

Handbook of AS-E/S Mini I

1. Product Introduction

Tuoren AS-E/S Mini I is a set for regional anesthesia. It provides the rapid onset and reliability of an epidural or spinal block, allowing anesthesia to be prolonged both intra and post-operatively. It can be used for combined anesthesia to realize intraoperative and postoperative patient-controlled analgesia. This product is designed for optimal performance, minimizing drag of needle and maximizing feeling of dural puncture. LOR indicator syringe facilitates confirmation of the correct needle tip position.

2. Intended use

Used in epidural nerve block, subarachnoid nerve block to puncture or inject drug.

3. Components (necessary and optional)

Basic components: Epidural needle, Spinal needle, Anesthesia catheter, LOR indicator syringe, Adaptor, Filter

Optional components: 22G/16G subcutaneous needle, 5ml/10ml syringe

4. Function

Can achieve intraoperative dosing and analgesia, establish an analgesic dosing channel for postoperative analgesia

5. Factors affecting puncture effect

- 1) Patient body position
- 2) Anesthesiologist experience

6. Advantages of each components, including package

a. Epidural needle

Needle tip processed by special technics reduces the lesion on nerve and tissue during puncturing; can be made according to clinical request.

b. Spinal needle

The needle made by special craft can reduce the damage of tissue; three lateral ports design in the needle tube makes it can be used in ozone treatment.

c. Atraumatic anesthesia catheter

Soft tip prevents damage to vessel, dura mater or spinal nerve being damaged or punctured by hard tip; Springwound catheter tube with kink-resistance property avoids plugging; Good anti-tensile property facilitates extracting the catheter; Radiopaque.

d. Filter

0.2 liquid filter with precision filtration.

7. Materials

Combined needles: Medical stainless steel needle tube provides enough toughness and stiffness;

Anesthesia catheter: Made of medical polymer material;

Packing: Packed with Tyvek dialysis paper, has better resistance to bacteria and permeability.

8. Scope of application

Anesthesia Department, Pain Department, Emergency Department

9. For the best use of this product, or suggestions.

- 1) Set the patient in a correct body position, especially for osteoarticular diseases patients, or the tube can be stuck in certain parts easily. Check the package, do not use if it has been previously opened or damaged. Wear gloves according to aseptic operation specification and open the package to check whether the device is intact.
- 2) Prior to use, the function of LOR indicator syringe should be tested with saline. First, aspirate about 5ml saline into the syringe, plug up the syringe nozzle with index finger, then, push the plunger until the piston is blocked at mark of 2ml to make the balloon inflated. Move away index finger, the saline will shot out and the balloon deflates. Do not use if the balloon of LOR indicator syringe is leaky, broken, out of date, etc.
- 3) Prior to the epidural procedure, patient may be given I.V. infusion fluid, he/she will then be asked to lie on his/her side and bring his/her knees upwards towards his/her jaw. However,

this procedure is occasionally performed when he/she sitting up with his/her back rounded. Locate the appropriate section of the spine once the patient is in position. Clean the area and inject small amount of local anesthetic into the skin at the injection side.

- 4) Locate the puncture point. Insert the epidural needle into patient's spinal column slowly and carefully. The stylet shall be drawn out when the needle tip is felt embedded in dense tissue. The scale on the needle can help the operator to judge the depth and location of the insertion of the needle.
- 5) Connect the prepared syringe with the epidural needle tightly. One hand holds the needle while thumb of the other hand pushes the plunger beyond the mark of 2ml to make the balloon inflated, rotate the syringe until the balloon is upward; during the process, the epidural needle should be always against the dense tissue to ensure that the balloon keeps inflated.
- 6) Advance the epidural needle further slowly and cautiously by both thumbs of two hands, avoid it backward; the depth cannot exceed 1mm for each advance, while continuously observing the signal of the balloon to detect the loss of resistance. The success of the procedure hinges on placing the tip of the epidural needle in the space that lies just outside the

membrane surrounding spinal nerves. The membrane is called dura, and the space is epidural space. When the needle tip reaches in epidural space, the LOR indicator syringe balloon will deflate promptly.

7) Then remove the syringe and insert the anesthesia catheter through the epidural needle. After anesthesia, extract the catheter slowly with uniform force to avoid the catheter broken in the body.

10. Contraindication

- Patient refusal
- Coagulopathy
- Spinal canal with tumor, inflammation
- Severe adhesion in epidural space caused by multiple puncture or injection
- Therapeutic anticoagulation
- Skin infection at injection site
- Raised intracranial pressure
- hypovolaemia etc.

11. Relative contraindications

- Uncooperative patients

- Pre-existing neurological disorders
- Fixed cardiac output states
- Anatomical abnormalities of vertebral
- Prophylactic low dose heparin etc.

12. Specifications

| Specifications | | | | | | | | | | |
|-------------------------------|--------------------------------|----------|----------|----------|----------|-------------------------|----------|----------|----------|----------|
| Accessories | Combined Spinal & Epidural Kit | | | | | Continuous Epidural Kit | | | | |
| | SE11625C | SE11625S | SE11625R | SE11625T | SE11827C | CE11690C | CE11690S | CE11690R | CE11690T | CE11890C |
| Lor Indicator Syringe 5ml | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Epidural Needle 16G | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | |
| Epidural Needle 18G | | | | | ✓ | | | | | ✓ |
| Spinal Needle 25G | ✓ | ✓ | ✓ | | | | | | | |
| Spinal Needle 27G | | | | | ✓ | | | | | |
| Epi. Catheter 19G | ✓ | | | | | ✓ | | | | |
| Epi. Catheter-†style† 19G | | ✓ | | | | | ✓ | | | |
| Epi. Catheter- Reinforced 19G | | | ✓ | | | | | ✓ | | |
| Epi. Catheter- Soft tip 19G | | | | ✓ | | | | | ✓ | |
| Epi. Catheter 21G | | | | | ✓ | | | | | ✓ |
| Medicine Filter 0.2µ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 5ml/10ml syringe | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Epidural pad, subcutaneous needle (22G, 16G) are optional; 5ml/10ml syringe is optional.