Thoracic Epidural Analgesia to An Infant with Hypoxic Ischemic Encephalopathy for Open Nissen Fundoplication: Letter to the Editor

Nissen Fundoplikasyonu ve Gastrostomi Operasyonu Planlanan Pediatrik Olguya Torasik Epidural Kateter Takılması

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Nissen fundoplication is a surgical procedure for gastro-oesophageal reflux disease in medical treatment has failed to control symptoms. We describe the case of an 11 month old child with hypoxic ischemic encephalopathy presenting for an open Nissen fundoplication and gastrostomy.

An 11 month-old baby boy, weighting 8.5 kg (25-50 percentiles) presented for an open Nissen fundoplication and gastrostomy insertion. He has hypoxic ischemic encephalopathy because of meconium aspiration at the time of birth. At the preoperative holding area patient was hypotonic and there was coarsening of the breath sounds. After routine monitoring the patient had intravenous induction of anesthesia with propofol, fentanyl and rocuronium. He was intubated with 5.0 size oral tracheal tube and ventilated with air:oxygen and sevoflurane on a circle system. Sevoflurane end tidal concentration was set according to achieve a stable heart rate. After positioning on his right side, the epidural space was identified at thoracal 10 level, 1.8 cm from skin, using loss of resistance to saline. A 24 Gauge catheter was inserted leaving 5 cm in space. Levobupivacaine 5 mL of 0.25% was injected. An epidural infusion of levobupivacaine 0.1% was started at 2 mL/hr. Surgery took 95 minutes and during this time the patient was stable.

At the end of the surgery he was extubated uneventfully. He was then transferred to intensive care unit with the epidural infusion running. In intensive care unit the patient remained stable. The epidural catheter was taken out postoperative 24 hour and the patient made a good recovery with no further complications.

Epidural analgesia combination with general anesthesia would avoid the need for intravenous opioids, and would limit the amount of needed inhalational agent to allow surgery to be performed.[1] We observed almost 60% decline in age adjusted minimum alveolar concentrations of sevoflurane with epidural anesthesia. Epidural analgesia both provides

cardiovascular stability and excellent pain relief, and also permits early extubation and intensive respiratory physiotherapy, thereby preventing postoperative mechanical ventilation and other respiratory complications. According to a retrospective study epidural analgesia may improve the short-term outcome for children following open Nissen fundoplication.[2]

Low thoracic epidural analgesia may be advisable for selected patients with preexisting lung disease undergoing upper abdominal surgery.[3] Thoracic epidural analgesia permitted us to use a lower dose of local anesthetics. It is commonly believed that in infants and young children epidural catheterization is technically more difficult. According to a survey done with pediatric anesthesists shows that technical problems with epidural catheter insertion in this age group are not common.[4]

Thoracal epidural anesthesia provided good conditions for the surgeon and adequate analgesia postoperatively for the child. It also avoided the need for postoperative ventilation or intravenous opioid use. General anesthesia coupled with "multimodal" anesthesia techniques including thoracal epidural anesthesia for upper abdominal surgery will be a state of art with less complication rates in the hands of experienced pediatric anesthesia providers and with even might improve outcome rates for our patients.

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