



## اسم المادة و الكورس

### PAIN CLINIC INSTRUMENT

Sawa University

College of health and medical techniques

Department of Anesthesia

Fourth Stage

- جامعة ساوة الاهلية
- كلية التقنيات الصحية والطبية
- قسم تقنيات التخدير
- المرحلة الرابعة

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# Pain Clinic Instruments and Anesthesia for Pain Management Procedures

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# Learning Objectives

- • Define the purpose of a pain clinic.
- • Identify key instruments used in pain management.
- • Describe anesthesia techniques used for pain procedures.
- • Discuss safety and monitoring principles.

# What is a Pain Clinic?

- • Specialized center for diagnosing and managing acute and chronic pain.
- • Multidisciplinary approach: anesthesiologists, physiotherapists, psychologists.
- • Goal: reduce pain, improve function, enhance quality of life.

# Classification of Pain Procedures

- • Diagnostic procedures (nerve blocks, discography)
- • Therapeutic procedures (epidural steroid injection, radiofrequency ablation)
- • Surgical pain interventions (spinal cord stimulation, intrathecal pump)

# Basic Instrumentation

- • Sterile tray with:
  - - Syringes and needles (25G–18G)
  - - Local anesthetic solutions
  - - Antiseptic solution
  - - Drapes and gloves

# Needles for Pain Procedures

- • Spinal needles (Quincke, Whitacre)
- • Epidural needles (Tuohy)
- • Nerve block needles (Insulated, with connector for nerve stimulator)
- • Radiofrequency cannulas

# Catheters and Delivery Systems

- • Epidural catheters
- • Nerve block catheters (for continuous infusion)
- • Intrathecal pumps (for long-term analgesia)

# Imaging Equipment

- • Fluoroscopy: X-ray guidance for epidural or nerve root injections.
- • Ultrasound: Real-time visualization of nerves and vessels.
- • CT guidance: For deep or complex targets.

# Monitoring Equipment

- • ECG, SpO<sub>2</sub> monitors.
- • Capnography (for sedated patients).
- • Resuscitation equipment ready at bedside.

# Sterilization and Infection Control

- • Use of single-use sterile disposables.
- • Skin antisepsis: povidone-iodine or chlorhexidine.
- • Aseptic draping and technique mandatory.

# Local Anesthetics in Pain Procedures

- • Lidocaine (short-acting)
- • Bupivacaine, Ropivacaine (long-acting)
- • Dosing according to block site and patient status.

# Adjuvants and Steroids

- • Steroids: methylprednisolone, triamcinolone.
- • Adjuvants: clonidine, dexmedetomidine, ketamine.
- • Reduce inflammation and prolong analgesia.

# Sedation Techniques

- • Minimal to moderate sedation preferred.
- • Agents: midazolam, propofol.
- • Maintain verbal contact when possible.

# Regional Anesthesia Applications

- • Peripheral nerve blocks (sciatic, femoral, intercostal)
- • Epidural and caudal blocks.
- • Used both diagnostically and therapeutically.

# Complications

- • Bleeding, hematoma formation.
- • Infection, meningitis, epidural abscess.
- • Nerve injury or local anesthetic toxicity.

# Safety Measures

- • Pre-procedure checklist.
- • Continuous patient monitoring.
- • Immediate availability of emergency drugs and airway equipment.

# Post-Procedure Care

- • Observation for 30–60 minutes.
- • Assess pain relief and side effects.
- • Document all steps and patient response.

# Case Example

- Case: 45-year-old patient with chronic lumbar pain.
- Procedure: Fluoroscopic-guided lumbar epidural steroid injection.
- Outcome: 70% pain relief within 2 days.

# Summary

- • Pain management procedures require precision and safety.
- • Proper instruments and imaging are essential.
- • Anesthesia choice depends on procedure and patient condition.
- • Continuous monitoring prevents complications.

# MCQs for Review

- 1. Which imaging modality is most used for epidural steroid injection?
- A) MRI B) CT C) Fluoroscopy D) Ultrasound
- Answer: C
  
- 2. Main advantage of ultrasound in pain management?
- A) Radiation exposure B) Real-time visualization C) Cheaper than fluoroscopy D) Deeper penetration
- Answer: B
  
- 3. Which local anesthetic is long-acting?
- A) Lidocaine B) Bupivacaine C) Procaine D) Cocaine
- Answer: B
  
- 4. Preferred sedation level for most pain procedures?
- A) Deep B) General C) Minimal to moderate D) None
- Answer: C
  
- 5. Common complication of epidural steroid injection?
- A) Pneumothorax B) Hematoma C) Pulmonary embolism D) Glaucoma
- Answer: B