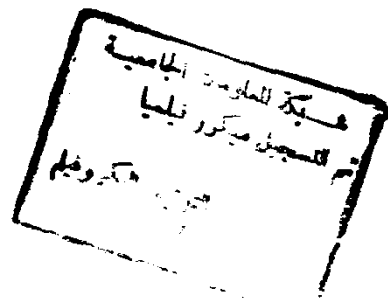
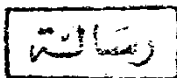


(INCIDENCE OF SPINAL STENOSIS  
IN PATIENTS WITH LUMBAR DISC DISEASE  
AND  
EVALUATION OF SURGERY)

THESIS

SUBMITTED FOR PARTIAL FULFILLMENT OF  
THE MASTER DEGREE IN GENERAL SURGERY



BY  
TAREK YEHIA HOWEIDY  
M.B, BCh

617. 482  
T.Y

49368

SUPERVISED BY:-

\*PROF., DR. \ SAMIR EL MOLLA  
PROFESSEUR OF NEUROSURGERY  
FACULTY OF MEDICINE  
AIN SHAMS UNIVERCITY

\*DR. \ HOSSAM EL HOSSEINY  
LECTURER OF NEUROSURGERY  
FACULTY OF MIDICINE  
AIN SHAMS UNIVERCITY

1991



NO WORDS CAN EXPRESS MY DEEP GRATITUDE TO DR. HOSSAM EL HOSEINY,  
LECTURER OF NEUROSURGERY, AIN SHAMS UNIVERSITY, FOR HIS  
METICULOUS SUPERVISION, HIS FRUITFUL HELP AND REMARKS MADE THIS  
WORK A REALITY.

I AM IN DEBT TO PROF DR. ADEL EL HAKIM, ASSISTANT PROFESSOR OF  
NEUROSURGERY, AIN SHAMS UNIVERSITY, FOR THE FACILITIES HE OFFERED  
TO ME DURING THE PREPARATION OF THIS WORK

I AM HONORED TO EXPRESS THE DEEPEST GRATEFULNESS AND SINCERE  
THANKS TO PROF. DR. SAMIR EL MOLLA, PROFESSOR OF NEUROSURGERY,  
AIN SHAMS UNIVERSITY, FOR HIS PATIENT GUIDANCE, PRECIOUS ADVISES,  
AS WELL AS FOR HIS GENEROUS SUPPORT DURING THE PREPARATION OF  
THIS WORK.

=====  
**ACKNOWLEDGEMENT**



## INTRODUCTION AND AIM OF THE WORK



AS A BASIC PRINCIPLE, PERFORMING THE MINIMAL AMOUNT OF SURGERY THAT CAN ADEQUATELY RELIEVE THE SYMPTOMS IS PREFERRED RATHER THAN

VARIETY OF CLINICAL PROBLEMS (WILLIAMS, 1985)  
 APPROACH MIGHT BE NECESSARY TO RESOLVE SUCCESSFULLY SUCH A  
 SEEMS REASONABLE TO ASSUME THAT MORE THAN ONE TYPE OF OPERATIVE  
 COMPRESSION MAY BE QUITE DISSIMILAR IN THESE DISEASE PROCESSES, IT  
 STENOSES, AND COMBINATIONS OF BOTH, BECAUSE THE MECHANISMS OF ROOT  
 SOFT INTERVERTEBRAL DISC HERNIATIONS, ANY VARIETY OF SPINAL  
 ASSOCIATED WITH SURGICALLY UNDISTURBED LUMBAR ANATOMY INCLUDE  
 FAR MORE COMPLICATED AND FAR LESS REWARDING. COMMON CONDITIONS  
 SCIATICA AND ITS SUCCESSFUL RESOLUTION BY SURGICAL MEANS BECOME  
 ONCE TISSUE PLANES HAVE BEEN DISTURBED BY OPERATION, CAUSES OF

1980).

