Radiological And Imaging Manifestations of Inflammation Of The Spine

ESSAY

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For The Master Degree In Radiodiagnosis

رسالة

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Dedication

To my family

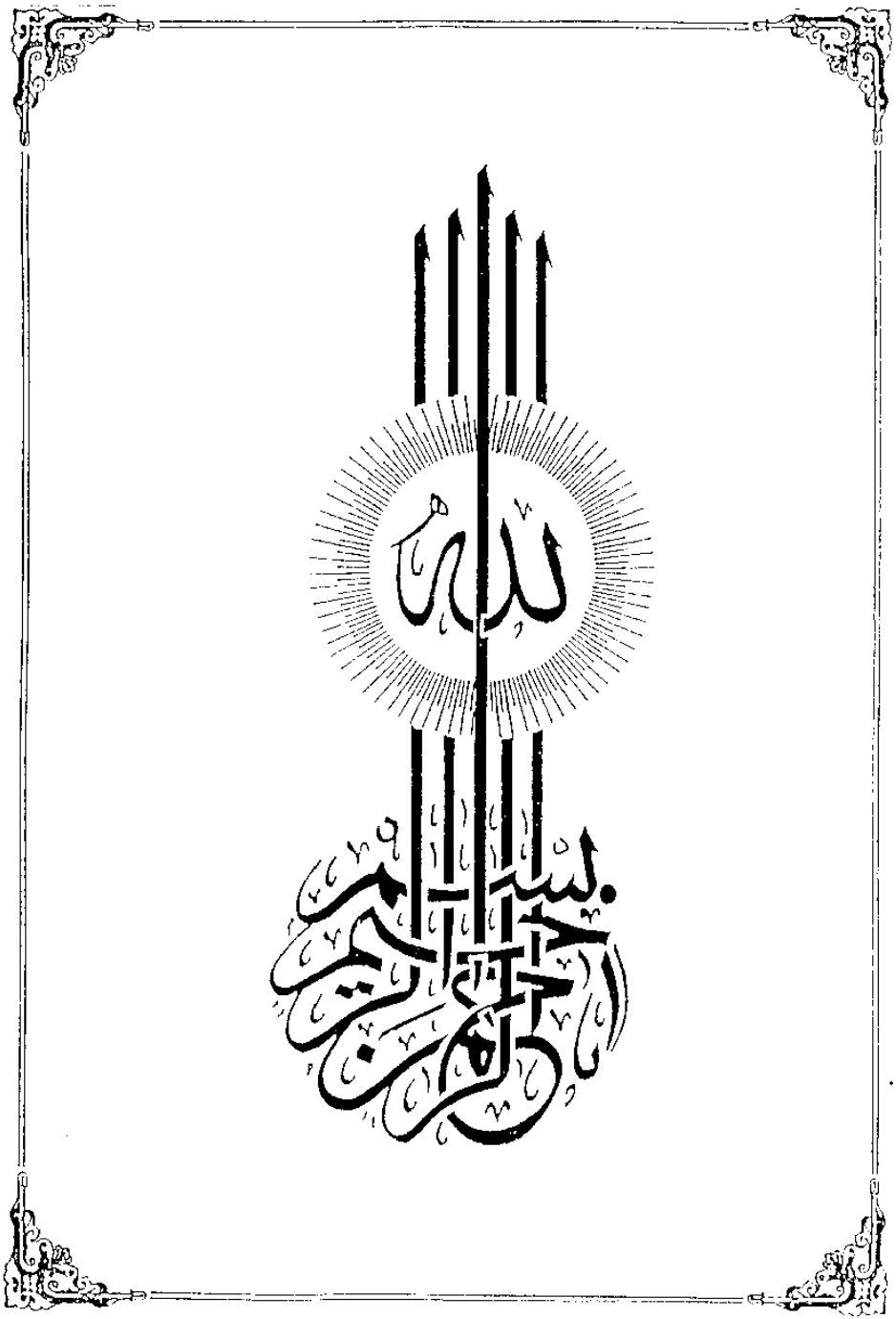
No words can express the warmth

of my feelings for their

understanding and patience

To my fiancée

for her great support.



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List of Abbreviations

CSF	=	Cerebrospinal fluid.
CT	=	Computed tomography
DTPA	=	Diethylene triamine penta acetic acid
GD	=	Gadolinium
GRE	=	Gradient repitation echo.
H. us.	=	Houns field unit
I	=	Iodine
I.V.	=	Intravenous
MR	=	Magnetic resonance.
SNR	=	Signal to noise ratio.
TE	=	the time to echo in the spin echo sequence.
TR	=	Repitation time .
WI	=	Weighted Image

Introduction and Aim of the Work

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Inflammatory process means local reaction of living tissues against an irritant by means of which the defensive mechanisms come outside the blood vessels to attack the irritant provided that the irritant is not severe enough to kill the tissues. The inflammatory processes of the spine include disc space infection, osteomyelitis T.B., epidural abscess and arachnoiditis.

A range of imaging modalities is available for the diagnosis and evaluation of spine related infections as plain radiographs, computed tomography C.T., Myelography, scintigraphic techniques and magnetic resonance imaging M.R.I.

The Aim Of The Work is to discuss different methods of examination, their advantages, disadvantages and to determine the most diagnostic method for each type of infection.

Anatomical Considerations

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Gross anatomy of the spine :

Vertebral Characteristics :

A typical vertebra, (Fig. 1,a) is composed of two main portions, namely, a body which is the ventral portion and an arch which is the dorsal portion.

The arch consists of two pedicles and two laminae, the space enclosed by the body and the arch is the vertebral canal. The arch supports : four articular processes, two transverse processes and one spinous process.

The following table shows the difference between typical cervical, thoracic and lumbar vertebrae : (Fig. 1).

	Cervical	Thoracic	Lumbar
- Body	Relatively small	Larger than cervical	Largest
- Pedicles	Diverge laterally and backward	don't diverge	Short
- Laminae	Long and narrow	Flat slopes down	Short Strong
- Articular process	flat	Stand vertically and frontally	Their surfaces lie in sagittal plane
- Transverse processes	Trabeculate, perforate and short	faceted, long, thick and backward directed	long, selender and horizontal.
- Spinous process	Short and bifid	elongated and sloping	Thick, broad and horizontal