



**SNS COLLEGE OF ALLIED HEALTH SCIENCES
SNS KALVI NAGAR, COIMBATORE-35
AFFILIATED TO Dr MGR UNIVERSITY, CHENNAI**

**DEPARTMENT OF OPERATION THEATRE AND ANAESTHESIA
TECHNOLOGY**

3rd YEAR

PAPER 2: PRINCIPLES OF ANAESTHESIA -2

TOPIC: SPINAL ANAESTHESIA



HISTORY:

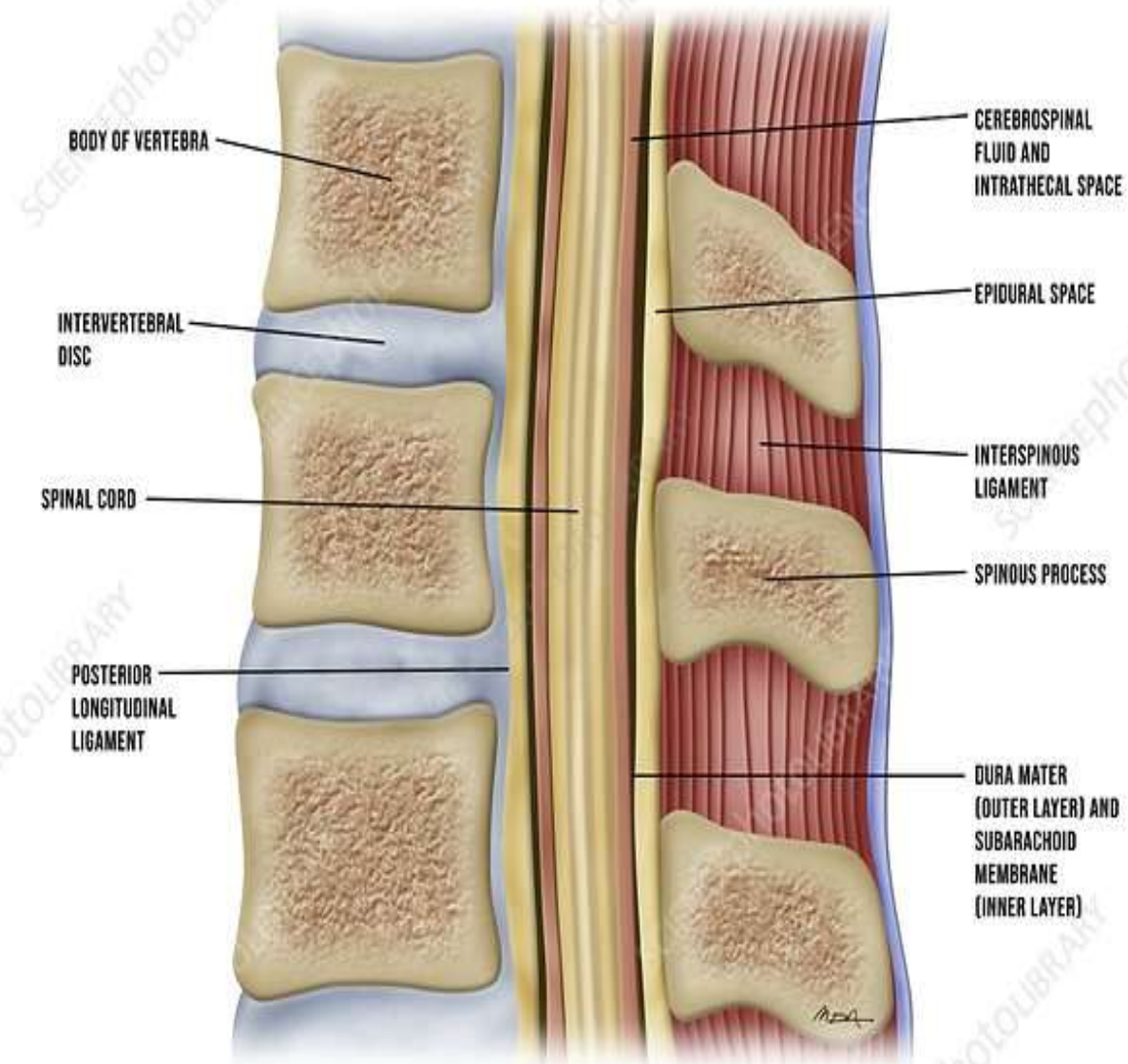
- CSF discovered - DOMENICO CATUGNO 1764
- CSF circulation - F MAGENDIE 1825
- First spinal analgesia - J LEONARD CATUNGO 1885
- First planned spinal analgesia - (AUGUST BIER 16th august 1898)



