



GHADIALI

General Surgery

P R E S E N T S

Dr. Mufa T. Ghadiali is skilled in all aspects of General Surgery.
His General Surgery Services include:

- General Surgery
- Advanced Laparoscopic Surgery
- Surgical Oncology
- Gastrointestinal Surgery
- Hernia Surgery
- Endoscopy

ANATOMY OF THE SPINE

Multimedia Health Education

Disclaimer

This movie is an educational resource only and should not be used to make a decision on spinal conditions. The information in this presentation has been developed to help consumers understand the structure and function of anatomical components and take charge of Orthopedic health. All decisions about spinal conditions must be made in conjunction with your surgeon or a licensed healthcare provider.

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MULTIMEDIA HEALTH EDUCATION MANUAL

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INTRODUCTION

The spine also called the back bone is designed to give us stability, smooth movement as well as providing a corridor of protection for the delicate spinal cord. It is made up of bony segments called vertebra and fibrous tissue called intervertebral discs. The vertebra and discs form a column from your head to the pelvis giving symmetry and support to the body.

The Spine

The spine can be divided into 4 parts. The uppermost is the cervical region, consisting of 7 small vertebrae that form the neck. As we move down the body, the next 12 vertebrae make up the thoracic region or mid back from which the ribs are hinged.

The 5 lumbar vertebrae are the largest of the mobile vertebrae and supports 2/3 of the body's weight. The lowest region of the spine is the sacrum and coccyx. The sacrum is a triangular plate made up of five fused vertebral segments while the four coccyxes terminate the bony spine.

(Refer fig. 1)

- Cervical (C1 through C7)
- Thoracic (T1 through T12)
- Lumbar (L1 through L5)
- Sacral (S1 through S5)
- Coccygeal or coccyx (Tailbone)

Cervical (C1 through C7)

(Refer fig. 2)



(Fig.1)



(Fig.2)

Unit 1:

SPINE

Thoracic (T1 through T12)

(Refer fig. 3)



(Fig.3)

Lumbar (L1 through L5)

(Refer fig. 4)



(Fig.4)

Sacral (S1 through S5)

(Refer fig. 5)



(Fig.5)

Coccygeal or coccyx (Tailbone)

(Refer fig. 6)



(Fig.6)

Vertebra

A single vertebra is made up of two parts, the front portion is called the body, cylindrical in shape, it is strong and stable. The back portion of the vertebra is referred to as the vertebral or neural arch and is made up of many parts. The strong 2 pedicles join the vertebral arch to the front body.

(Refer fig. 7)

- Vertebrae
- Slight notch
- Pedicle
- Deep notch
- Intervertebral Foramina
- Spinal Cord

The laminae forms the arch itself while the transverse process spread out from the side of the pedicles like wings to help anchor the vertebral arch to surrounding muscle.

The spinous process forms a steeple at the apex of the laminae, and is the part of our spine that is felt directly under the skin.

Laminae

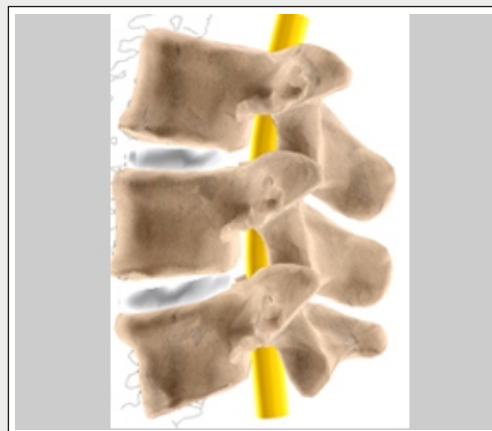
The laminae of the vertebra can be described as a pair of flat arched bones that form a component of the vertebral arch.

Spinal canal

This canal is formed by the placement of single vertebral foramina one on top of the other to form a canal. The purpose of the canal is to create a bony casing from the head to the lower back through which the spinal cord passes.

Pars inter articularis

Known as the Pars, it is the part of the vertebral arch where the pedicle, transverse process and articular process transect.



