

## Pediatric Surgery, Neurosurgery & Anesthesiology Abstracts

### Subcutaneous endoscopically assisted ligation (SEAL) of the internal ring for repair of inguinal hernias in children: based on 100 cases in Iran

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**Background:** Minilaparoscopic surgery is progressing in many fields of pediatric surgery. Minilaparoscopic inguinal hernia repair by "SEAL" method was introduced at 2005. We started this technique at 2010 in Iran. We designed a prospective study to compare the results of our work with the results of pioneers in the world and to unfold the problems of this technique.

**Methods:** In this study, all laparoscopic inguinal hernia repairs (SEAL procedure) were done by the same surgeon. In this technique after induction of general anesthesia, one 3-5 mm umbilical incision was used for endoscope insertion and high ligation of hernia sac was done percutaneously by non absorbable sutures without any other incision. Patients were discharged at the same day of the operation.

**Findings:** We ligated 100 hernia sacs on 68 patients during this study (37 girls, 31 boys). All patients followed at least for 6 months. Mean operation time was 10 minutes. There was no conversion to open surgery. Management of 36 patients was changed by laparoscopy; contralateral patent processus vaginalis was found in 29 patients and the processus was closed in 7 patients contrary to preoperative diagnosis. There was no recurrence, no wound infection and no major complication unless 4 noncommunicating hydroceles. The port site scar was no significant 6 months after surgery. "SEAL" is a known technique for pediatric inguinal hernia repair. It can be an excellent choice according to less complications, minimal scar at operation site and feasibility of contralateral patent processus vaginalis repair. Our results were comparable with the pioneers. In addition, laparoscopy can prevent negative exploration of inguinal region in so many patients (7%).

**Conclusion:** "SEAL" is a simple and good technique with a short Learning curve and least complications. We recommend this operation in any center that has basic laparoscopic facility.

**Keywords:** Inguinal Hernia, Minilaparoscopy, Seal

### Non-Traumatic coma in children in south-east of Iran

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**Background:** A lot of children with non-traumatic coma will suffer from complications or even die from it. Determining the causes of consciousness loss in any specific region, and within any sex and age group will dramatically reduce such complications. This article addresses the causes of non-traumatic coma in children.

**Methods:** All children (aged 1 month to 15 years) hospitalized for non-traumatic coma were included in the study. All of the patients received clinical measures such as history, physical, and neurological examinations by evaluation of consciousness level using GCS system, and paraclinical assessments including CBC, diff, blood biochemistry, urine analysis, and liver function tests for all patients. In case of indication, blood and urine culture, brain CT scan or MRI, Lumbar Puncture, metabolic study, EEG, and so forth were carried out. Finally, with respect to the findings from the history, clinical examinations, and paraclinical information, the cause of consciousness loss was determined.

**Findings:** Among the 123 children under investigation, there were 76 boys (61.8%) and 47 girls (38.2%) with average age of  $3.2 \pm 0.64$  years. The causes of the children's loss of consciousness were as follows: Toxic causes in 61 patients (49.6%), infectious causes in 30 patients (24.4%), metabolic causes in 11 patients (8.9%), and structural abnormality of the brain in 4 patients (3.3%). Seizure was the cause of consciousness loss in 7 children (5.7%). In addition, 10 patients (8.1%) had other causes for loss of consciousness.

**Conclusion:** Toxic causes with an incidence of 49.6% were the most common cause of loss of consciousness within all age groups.

**Keywords:** Coma, Non-Traumatic, Children

### Split cord malformation; a review of 61 cases in a 5-year period

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**Background:** Split cord malformation (SCM) is a rare form of closed spinal dysraphism in which the spinal cord is divided partially or completely in the sagittal plane. These lesions are divided into two types depending on the type of midline mesenchymal derivative. In SCM-II, there is a single dural sac with a non-rigid fibrous spur dividing the cord. SCM-I is characterized by a rigid extradural bony/cartilaginous septum leading into division of the cord in double dural sacs.

**Methods:** A retrospective analysis was done in patients who were operated on for split cord malformation in Children's Medical Center since 2008 to 2013.

**Findings:** Sixty one patients, 19 males and 24 females, with the mean age of 44.38 months (0.1 – 149) were enrolled. There were 39 SCM-I and 22 SCM-II cases. The presentations in SCM I and II groups were skin stigmata (87% vs. 86%), urologic disorders (69% vs. 68%), limb weakness (51% vs. 72%), and scoliosis (46% vs. 18%). The associated anomalies in type I and II included; tethered cord (74% vs. 91%), myelomeningocele (38% vs. 49%), syringomyelia (10% vs. 31%), arachnoid cyst (10% vs. 0), dermal sinus (7.6% vs. 4.5%), and lipoma (5% vs. 9%). All those with SCM-II who had been selected for surgery, had symptomatic concomitant anomalies or tethered cords.