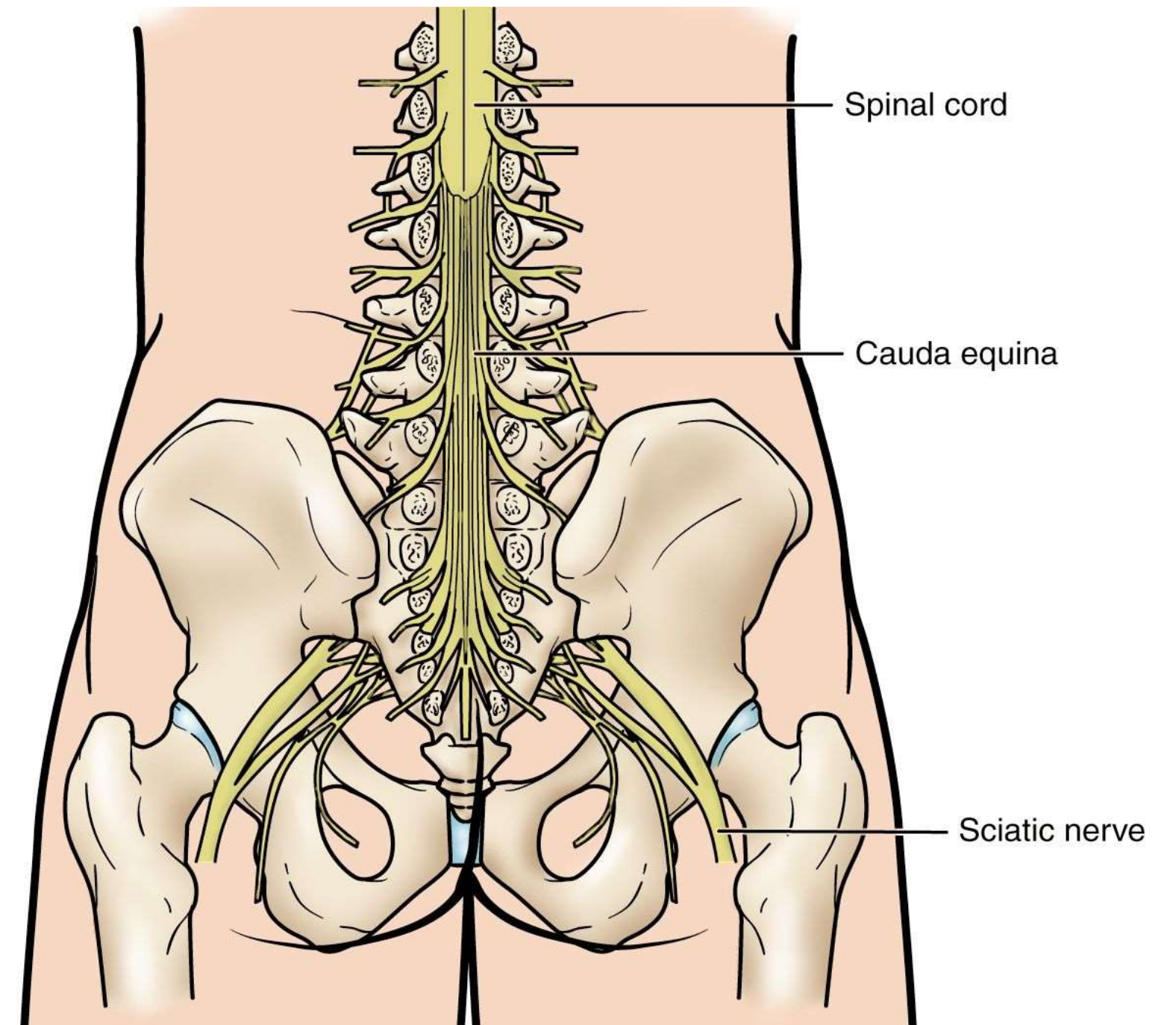