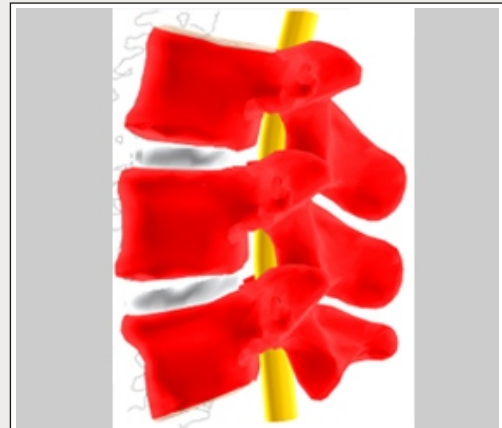
(Fig.7)

Unit 2:

Vertebra

Vertebrae

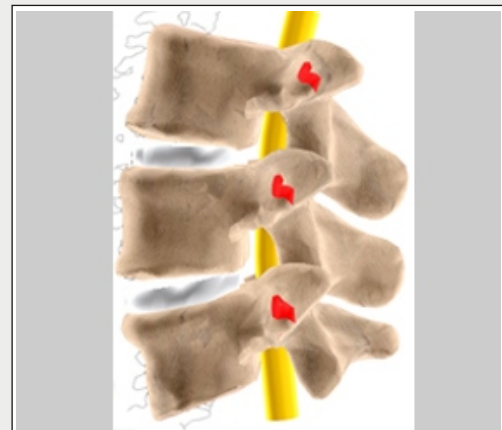
(Refer fig. 8)



(Fig.8)

Slight notch

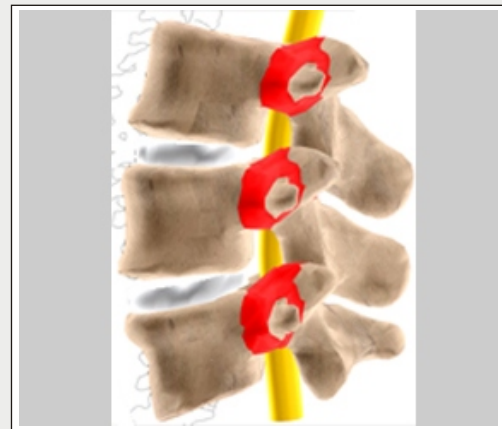
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(Fig.9)

Pedicle

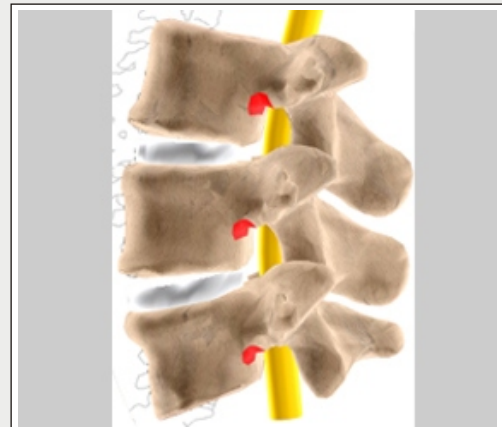
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(Fig.10)

Deep notch

(Refer fig. 11)



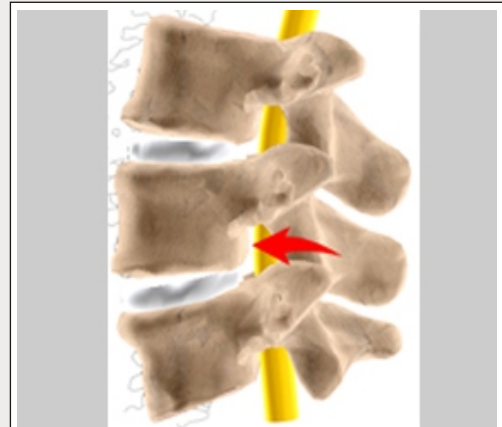
(Fig.11)

Intervertebral Foramina

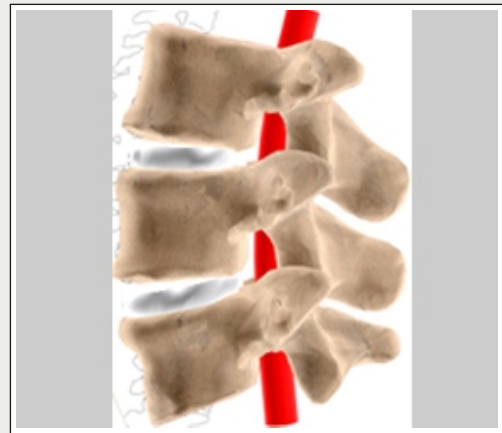
(Refer fig. 12)

Spinal Cord

(Refer fig. 13)



(Fig.12)



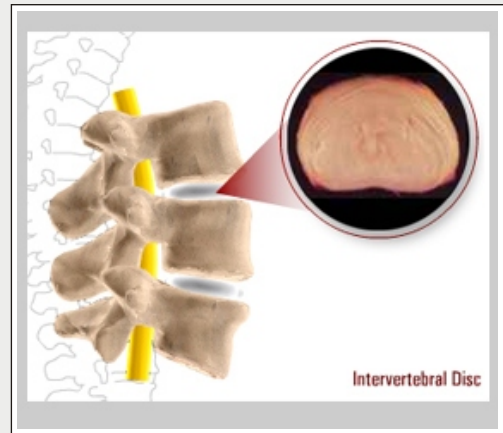
(Fig.13)

Fibrous Tissue

Intervertebral Disc

The intervertebral disc sits between the weight bearing vertebral bodies, servicing the spine as shock absorbers. The disc has fibrous outer rings called the annulus fibrosus with a watery jelly filled nucleus called the Nucleus Pulposus.

