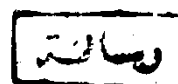


# **Radiological And Imaging Manifestations of Inflammation Of The Spine**

ESSAY

Submitted in Partial Fulfillment

For The Master Degree In Radiodiagnosis



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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.*



## **Acknowledgment**

Impressed with the motherly encouragement of *Prof. Dr. Nawal Zakaria*, Professor of Radiodiagnosis, Ain Shams University, I wish to thank her for her time, interest and commitment. I am also grateful to her for her insightful supervision and valuable comments which helped me to complete this work in its present form.

Special thanks are also due to *Dr. Maher Arafa*, lecturer of radiodiagnosis, Ain Shams University who gave me generously of his time and provided detailed criticism to which I tried to respond and which helped me to clarify many hazy areas.

Many thanks to all staff members and residents in the department of radiodiagnosis, Ain Shams University.

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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**

## **Introduction and Aim of the Work**

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**



## Anatomical Considerations

### 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).

	<b>Cervical</b>	<b>Thoracic</b>	<b>Lumbar</b>
- 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