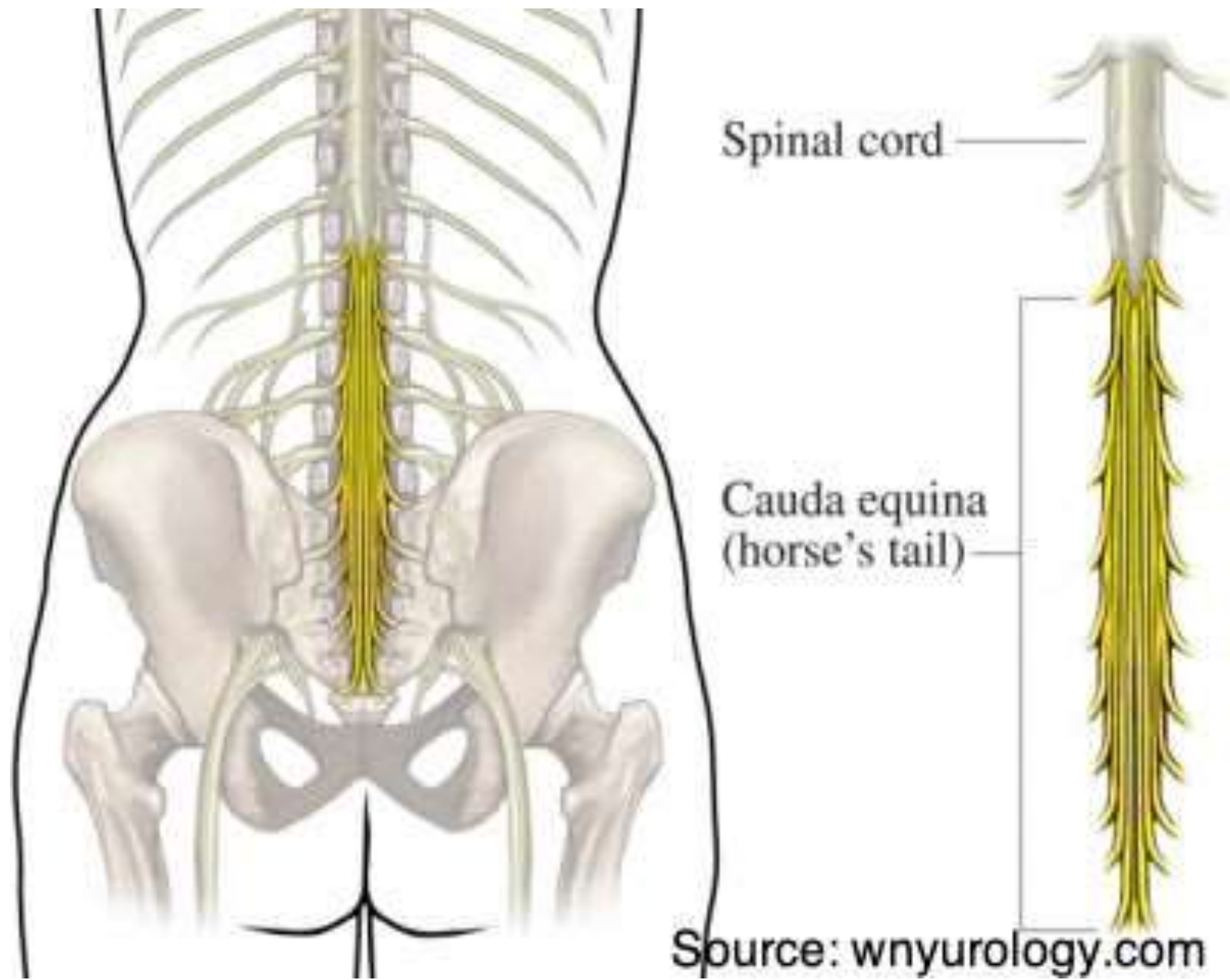
ANATOMY:



- SKIN
- SUBCUTANEOUS TISSUE
- SUPRASPINOUS LIGAMENT
- INTERSPINOUS LIGAMENT
- LIGAMENTUM FLAVUM
- EPIDURAL SPACE
- DURA MATTER
- ARACHNOID MATTER
- PIA MATTER



WHERE SPINAL CORD ENDS?





INDICATIONS:

- SURGERIES OF LOWER LIMBS, PERINEUM, PELVICS, ABDOMEN
- IT IS DEAL IN
 1. RENAL FAILURE- ONSET IS RAPID
 2. CARDIAC DISEASE
 3. LIVER DISEASE
 4. OBSTETRIC ANAESTHESIA



ADVANTAGES:

- AVOID HAZARDS OF GENERAL ANAESTHESIA
- PATIENT IS ALERT EARLIER POSTOPERATIVE
- LOWER INCIDENCE OF NAUSEA/VOMITING
- BETTER PAIN CONTROL/LESS NARCOTICS
- DECREASED RISK OF ASPIRATION



DISADVANTAGES:

- DIFFICULT NEEDLE PLACEMENT
- HYPOTENSION
- POST DURAL PUNCTURE HEADACHE
- INFECTION
- FAILED SPINAL
- URINARY RETENTION



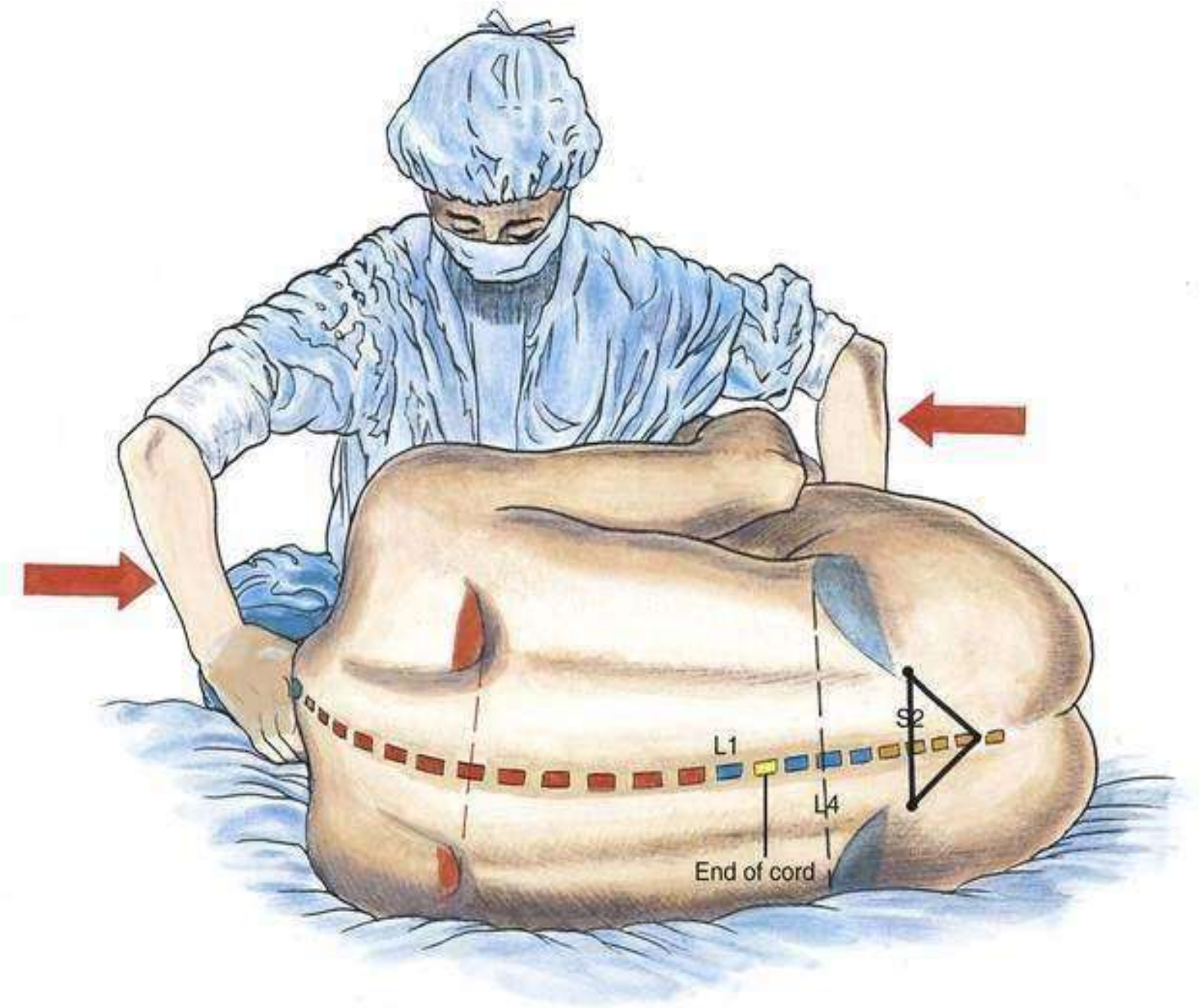
PROCEDURE:

- PREPARATION OF THE PATIENT
- PRE MEDICATION
 - SEDATIVES
 - TO DECREASE ACID SECRETIONS-H2
BLOCKERS,PROTON PUMP INHIBITORS
- MONITOR
- INTRAVENOUS LINE-PRELOADING WITH FLUIDS

POSITIONS:

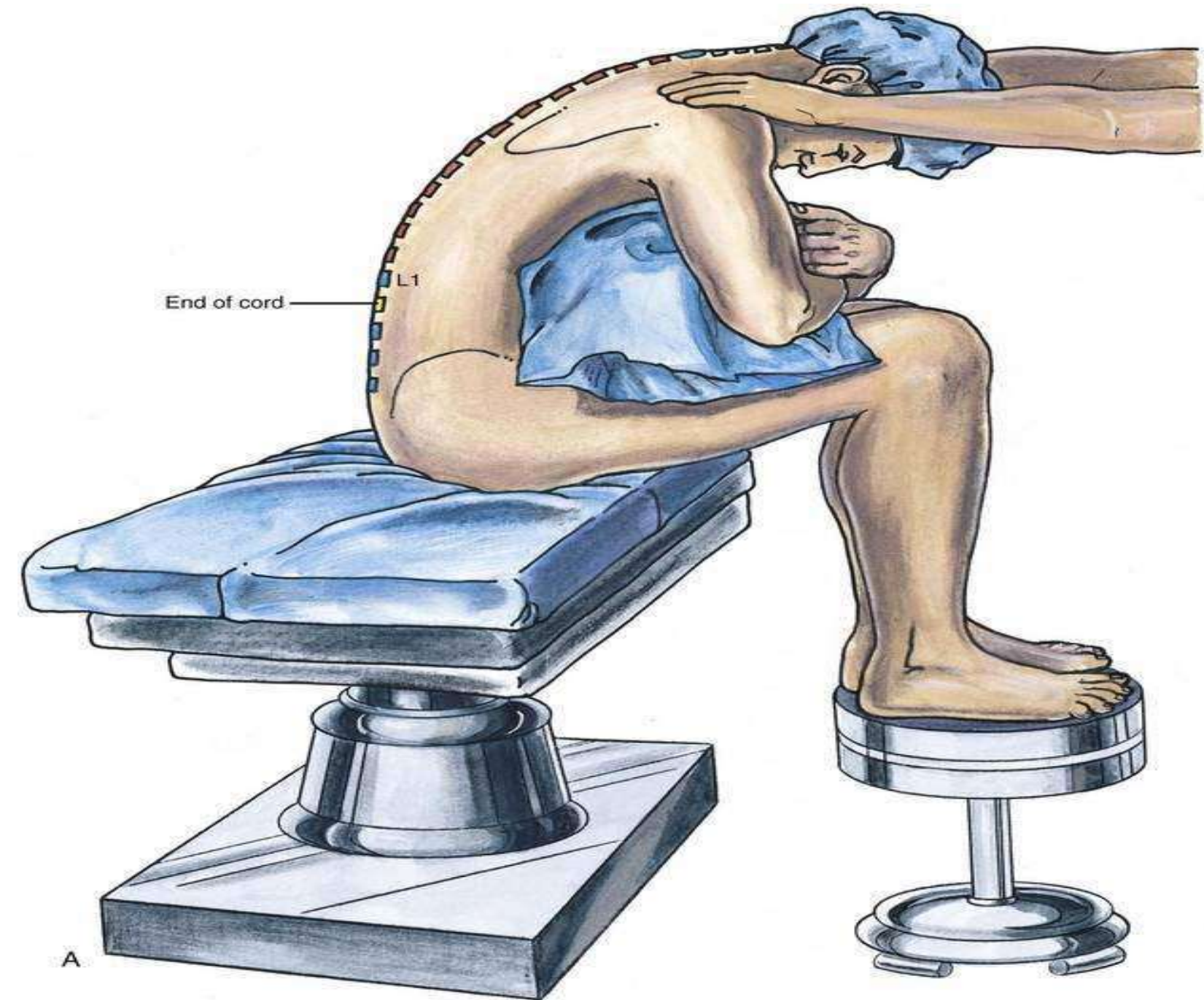
LATERAL FLEXED POSITION :