(Refer fig. 14)



(Fig.14)

Spinal Cord

The spinal cord is the means by which the nervous system communicates the electrical signals between the brain and the body. It begins at the brain stem and is held within the spinal canal until it reaches the beginning of the lumbar vertebra.

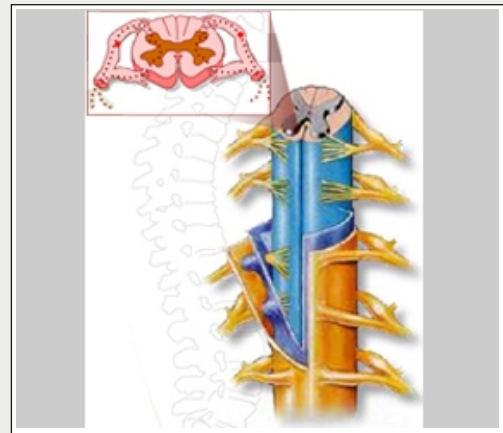
At L1 the spinal cord resolves down to a grouping of nerves that supply the lower body.

(Refer fig. 15)

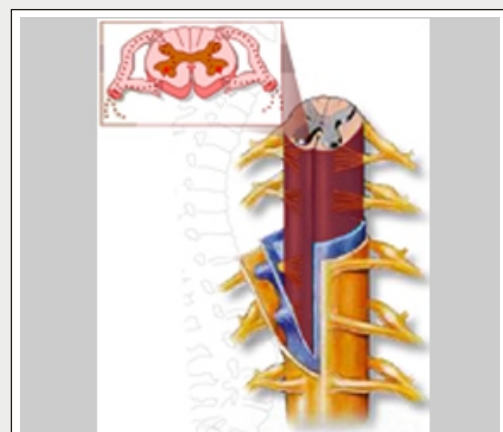
- Spinal Meninges
- Pia mater (inner)
- Arachnoid (Middle)
- Dura mater (outer)
- Spinal cord
- Spinal nerve
- Denticulate ligament
- Subarachnoid space
- Subdural space

Pia mater (inner)

(Refer fig. 16)



(Fig.15)



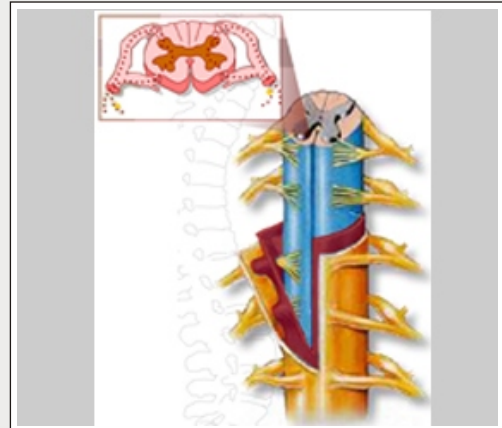
(Fig.16)

Unit 4:

Spinal Cord

Arachnoid (Middle)

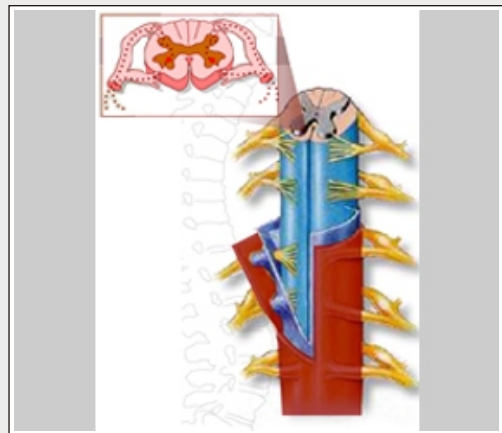
(Refer fig. 17)



(Fig.17)

Dura mater (outer)

