventional x-ray images of the spine are taken from time of injury	51
Table & Fig (4-7): Findings of conventional radiographs of the injured spine	52
Table & Fig (4-8): Normal and abnormal spine radiographs of injured spine	53
Table (4-9): The relation between findings of conventional x-ray images and time in which they are taken from time of injury	54
Table (4-10) & Fig (4-9): Time in which MRI images of the spine are taken from time of injury	55
Table (4-11): The relation between type of spine injury and time in which the conventional x-ray images of the spine are taken from time of injury	56
Table (4-12): The relation between type of spine injury and time in which MRI images of the spine are taken from time of injury	57
Table (4-13) & Fig (4-10): Finding of MRI for injured spine	58
Table (4-14) & Fig (4-11): Normal and abnormal MRI of injured spine	59
Table (4-15): The relation between findings of MRI of the spine and time in which they are taken from time of injury	60

الخلاصة:

تناولت الدراسة 30 حالة اصابة بالعمود الفقري، أجري لها الفحص بالأشعة السينية (وضع أمامي وجانبي) وبالفحص بالرنين المغناطيسي لتوضيح دور كل منهما في تقييم وتشخيص الحالة، (دراسة مقارنة بين فحص الأشعة السينية العادية وفحص الرنين المغناطيسي في حالات اصابات السلسلة الفقرية).

أجريت الدراسة في الفترة من شهر يناير الي شهر سبتمبر 2004م في مركز الانقاذ للرنين المغناطيسي {1 تسلا} (دعاء-الخرطوم)، مستشفى السلاح الطبي {0.2 تسلا} (امدرمان) و مستشفى يستبشرون {0.5 تسلا} (الخرطوم). جمع الباحث صور وبيانات المصابين وتم تحليلها ثم مناقشتها، وأوضحت النتائج أن 17 مصابا (56.6% من 30) أجري لهم الفحص بالأشعة العادية كانت نتائج الفحص طبيعية و 13 مصابا (43.3% من 30) كانت نتائجهم غير طبيعية، و 6 مصابين (20% من 30) أجري لهم الفحص بالرنين المغناطيسي كانت نتائج الفحص طبيعية و 24 مصابا (80% من 30) كانت نتائجهم غير طبيعية.

خلص الباحث من الدراسة بأن للتصوير بالأشعة السينية العادية دور في تشخيص حالات كسور وخلع الفقرات، وللتصوير بالرنين المغناطيسي دور في تقييم وتشخيص اصابات النخاع الشوكي والانزلاق القضيروفي بالإضافة الي الكسور وخلع الفقرات.

ABSTRACT

The study included sample of 30 traumatic patients investigated initially by conventional X-ray (AP & lateral views) and then scanned by MRI of the spine to show the role of each of them in assessment and diagnosing the case (Comparative Study Between conventional X-ray Imaging and Magnetic Resonance Imaging (MRI) In Trauma of Spine).

The study took place from January to September 2004 in Elingaz diagnostic center [1 tesla](Doaa- Khartoum), Military hospital[0.2 tesla] (Omdurman), and Yastabshiroon hospital [0.5 tesla] (Khartoum). The researcher has collected images and data of the patients and then analyzed and discussed, the results show that 17 patients (56.6% of 30) investigated by conventional x-ray imaging have normal images, and 13 patients (43.3% of 30) have abnormal images, and 6 patients (20% of 30) investigated by MRI have normal images with 24 patients (80% of 30) have an abnormal MR images.

The researcher concludes that conventional x-ray has a role in diagnosing fractures and dislocation of the vertebrae and spine MRI

has a role in assessment and diagnoses of spinal cord injury or disc herniation, in addition to the effects of fractures and dislocation of the vertebrae.