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Randomized Prospective Evaluation of Additional Efficacy of Genitofemoral Nerve Block to Ilioinguinal and Iliohypogastric Nerves Block for Pain Management in Children Undergoing Hernia Repair.

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Introduction: Preoperative ilioinguinal and iliohypogastric (IG-IH) nerves block has been widely employed to provide analgesia in children undergoing inguinal hernia repair. However, it has been shown that this technique provides insufficient analgesia for intraoperative management and must be supplemented by general anesthesia (1). Considering the innervation to the inguinal region, we hypothesized that the genitofemoral nerve block may be also required in order to improve the quality of analgesia. The aim of this study was to evaluate the additional efficacy of the genitofemoral nerve block to IG-IH nerves block for pain management in children undergoing inguinal hernia repair.

Methods: Following written parental informed consent, 98 patients (6 month-10 years, ASA Ⅰ-Ⅱ) scheduled for unilateral inguinal hernia repair were enrolled in this study. General anesthesia was induced by inhalation of nitrous oxide and sevoflurane followed by placement of a laryngeal mask and was maintained with nitrous oxide (70%) and sevoflurane (2%) with the patients breathing spontaneously. Before the surgery, the patients were randomly assigned to receive either IG-IH nerves block (Group Ⅰ, n=48), or IG-IH and genitofemoral nerves blocks (Group Ⅱ, n=50). Data were collected intraoperatively and postoperatively. The heart rate (HR), systolic blood pressure (SBP) were recorded at the following 4 points: 1) before the start of surgery (control), 2) immediately after skin incision, 3) sac traction, 4) the end of surgery. Postoperatively the child's pain was assessed by a nurse blinded to the group allocation. Analgesic requirements and incidence of complications were recorded by the discharge. Intraoperative data were analyzed with two-way ANOVA with repeated measurements. $P<0.05$ was considered statistically significant.

Results: Demographic variables and hemodynamic data at the control (point 1) were similar between the two groups. Intraoperative changes in %SBP and %HR of the control are shown in fig. 1. At sac traction(point 3), %SBP increased significantly as compared to the control(point 1) in the group Ⅰ and a significant difference in %SBP was observed between the two groups. In Group Ⅱ, %SBP remained unchanged during the study period. In the both groups, %HR significantly increased as compared to the control at sac traction. However, %HR in the group II was significantly lower compared with that in the group I at sac traction. Regarding postoperative data, there were no significant differences in the analgesic requirements and the incidence of complications. No hematoma formation by the block was observed.

Conclusion: The results suggest that the addition of genitofemoral nerve block to IG-IH nerves block can provide more effective analgesia intraoperatively especially at sac traction in children undergoing inguinal hernia repair.

Reference: (1) Anesthesiology 1989; 70:324-338

Fig.1.