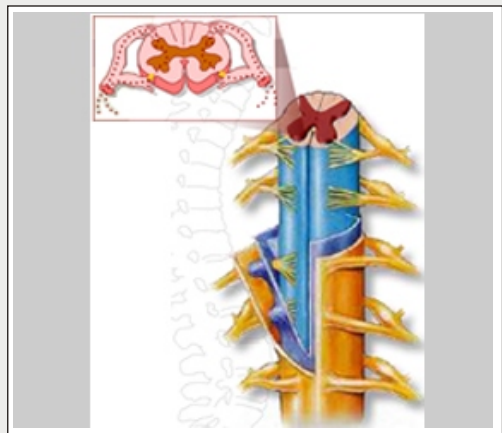
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(Fig.18)

Spinal cord

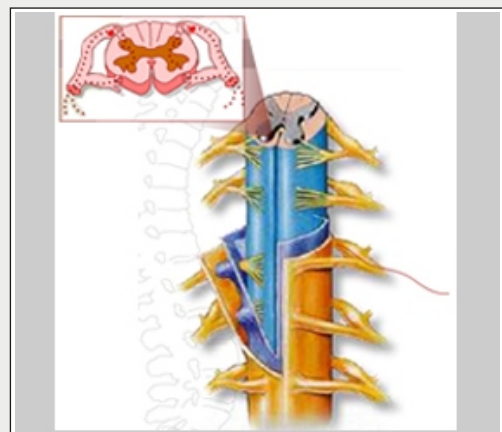
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(Fig.19)

Spinal nerve

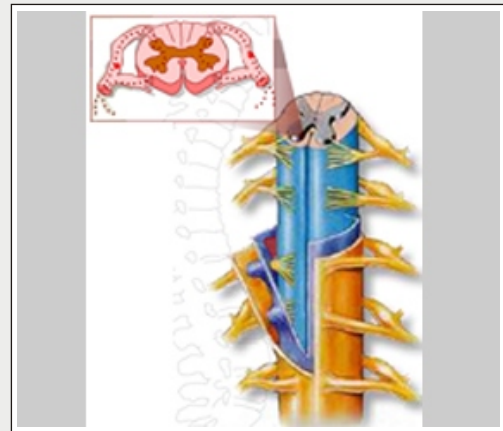
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(Fig.20)

Denticulate ligament

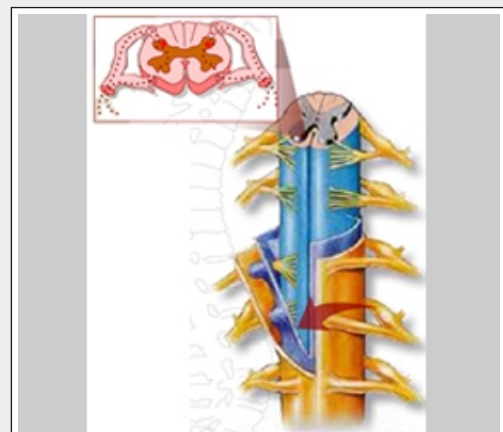
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(Fig.21)

Subarachnoid space

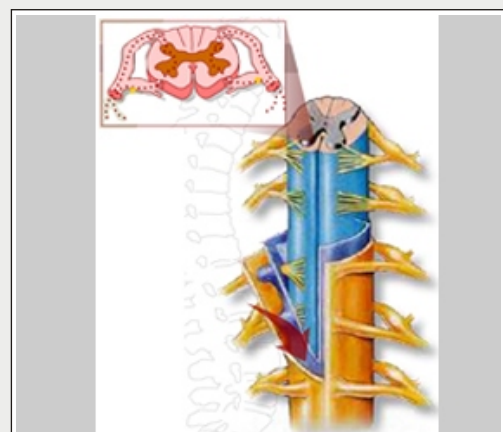
(Refer fig. 22)



(Fig.22)

Subdural space

(Refer fig. 23)



(Fig.23)

Facet Joint

Facet joints are the paired articular processes of the vertebral arch. These synovial joints give the spine its flexibility by sliding on the articular processes of the vertebra below.

(Refer fig. 24)

- Superior Articular Facet
- Transverse process
- Interlocking facets
- Interarticular facet
- Intervertebral discs
- Spinous Process

Superior Articular Facet

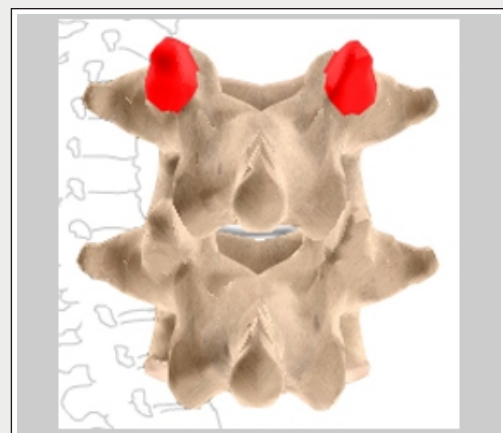
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Transverse process