COMPRESSION SECONDARY TO DEGENERATIVE CHANGES (HERRON, ET AL.,  
 BY THE DEVELOPMENT AND/OR THE AGGRAVATION OF FURTHER OSSEOUS  
 FORAMINA. IN ADDITION, SIMPLE DISCECTOMY MAY BE FOLLOWED  
 SPINAL CANAL, AT THE LATERAL RECESSES, AND/OR THE NEURAL  
 THERE IS FREQUENTLY AN ASSOCIATED OSSEOUS COMPROMISE OF THE

DISEASE" (WINSTON, ET AL., 1981).  
 HETEROGENEOUS, THOUGH RELATED, GROUP OF DISORDERS "LUMBAR DISC  
 VIEW IS HELD IS EVIDENT FROM THE LABEL MOST OFTEN USED FOR THE  
 SPINAL CANAL AS ONLY THE SETTING, THE STRENGTH WITH WHICH THIS  
 RADICULOPATHY AS THE ONLY, OR AT LEAST THE CHIEF, VILLAIN AND THE  
 THE INTERVERTEBRAL DISC IS TOO OFTEN PERCEIVED IN LUMBAR

SUFFERING AND DISABILITY COSTS (WISSEL, ET AL., 1982).  
 ECONOMIC PROBLEM HAVING CONSIDERABLE IMPACTS IN TERMS OF BOTH  
 LUMBAR DISC DISEASE HAD BEEN RECOGNIZED AS A MAJOR HEALTH AND

# ===== INTRODUCTION

THIS WORK AIMS AS WELL TO DETECT THE SURGICAL OUTCOME OF THE LIMITED APPROACH (FENESTRATION), AND THE EXTENSIVE APPROACH (LAMINECTOMY) IN SURGICALLY TREATING PATIENTS WITH LUMBAR DISC DISEASE. SEVENTY PATIENTS OF THIS SERIES OF MANUAL INDUSTRIAL WORKERS WERE TRACED RETROSPECTIVELY.

THE AIM OF THIS WORK IS TO STUDY THE INCIDENCE OF SPINAL STENOSIS AMONG A RANDOMLY SELECTED SERIES OF MIDDLE AGED EGYPTIAN MALE PATIENTS WITH LUMBAR DISC DISEASE. CT SCANS OF ONE HUNDRED PATIENTS WERE REVIEWED.

#### AIM OF WORK

COMPUTED TOMOGRAPHY OF THE SPINE IS THE MOST DEFINITIVE METHOD IN THE DIAGNOSIS OF SPINAL STENOSIS (VERBIST, 1980)

CT SCAN IS ESPECIALLY VALUABLE IN A Laterally PLACED DISC Herniation, AND L3-4 LEVEL WHERE THE NERVE ROOTS DO NOT SEEM TO FILL WELL WITH WATER SOLUBLE MYELOGRAPHY (SIMONE, 1985)

(CARRERA, ET AL.(1980), WILLIAMS, ET AL.(1982), SCHIPPER, ET AL.(1987), AND ABDEL-HAY, ET AL.(1990)

COMPUTED TOMOGRAPHY IS RECOMMENDED TO BE USED AS THE PRIMARY PROCEDURE IN CASE OF SUSPECTED LUMBAR DISC DISEASE. IF THE RESULTS OF OF PLAIN CT ARE SUSPICIOUS, EQUIVOCAL, OR THERE IS MARKED CONTROVERSY WITH THE CLINICAL PICTURE, THEN WATER SOLUBLE MYELOGRAM SHOULD BE PERFORMED

ATTEMPTING PROPHYLACTIC SURGERY OF SYMPTOMS THAT HAVE NOT YET DEVELOPED (FINNESON, 1988)

#### INTRODUCTION

\*--ARABIC SUMMARY

\*--CONCLUSION

\*--DISCUSSION

\*--RESULTS

\*--MATERIAL AND METHODS

\*--SURGICAL TREATMENT

\*--DIAGNOSTIC STUDIES

\*--CLINICAL FEATURES

\*--PATHOPHYSIOLOGY

\*--ANATOMY AND BIOMECHANICS

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Spinal curves

Fig. (1)



FOR OCCURRENCE OF LOW-BACK PAIN. (HANSSON, ET AL, 1983))  
THE DISTRIBUTION AND RANGE OF LUMBAR LORDOSIS IS OF IMPORTANCE  
DISCS.

THE LUMBAR LORDOSIS IS CAUSED PARTLY BY THE WEDGE-SHAPE OF THE  
VERTEBRAL BODIES AND PARTLY BY THE WEDGE-SHAPE OF THE LUMBAR

WALK. (PARKER, 1982)

APPEARS AROUND THE AGE OF 12 MONTHS WHEN THE INFANT BEGINS TO  
THE LUMBAR CURVE DISPLAYING A POSTERIOR CONCAVITY (LORDOSIS)  
INFANT IS ABLE TO HOLD UP HIS HEAD.  
CURVES AND BECOMES WELL FORMED AT THE AGE OF 4 MONTHS WHEN THE  
CONVEX ANTERIORLY. THE CERVICAL CURVE IS THE LEAST MARKED OF ALL  
THE CERVICAL AND LUMBAR CURVES ARE SECONDARY CURVES AND ARE  
PRIMARY CURVES AS THEY ARE PRESENT DURING FOETAL LIFE.