- MOST COMMONLY USED
- BACK PARALLEL TO EDGE OF TABLE
- HIPS & KNEES FLEXED NECK & SHOULDER FLEXED TOWARDS KNEES



SITTING POSITION:

- SITTING POSITION IS FOR OBESE PATIENTS, PATIENTS WITH ABNORMAL SPINAL CURVATURE
- SITTING POSITION PATIENT SHOULD SIT ON THE TABLE WITH KNEES RESTING ON THE EDGE, LEGS HANGING OVER THE SIDE AND FEET SUPPORTED BY A STOOL BELOW





SPINAL NEEDLE:

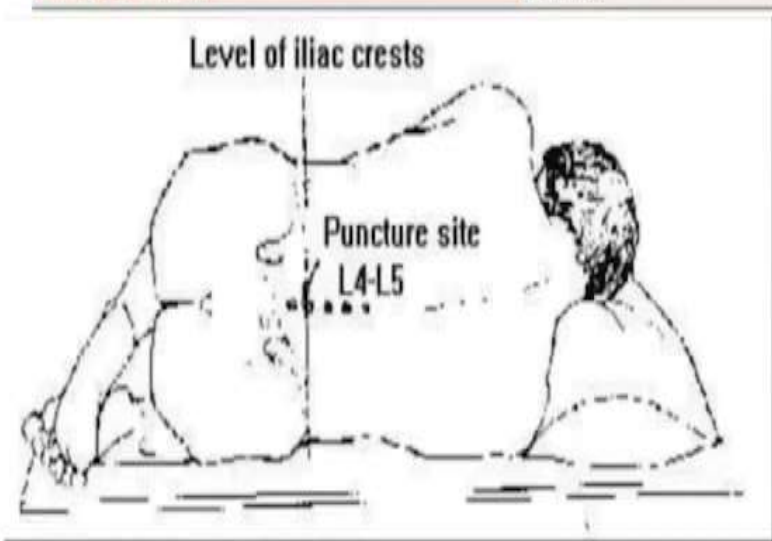
- THREE PARTS:
 - HUB
 - CANNULA
 - STYLET
- POINT OF THE CANNULA IS BEVELED AND HAS A SHARP EDGE
- LUMENAL SIZE: 18G TO 30 G
- LENGTH: 3.5 TO 4 INCHES