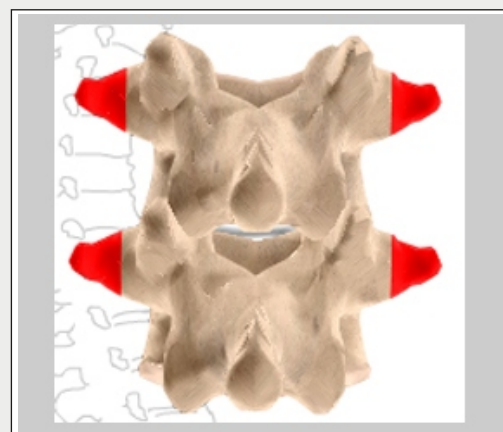
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(Fig.24)



(Fig.25)



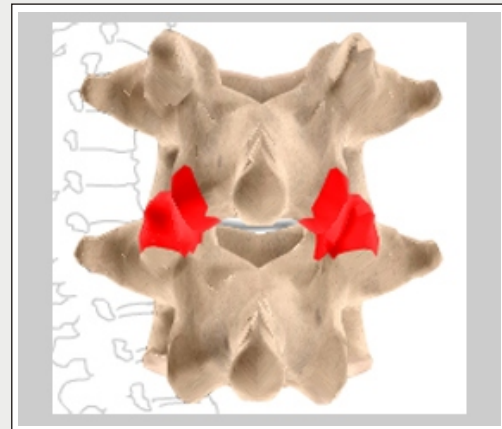
(Fig.26)

Unit 5:

Facet Joint

Interlocking facets

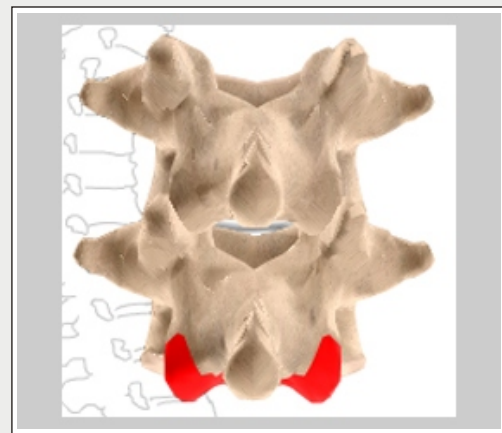
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(Fig.27)

Interarticular facet

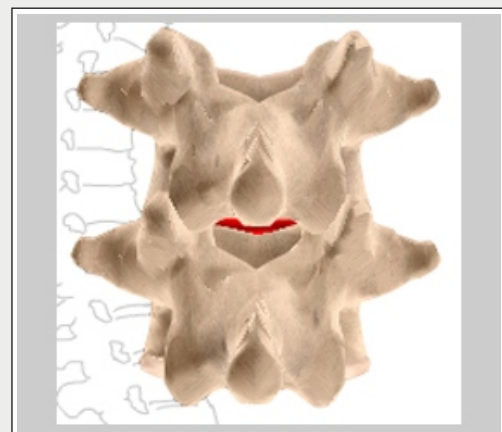
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(Fig.28)

Intervertebral discs

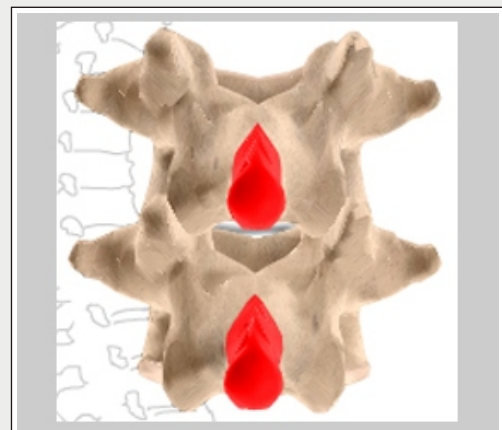
(Refer fig. 29)



(Fig.29)

Spinous Process

(Refer fig. 30)



(Fig.30)

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YOUR SURGERY DATE

READ YOUR BOOK AND MATERIAL

VIEW YOUR VIDEO /CD / DVD / WEBSITE

PRE - HABILITATION

ARRANGE FOR BLOOD

MEDICAL CHECK UP

ADVANCE MEDICAL DIRECTIVE

PRE - ADMISSION TESTING

FAMILY SUPPORT REVIEW

Physician's Name : _____

Patient's Name : _____

Physician's Signature: _____

Patient's Signature: _____

Date : _____

Date : _____