THE THORACIC AND PELVIC CURVES ARE CONCAVE ANTERIORLY AND TERMED  
OCCURS [ Fig.1 ] .

IDENTIFIED BY THE PREDOMINANT COLUMN REGION IN WHICH THE CURVE  
A LATERAL VIEW OF THE VERTEBRAL COLUMN REVEALS SEVERAL CURVES  
CERVICAL VERTEBRAE.  
INTERVERTEBRAL DISCS WITH THE EXCEPTION OF THE FIRST AND SECOND  
THE BODIES OF THE TRUE VERTEBRAE ARE SEPARATED FROM EACH OTHER BY  
"PSEUDO" VERTEBRAE.  
OTHER TO FORM TWO BONES. THE SACRUM AND COCCYX CAN BE CONSIDERED  
THE ADULT SACRAL AND COCCYGEAL VERTEBRAE ARE FUSED WITH EACH  
CERVICAL, 12 THORACIC, 5 LUMBAR, 5 SACRAL AND 4 COCCYGEAL.  
THE VERTEBRAL COLUMN TYPICALLY CONSISTS OF (33) VERTEBRAE : 7

SPINAL CURVES:-

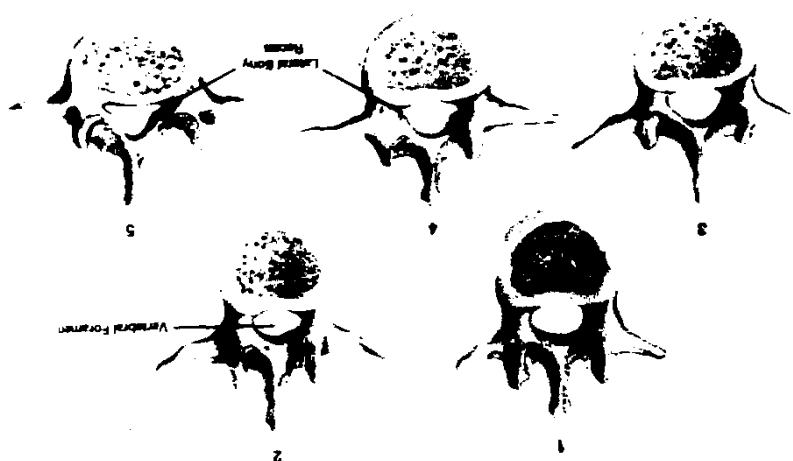
## ANATOMY OF THE LOW BACK

ANATOMY

The lumbar vertebrae

Note the lateral recess of L4 and L5

Fig. (2)



THE SPINOUS PROCESS .  
DIRECTING THE NEEDLE HORIZONTALLY PARALLEL TO THE GREATER AXIS OF  
OF ACCESS TO THE VERTEBRAL CANAL DURING SPINAL PUNCTURE BY  
THE INTERSPINOUS AND INTERLAMINAR SPACES CAN BE USED AS THE ROUTE  
ON EXTENSION OR HYPERLORDOSIS.

THE INTERSPINOUS SPACES OPEN ON LUMBAR FLEXION AND BECOME VIRTUAL  
REGION WITH A BASE ON THE VERTEBRAL ARCH AND A THICK FREE TIP.  
THE CREST OF SPINOUS PROCESSES DISPLAY A NARROW (3-4mm) MIDDLE  
(8-15mm) ON FLEXION OR KYPHOSIS AND SMALLEST ON EXTENSION.  
WHICH ARE NORMALLY OCCUPIED BY THE LIGAMENTA FLAVA ARE LARGEST  
8mm, THUS ALLOWING HEMI-LAMINECTOMY. THE INTERLAMINAR SPACES,  
VERTEBRAL FORAMEN. THE TRANSVERSE WIDTH OF THE LAMINAE IS ABOUT  
OF CENTRUM AND WITH THEIR LAMINAE THEY ENCLOSE A TRIANGULAR  
THE THICK PEDICLES ARE WIDELY PLACED ON THE DORSOLATERAL ASPECT