Lumbar Puncture Needle

TOACS IMM



GAUGE (mm)	COLOR CODE
16G (1.6 mm)	White
18G (1.2 mm)	Pink
19G (1.1 mm)	Cream
20G (0.9 mm)	Yellow
21G (0.8mm)	Deep green
22G (0.7 mm)	Black
24G (0.6 mm)	Deep blue
25G (0.5 mm)	Orange
26G (0.45mm)	Brown
27G (0.4mm)	Gray



Quincke



Whitacre



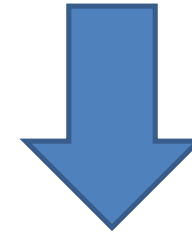
Sprotte





LEVELS OF BLOCK:

SYMPATHETIC PARALYSIS



SENSORY BLOCK



MOTOR NERVE BLOCKADE



PREGNANCY SPINAL:

AORTOCAVAL COMPRESSION

AORTOCAVAL COMPRESSION OCCURS WHEN THE GRAVID UTERUS COMPRESSES WHEN THE GRAVID UTERUS COMPRESSES THE MATERNAL ABDOMINAL AORTA AND INFERIOR VENA CAVA .COMPRESSION OF THE IVC IMPEDES VENOUS RETURN WHICH DECREASES CARDIAC OUTPUT AND COMPRESSION OF THE AORTA MAY REDDUCE UTEROPLACENTAL PERFUSION WHICH MAY RESULT IN FETAL ACIDOSIS



AORTOCAVAL OCCULSION:

1. PRELOADING WITH IV FLUIDS
2. LEFT LATERAL POSITION
3. VASOPRESSORS
4. OXYGEN THERAPY



CEREBRO SPINAL FLUID:

[A WATERY FLUID THAT IS CONTINUOUSLY PRODUCED AND ABBSORBED AND THE FLOWS IN THE VENTRICLES WITHIN THE BRAIN AND AROUND THE SURFACE OF THE BRAIN AND SPINAL CORD]

FUNCTIONS:

- PHYSICAL SUPPORT OF NEURAL STRUCTURES
- EXCRETION AND SINK ACTION
- INTRACEREBRAL TRANSPORT
- CONTROL OF THE ENVIRONMENT OF THE CENTRAL NERRVOUS SYSTEM



POST DURAL PUNCTURE HEADACHE:

PDPH Definition:

The International Headache Society (IHS) defines PDPH as a headache occurring within 5 days of a lumbar puncture, **caused by cerebrospinal fluid (CSF)** leakage through the dural puncture.



TREATMENT:

- REMAIN LYING FLAT IN BED
- THEY SHOULD BE ENCOURAGED TO DRINK FREELY OR IF NECESSARY BE GIVEN INTRAVENOUS FLUIDS TO MAINTAIN ADEQUATE HYDRATION
- SIMPLE ANALGESICS(eg:PARACETAMOL)
- CAFFEINE CONTAINING DRINKS(eg:TEA,COFFEE)
- **PROLONGEDD OR SEVERE HEADACHE MAY BE TREATED WITH EPIDURAL BLOOD PATCH.PATIENTS OWN BLOOD IS ASEPTICALLY INJECTED INTO THE EPIDURAL SPACE**



CONTRAINDICATIONS:

ABSOLUTE:

- PATIENT REFUSAL
- INFECTION AT THE SITE OF INJECTION
- INCREASED INTRACRANIAL PRESSURE
- HYPOVOLEMIA
- SEPTICEMIA
- COAGULAPATHIES
- SEVERE AORTIC AND MITRAL STENOSIS



RELATIVE:



- BRIAN TUMORS, MENINGITIS
- SEVERE ANAEMIA
- UNCONTROLLED HYPERTENSION
- VALVULAR HEART DISEASE
- ANTICOAGULANT THERAPY



THANK
YOU