TREATMENT OF CLUBFOOT IN CHILDREN WITH ARTHROGRYPOSIS IN THE FIRST YEAR OF LIFE BY THE PONSETI METHOD. ANALYSIS OF IMMEDIATE RESULTS
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Immediate results of the treatment of 10 children with clubfoot in children with arthrogryposis by the Ponseti method are presented. They are compared with the results obtained in the children given conservative treatment by different methods.
Key words: arthrogryposis, clubfoot, Ponseti

CHARACTERISTIC OF FREQUENCY AND LOCALIZATION OF SIMPLE VERTEBRAL COMPRESSION FRACTURES IN CHILDREN IN DIFFERENT SEASONS
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We studied the frequency and localization of simple vertebral compression fractures in children in different seasons. It was shown that such fractures most frequently occur in summer (10.9%) when they account for 3.49% of all injuries. In this season, 20.50% of the hospitalized patients are treated for vertebral body fractures compared with 13.48% in autumn, 11.67% in winter, and 10.96% in spring.
Key words: children, vertebral fractures, season

LAPAROSCOPIC PREPERITONEAL INJECTION OF POLYACRYLAMIDE GEL — A NEW METHOD FOR THE TREATMENT OF INGUINAL HERNIAS: PRELIMINARY RESULTS OF AN EXPERIMENTAL STUDY
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Introduction. Inguinal herniotomy is the commonest intervention in pediatric surgery. Laparoscopic suturing of the inguinal ring are easy to perform by various methods with a small number of relapses. This study was aimed to evaluate results of laparoscopic preperitoneal injection of 3D gel for the closure of the internal inguinal ring in laboratory animals.
Materials and methods. Peritoneoscopy under general anesthesia was performed in 12 Chinchilla male rabbits (body weight 1200-1400 g). The endoscope was introduced into mesogastrium to identify inguinal rings on both sides. The Tuohy needle with a syringe containing the DAM+ bulk polymer (3D polyacrylamide gel with silver ions (Argiform, Bioform)) was introduced preperitoneally. The implant was placed in the inguinal ring opening to cover spermatic cord structures. The rabbits were extubated after gel administration. The second laparoscopy was performed in 6 months to examine internal inguinal rings.
Results. The postoperative period was uneventful. Second laparoscopy did not reveal repeated opening of internal inguinal rings. In all animals, precise placement of the polymer agent and adequate coverage of testicular vessels was achieved.
Conclusion. The study showed that the use of a biopolymer yields good long-term outcomes of surgery and ensures stable closure of internal inguinal rings in rabbits. It may be hoped that bulk polymers can be used to treat inguinal hernias in children after additional studies involving animals and humans.
Key words: inguinal hernia, laparoscopy, children, polyacrylamide gel

POSSIBILITIES OF APPLICATION OF THE DAM+ BULK HYDROGEL FOR INJECTION THERAPY OF GASTROESOPHAGEAL REFLUX DISEASE (EXPERIMENTAL STUDY)
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This experimental study was aimed to elucidate morphological changes in rat oesophageal walls within 1, 3, 7, 14, 21, 45, and 95 days after submucous injection of DAM+ hydrogel to 21 adult female Wistar rats. Morphometric analysis showed that the total number of cells (mostly macrophages, neutrophils, and lymphocytes) in the oesophageal submucous layer increased on day 1 after gel administration but did not grow further during the rest follow-up period. The gel had neither injurious nor local irritative effect on oesophageal tissues, its bolus injections created an additional volume.
Key words: gastrooesophageal reflux disease, esophageal, lower esophageal sphincter, bulking gel
RESULTS OF SURGICAL TREATMENT OF CHILDREN WITH SMALL INTESTINAL ATRESIA RESPONSIBLE FOR SHORT BOWEL SYNDROME
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Results of the treatment of post-resection short bowel syndrome in children are presented. All the patients were admitted in critical condition. The follow-up period was at least 6 months long. Combined diagnostics of the motor-evacuation function of the gastrointestinal tract was followed by multi-treatment intervention aimed at small bowel adaptation. Analysis of the data obtained facilitated the choice of the optimal strategy of surgical treatment of the patients with short bowel syndrome.

Key words: short bowel syndrome, parenteral nutrition, small bowel adaptation

MODERN GENDER-AGE FEATURES OF CHRONIC ORGANIC CONSTIPATION IN CHILDREN
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The paper reports the results of comprehensive examination of 109 children aged 4-15 yr with chronic organic constipation associated with elongation of a sigmoid intestine (dolichosigma). Three groups of patients were distinguished with compensated (35.78%), subcompensated (33.03%), and decompensated (31.19%) stages of chronic constipation. Analysis of gender-age characteristics of the children revealed the relationship between clinical features of the disease, sex and age of the patients. It was shown that chronic constipation with dolichosigma occurs more frequently in boys than in girls. The disease is more severe, leads to complications, and tends to be decompensated in males. Decompensation develops in the children suffering chronic constipation over 7 years and a long period (more than 3 years in 89.29% of the cases) between the first manifestations of the disease and application for medical assistance. The authors emphasize the importance of timely and comprehensive examination of children with chronic organic constipation for the early detection of this pathology and prescription of nutritive correction and adequate therapy for the prevention of decompensation with a high risk of complications and subsequent surgical intervention.