STOUT. ( PARKER, 1982 )  
ALL STRUCTURES ASSOCIATED WITH THE VERTEBRAL ARCH ARE BLUNT AND

VERTEBRAL BODIES. (LOUIS, 1983)  
THE INTERVERTEBRAL SPACES ARE ABOUT ONE THIRD THE HEIGHT OF THE  
WHEREAS L5 IS 28mm BY 50mm .  
THE MEAN DIAMETERS OF L1 ARE OF 25mm HEIGHT AND 40mm WIDTH,  
IDENTIFY BY SIGHT AND ESPECIALLY ON PALPATION.

THE INTERVERTEBRAL SPACES CONTAINING THE DISCS ARE EASY TO  
DIAMETER INCREASES AT THE SUPERIOR AND INFERIOR SURFACES. THUS  
CIRCULARLY AND HORIZONTALLY DEPRESSSED IN THEIR CENTER AND THEIR  
VERTEBRAL BODIES OF L1 TO L4 AND THE TRAPEZOID BODY OF L5 ARE  
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DENOTED FROM L1 TO L5, HAVE LARGER DIMENSIONS AND ARE EASILY

-----  
THE LUMBAR VERTEBRAE I Fig. 2 J:-

-----  
ANATOMY

THE SACRUM IS DISTINGUISHED FROM THE LUMBAR COLUMN BY THE ABSENCE OF INTERLAMINAR SPACES AND ZYGAPOPHYSIAL ARTICULATIONS, BY ITS OBLIQUE SLANT POSTERIORLY, AND BY ITS DOME SHAPE. THE ANGULAR

SACRUM AND COCCYX: -

(LOUIS, 1983).  
OF A TEMPORARY PERIOD OF POSTOPERATIVE MUSCLE FRAGILITY  
MUSCLES MUST RECONSTITUTE THEIR NORMAL INSERTIONS, AT THE PRICE  
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PROCESSES FOR THE ORIGINS AND INSERTIONS OF THE THICK LOWER  
POSTERIOR ARTICULAR INTERFACES LIE THE PRONOUNCED MAMILLARY  
LATERAL MARGIN OF THE ISTHMIC REGIONS. JUST LATERAL TO THE  
DISINTEGRATION OF THE MUSCLES BY AVOIDING WORK EXTENDING BEYOND THE  
THE NEUROVASCULAR BUNDLES. THIS ZONE MUST BE RESPECTED DURING  
CORRESPONDS TO THE ISTHMIC REGION AND THE REGION OF PASSAGE OF  
THE DEPRESSED AREA BETWEEN THE ZYGAPOPHYSIAL ARTICULATION

LUMBAR REGION (PARKER, 1982).  
THIS ARRANGEMENT RESTRICTS BOTH ROTATION AND FLEXION IN THE  
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EXTENDING 10mm LATERAL TO THE POSTERIOR PILARS. THE TRANSVERSE  
THE SUCCESSIVE TRANSVERSE PROCESSES FROM A STEP-LIKE BONY PLANE

- 1\* INTERVERTEBRAL DISCS.
- 2\* ANTERIOR LONGITUDINAL LIGAMENT.
- 3\* POSTERIOR LONGITUDINAL LIGAMENT.
- 4\* LATERAL VERTEBRAL LIGAMENT.

VERTEBRAL BODY ARTICULATION.  
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ONLY VERY LIMITED MOVEMENTS, BUT SUMMATION OF THIS SLIGHT DEGREE  
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#### ----- VERTEBRAL BODY ARTICULATIONS:-

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#### ----- LUMBOSACRAL ARTICULATIONS:-

COCCYGEAL NERVE (LOUIS, 1983).  
SACRAL CORNUA FORMING A FORAMEN THROUGH WHICH EMERGES THE FIRST  
THE COCCYX IS USUALLY A SOLID BONE FORMED BY THE FUSION OF FOUR  
FORAMINA.  
SACRAL FORAMINA AND THE DORSAL RAMI THROUGH THE POSTERIOR SACRAL  
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AND THE INCLINATION OF THE SACRAL PLATE. THE DEGREE TO WHICH THE  
LUMBOSACRAL JUNCTION IS FORMED BY THE BODY OF L5, THE L5-S<sub>1</sub> DISC,

Structure of the vertebral disc  
Fig.(3)

