

Pediatric spinal anesthesia at D. G. Khan (Pakistan); Our experience of 20 years

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Spinal anesthesia in adults, once very popular, passed through a phase of disrepute and decline, but then resurged and became widely acceptable as the first choice anesthesia in some categories of surgical procedures. It is a useful alternative to general anesthesia (GA) in adults. But this useful technique has been under-utilized in pediatric population in Pakistan. It has come to my knowledge vide personal communication that the anesthesiologists working in south Punjab even in tertiary care hospitals, public or private sector, spinal anesthesia is being administered by only a few anesthesiologists. At D. G. Khan, it has been administered to children (minimum age 16 days) for the last 20 years. No significant complication has been observed up till now.

Anesthesiologists feel hesitant in administering GA to children due to several reasons;

First; An overall incidence of acute respiratory tract infections in a child ranges 5.5 to 9.6 episodes per year.^{1,2} Each episode lasts for two weeks followed by a period of hyper-reactivity for 2 to 6 weeks. The risk of adverse respiratory events (laryngospasm, bronchospasm, desaturation) in a child with upper respiratory tract infection is eleven times increased after endotracheal intubation.³ Practically, it is much more difficult to find a child without a period of airway hyper-reactivity and free from adverse respiratory events.

Secondly, postoperative episodes of central and obstructive apnea are more likely in premature infants and even term infants with post-conceptual age less than 60 weeks after GA.⁴ Premature children have relatively higher prevalence of inguinal hernia.⁵ Early repair of inguinal hernia is recommended to prevent incarceration, testicular torsion and recurrence of hernia.⁶

Moreover, danger of neurodegeneration in children who underwent GA under 4 years, resulting in neurocognitive deficits and poor performance at school subsequently, remains a global concern. But substantial studies did not provide supportive evidence.⁷ After studying the technique in a case presentation, I considered its administration in 2000.⁸ After considering all possible problems, their prevention and management, spinal anesthesia was administered to a child of 3 years undergoing repair of hypospadias. Initially, we selected cases for this procedure who required blockade of lumbosacral

segments only. After all routine protocols including monitoring, maintaining i.v. line and infusion of fluids, inj ketamine 1 mg/kg was administered i.v. Operating table was tilted 30 degree head side up, to avoid high spinal. Child was kept in left lateral position, hip and knee flexed while neck flexion was avoided to prevent airway obstruction. Needle passed into L4-5 OR L5-S1interspinous space, after free flow of CSF. Inj bupivacaine 0.75% hyperbaric 0.3 mg/kg was administered. Cardiovascular and respiratory monitoring was done. Subsequently, it was administered for TEV (club foot), internal fixation of femur and inguinal herniotomy. Soon after, other anesthesiologists joined the club and continued its practice in public as well as in private sector hospitals. Most of the time CSF flow was evident during first attempt. Failure of spinal requiring GA has been very rare. To this day, more than 5000 children have received spinal anesthesia during the last 20 years without any significant complication. It is worth mentioning that a general surgeon administered spinal anesthesia without proper knowledge and skill to a 4 year old child at a THQ Hospital, which resulted in cardiac arrest. In a similar event, a junior anesthesiologist, with no prior experience, administered spinal to a 4 years old child, which landed into cardiac arrest and death of the child. Some colleagues thought that its practice in a children hospital had been stopped due to fears of neurological damage. Evidently, some children were observed to have abnormal gait and posture after being subjected to spinal anesthesia.

It is therefore recommended that this useful technique should be employed more frequently, but should only be administered by a qualified anesthesiologist with sufficient knowledge and practice under observation of an experienced senior at a center, where it has been frequently practiced.

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M Extensive facial burns: A case for awake fiberoptic intubation

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Mask ventilation is the most basic step in airway management. There are certain situations where mask ventilation is difficult,¹ but sometimes it may be really impossible as in this 30 year male patient with facial burns. He suffered from burns one and a half month back due to episode of seizure. Burns were present over face, neck, chest and shoulders. On examination, mouth opening was less than one cm. Teeth were loose. Neck movements were restricted. Left nares was only partially patent. Respiratory and cardiovascular systems were unremarkable. Relevant laboratory investigations were within normal limits. Mask ventilation was not feasible. So awake nasal fiberoptic intubation was planned.^{2,3} The procedure was explained to the patient and consent was taken



Fig 2: Showing tip of the patient after intubation

for the same. He was given alprazolam 0.25 mg and ranitidine 150 mg at night and 2 h before surgery.

Preoperatively nose was decongested with xylometazoline nasal drops. Glycopyrrolate 0.2 mg and fentanyl 30 µg were given intravenously. Nebulization was done with xylocaine. Xylocaine jelly

was instilled into right nostril and nasopharyngeal airway 6 mm was put gently. Fiberscope loaded with flexometallic tube of internal diameter 6 mm was passed through it. After visualization of glottis, larynx was sprayed with 2 ml of lignocaine 2% through the injection port of fiberscope and trachea was intubated successfully (Figure).

Anesthesia was induced with propofol 120 mg, fentanyl 100 µg and vecuronium 5 mg. Anesthesia was maintained with 67 % nitrous oxide in oxygen, sevoflurane and vecuronium. Surgery lasted for 3 h. At the end of surgery, neuromuscular blockade was reversed and trachea was extubated awake.

In case of difficult mask ventilation, alternative techniques must be kept in mind.² Although LMA or i-gel have been used as an alternative under sedation or light anesthesia, in the presence of restricted mouth opening the safest approach remains awake fiberoptic intubation.³

(Permission to publish the picture was obtained from the patient).

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