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## **Dedication**

**To the soul of my father**

**To my mother**

**To my brothers and sisters**

**To my wife and children**

**To my teachers, friends and colleagues for their inspiration,  
encouragement and guidance**

## **Acknowledgement**

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## **Abstract:**

The study was conducted at Omdurman Military Hospital during the period from June to December 2009, to evaluate the cervical disc problems using conventional X-ray and MRI.

Cervical spine X-rays and MRI images were obtained from fifty patients.

For analysis of both x rays and MRI findings, the data were first summarized into data master sheet, and then analyzed by using simple statistical method, The collected data were compared and the result showed, mild different between male and female who had been examined, disc prolapsed and spondylosis often affects the cervical spine in people at the age of 41-60 years, X-ray cannot detect disc herniation while MRI revealed them by 38% of cases. X-ray cannot detect disc bulge while MRI revealed them by 10% of cases. spondylosis was significantly better by X-ray (32 %) than MRI (14%). degenerations can be detected by both modalities by (20%). In conclusion, both modalities are important in the evaluation of cervical disc problems.

## المستخلص:

أُجريت هذه الدراسة في مستشفى أمدمان العسكري أثناء الفترة من يونيو إلى ديسمبر 2009 لقيِّم إصابة القرص العنقي بواسطة الأشعة السينية والتصوير بالرنين المغناطيسي. أشعة العمود الفقري السينية للقرص العنقي وصور التصوير بالرنين المغناطيسي تَحصل عليها من خمسون مريض.

لتحليل كلتا نتائج التصوير بالرنين المغناطيسي والأشعة السينية، البيانات لُخصت أولاً إلى الصفحة الرئيسية، وبعد ذلك حُللت بإستعمال الطريفة الإحصائية البسيطة، وبعد ذلك تم مقارنة البيانات التي تم جمعها. أظهرت النتيجة إختلافاً معتدلاً بين الذكور والإناث الذين قد خضعوا للفحص، هبوط القرص و قسط فقاري يُؤثر على العمود الفقري العنقي في أغلب الأحيان في الأشخاص في اعمار بين 41-60 سنوات، الأشعة السينية لا تستطيع إكتشاف تقرن القرص بينما التصوير بالرنين المغناطيسي كشفهم بنسبة 38% من الحالات. الأشعة السينية العادية لا تستطيع إكتشاف نتوء القرص بينما تصوير بالرنين المغناطيسي كشفهم بنسبة 10% من الحالات. قسط فقاري كان أفضل جداً بالأشعة السينية بنسبة 32% من التصوير بالرنين المغناطيسي 14%. الإنحطاط يُمكن أن يُكتشف بكلا الأشعة السينية 20% وتصوير بالرنين المغناطيسي 20%.

في الختام لوحظ أهمية كل من الفحصين في تقييم مشاكل القرص العنقي .

## **Abbreviations:**

MRI	Magnetic resonance imaging
NMR	Nuclear magnetic resonance
CT	Computed tomography
FA	Flip angle
NEX	Number of excitation
FSE	Fast spin echo
FOV	Field of view
GE	General Electric
ETL	Echo train length
RF	Radio frequency
FSE	Fast spin echo
SE	Spin echo
SNR	Signal to noise ratio
T	tesla
T1	T1-weighted
T2	T2-weighted
GMN	Gradient moment nulling
TE	Echo time
TR	Repetition time
CSF	Cerebro-spinal fluid
CM	Contrast media
ECG	Electro cardio gram
PD	proton density
AVM	Arterio venous malformation

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## Appendix (A)

## Data master Sheet

NO	AGE	GENDER	MRI Findings	X ray Findings
1	63	m	1	7
2	60	m	3	3
3	69	f	5	5
4	47	m	1	6
5	57	m	4	4
6	46	f	1	6
7	55	m	3	3
8	57	m	1	7
9	36	f	2	6
10	60	m	4	4
11	20	f	6	6
12	58	m	1	7
13	38	m	2	6
14	61	f	5	6
15	39	m	1	7
16	53	f	4	6
17	60	m	1	7
18	70	f	5	5
19	30	m	2	6
20	67	m	5	5
21	39	f	1	7
22	48	m	3	3
23	63	f	4	4
24	37	m	1	7
25	29	f	2	6
26	37	m	1	6
27	66	m	5	5
28	36	f	1	6
29	65	f	3	3
30	71	m	5	5
31	55	f	1	7
32	45	m	4	6
33	60	f	1	7
34	49	f	3	3
35	64	m	5	5

36	59	f	1	7
37	60	m	4	4
38	18	f	6	6
39	69	m	5	5
40	60	f	1	7
41	47	m	1	7
42	65	f	5	5
43	56	m	1	7
44	39	m	5	6
45	31	f	2	6
46	48	m	1	7
47	58	f	3	3
48	35	m	4	4
49	59	m	1	7
50	20	f	6	6

**(1)Disc herniation**

**(2)Disc bulge**

**(3)Disc prolapsed**

**(4) Spondylosis**

**(5)Degeneration**

**(6)Normal**

**(7)Narrow disc space**