**Conclusion:** Surgery is the treatment of choice for SCM-I wherein the bony spur should be excised alongside

addressing tethered cord. However, there are controversies regarding the need for surgery in all SCM-II patients, especially those with no neurological deficit. We recommend untethering surgery in cases of SCM-II with symptomatic tethering, and periodic clinical/radiological follow-up for those without tethered cord.

**Keywords:** Split Cord Malformation, Tethered Cord, Surgery

### Brain tumors occurring in children under 1 year of age: a review of 30 cases in a 6-year period

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**Background:** Brain tumors in infants under 12 months of age have different clinical presentations, anatomical distribution, histopathological diagnosis, and clinical prognosis from older children.

**Methods:** A retrospective analysis was done in all patients less than 12 month old who were operated on for primary brain tumor in Children's Medical Center since 2008 to 2014.

**Findings:** Thirty infants, 19 males and 11 females, with the mean age of 6.23 months (0.5 - 12) were enrolled. There were 14 supratentorial and 16 infratentorial tumors. The presenting symptoms included increased head circumference (15); bulge fontanel (14); vomiting (14); developmental regression (11); sunset eye (6); seizure (4); irritability (3); loss of consciousness (3); nystagmus (2); visual loss (2); hemiparesis (2); torticollis (2); 6, 7, 9, 10 nerve palsy (each 2); ptosis and papilledema (1). Gross total resection was performed in 18 cases and subtotal resection in 11 cases. Thirteen patients needed external ventricular drainage (EVD) in perioperative period, from whom four infants needed ventriculoperitoneal shunt. One patient underwent ventriculoperitoneal shunting without tumor resection. Histological diagnoses were PNET (6); anaplastic ependymoma (5); grade II ependymoma (4); pilocytic astrocytoma (3); choroid plexus tumor (3); pilomyxoid astrocytoma, astroblastoma, DNET, teratoma, hemangiopericytoma, DIG, SEGA (each 1). The rate of 30-day mortality was 20%. Fifteen patients with malignant neoplasms underwent chemotherapy and 3 ones received radiation after the age of 3 years. There were 3 recurrences and 2 deaths during adjuvant therapy. Nineteen patients are now well controlled with or without adjuvants therapy.

**Conclusion:** Brain tumors in infants should be treated with surgical resection as well as chemotherapy when necessary.

**Keywords:** Brain Tumor, Infants, Surgical Resection

### Effect of premedication with oral Ketamin on pain and delirium after sevofluran anesthesia in patients undergoing hernia surgery

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**Background:** Delirium and agitation is a post anesthetic problem which interferes with children relaxation in recovery room. Agitation in recovery room can hurt to child and the nurse of recovery can not do his care in the best. Agitation in children that received sevofluran is more than halothan and isofluran and its because of rapid elimination of this drug. This drug has lower partition coefficient and rapid elimination. This agitation would be hard to control for the nurse of recovery. In our study we added ketamin to midazolam based oral premedication for reducing sevofluran-related delirium.

**Methods:** In this randomized clinical trial study, 60 children aged 2-8 years who were undergoing general anesthesia for elective surgery in children's medical center in Tehran during 2011-2013 were included. The patients were allocated into groups: Group 1 (30 patients) received oral midazolam 0/5mg/kg, mixed with ibuprofen 10mg/kg, while Group 2 (30 patients) received a similar premedication mixture, in addition to ketamin 2mg/kg. Induction of anesthesia was carried out using sevoflurane and was maintained with sevoflurane 1.5-4%. The incidence and severity of pain, delirium score, recovery and extubation duration were recorded postoperatively

**Findings:** Vomiting shows no significant difference between both groups. Extubation time showed significant differences between both groups and its longer in ketamin group. Recovery time is similar in two groups. Pain score between two groups were significantly different and its less in ketamin group, although there was significant difference in delirium score between two groups, and it was better in ketamin group, especially after 30 minutes that most anesthetic drugs are eliminated from body. RN satisfaction was better in ketamin group ( $p < 0.000$ ).

**Conclusion:** This study showed that adding a low dose of oral ketamin to midazolam-based sedation in children undergoing hernial repair reduced sevofluran-related delirium and agitation.

**Keywords:** Delirium, Ketamin, Sevofluran