
Regional anaesthesia in paediatric patient

Wesam Marzok Fouda

Regional anaesthesia, alone or combined with light general anaesthesia, has many advantages in paediatric surgery. It provides excellent operative conditions, as well as being an excellent method for postoperative pain relief. The anaesthesiologists must understand the anatomical differences between the child and the adult patients as regards the anatomical landmarks, size and depth of different structures. The procedure also requires an understanding of the physiological differences which modify the child's response to the different block techniques, particularly with conduction block along the neuraxis. The pharmacokinetics and the dosages of local anaesthetics are also different from that of adult patients. The different techniques of regional anaesthesia used in adults are acceptable in paediatrics, provided that the anaesthesiologists have extensive experiences with the techniques to reduce the complications. Caudal anaesthesia is the most frequently employed local anaesthetic technique in paediatric surgery. It has been used for several years in many paediatric centers for circumcision, orchiopey and hernia repair. Lumbar and thoracic epidural blocks have many advantages. They allow accessibility to all spinal segments. Therefore, in logic, upper abdominal and chest surgeries can be performed. They also allow repeated administration of local anaesthetics and narcotic analgesics in the postoperative period through an indwelling catheter. Spinal anaesthesia has been used for any surgical procedures below the diaphragm, especially in high risk infants. Therefore it is now recommended by several authors to be the anaesthetic of choice in premature infants who are more liable to life threatening apnoea and other complications after general anaesthesia. All peripheral nerve blocks used in adults can be performed in children as well. A peripheral nerve stimulator can be used to identify the peripheral nerves, thereby, avoiding the uncooperation of the child to monitor paresthesia. Brachial plexus block by the axillary approach; the most satisfactory block for the upper limb operations in children. It provides excellent muscle relaxation and complete intra- and postoperative pain relief. • Femoral nerve block is a useful method for pain relief in children with femoral shaft fractures, since it will relieve muscle spasm, provide immediate analgesia, and allow time for the patient to be prepared for surgery. • Sciatic nerve block has been used primarily for orthopaedic surgery, but it can also be useful to provide analgesia for children with tibial fractures. Penile block which is becoming increasingly popular, is a safe, simple and easy technique to provide post-circumcision analgesia. The interest in topical anaesthesia has been renewed in paediatrics by the availability of several new ointments such as EMLA cream, TAC cream, and lidocaine-adrenaline-tetracaine

gel. Regional anaesthesia can benefit children by improving the operative conditions and providing postoperative analgesia. However, the anaesthesiologists must have a clear understanding of the anatomy, the influence of age and size, and the potential complications.