Key words: constipation, dolichosigma, children

REDUCTION OF INTOXICATION BY COMBINED EXTRACORPOREAL DETOXICATION METHODS IN CHILDREN WITH RENAL INSUFFICIENCY
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Effectiveness of detoxication methods was estimated in 215 patients with acute (n=63) and chronic (n=152) renal insufficiency. Analysis of data obtained revealed feasibility of several combinations of hemodialysis, hemosorption, and plasmapheresis depending on the severity of patients’ conditions. The application of this approach allowed to reduce the level of intoxication, improve metabolic processes, and normalize disturbed electrolyte metabolism. The proposed treatment had beneficial effect on the health status and life expectancy in the most severely affected patients.

Key words: extracorporeal detoxication, chemodialysis, hemosorption, plasmapheresis, children, acute and chronic renal insufficiency

APPLICATION OF BULKING AGENTS FOR THE TREATMENT OF ANAL INCONTINENCE
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Anal incontinence is a challenging condition encountered at any age. One of its causes is an injury to or incompetence of the internal anal sphincter (AS). Its anatomic features (small thickness, autonomous innervation) account for poor results of surgical restoration of AS. The search for an ideal bulking agent for normalization of anal pressure and improvement of retention of stool in the anal canal is currently underway. The foreign literature reports numerous data on the use of synthetic autoand allotransplants for the treatment of fecal and urine incontinence. However, opinions differ as far as advantages of certain medications over others are concerned, and the procedure of injection treatment of anal incontinence awaits standardization. In this country, DAM+ has been approved for use in soft tissue endoprosthesis since 2002. DAM+ is a synthetic stable highly viscous material containing no components of animal origin. Since 2007, it has been used at Sankt-Peterburg State Pediatric Medical University to treat anal incontinence in children with AS incompetence.

Key words: fecal incontinence, bulking agents, anal implants
NUSS THORACOPLASTY AND ITS MODIFICATION IN DIFFERENT COUNTRIES
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Pectus excavatum or funnel chest (FC) is the commonest malformation of thoracic wall in children. Nuss thoracoplasty has been the golden standard for correction of this defect over the past 10 years. The method was substantially modified during this period which resulted in the appearance of hybrid procedures even though the position of the plate remains invariably beneath the deepest point of sternal depression. Various modifications differ in thoracoscopic techniques (bilateral thoracoscopy, the use of flexible pectoscope instead of rigid thoracoscope, non-thoracoscopic procedure), the use of different fixation techniques, viz. metal fixation devices, pericostal sutures, T-shaped plates for sternal fixation, variation of plate shape and length, plate materials (substitution of nickel plates by hypoallergenic titanium ones). These variants are worthy competitors of the original technique; some of them even surpass it.

Key words: funnel chest, thoracoplasty, Nuss thoracoplasty, T-shaped plate, children

CONGENITAL GIANT PIGMENTED NEVI IN CHILDREN: CLINICAL FEATURES, DIAGNOSTICS, TREATMENT
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Congenital giant pigmented nevus (CGPN) is a benign neoplasm developing during the embryonic period as a result of migration of melanocytes from the neuroectodermal tube. The number of patients with CGPN increases every year, presumably due to improved diagnostics and enhanced frequency of application for elimination of the cosmetic defect, the commonest complaint in patients with CGPN. Modern diagnostic methods include dermatoscopy, magnetic resonance and genetic studies. CGPN creates a number of problems, such as aesthetic defect, the risk of malignant transformation and impaired social adaptation of children and adolescents. Thus far, there are no generally accepted diagnostic and treatment algorithms for the management of CGPN. This motivates researchers to thoroughly study this problem and develop the necessary diagnostic and treatment protocols.

Key words: giant pigmented nevi, surgical treatment, expander, laser, dermatoscopy, diagnostics, children

MORPHOLOGY OF POSTOPERATIVE ABDOMINAL ADHESIONS
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This review of 39 publications is concerned with general morphological features of postoperative abdominal adhesions. The causes of their formation are considered. Their morphological classification is proposed. Results of experimental and theoretical studies are presented and their use for the choice of treatment modalities is discussed.

Key words: abdominal adhesions, morphology, abdominal surgery

CEREBRAL AIR EMBOLISM IN A NEWBORN BABY
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The echographic study of a newborn baby in the moribund state revealed massive cerebral air embolism and paradoxical embolism of vena cava and renal veins. Three days later, massive intraventricular hemorrhage was visualized. Illustrations and literature review are presented.

Key words: ultrasound diagnostics, newborn infants, cerebral air embolism

ACUTE GASTRECTASIA IN CHILDREN
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Minimally invasive endosurgical and endoscopic procedures including laparoscopic jejunostomy for long-term enteral nutrition were used to treat a child with acute gastrectasia, besides generally accepted medications and intensive therapy.

Key words: acute gastrectasia, laparoscopic jejunostomy
CASE REPORT OF OPEN DIAPHYSEAL FEMUR FRACTURE WITH CLOSED FEMORAL ARTERY DAMAGE IN A CHILD

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We describe the treatment of a child with open diaphyseal femur fracture complicated by contusion, closed injury and thrombosis of the trunk of femoral artery. In order to preserve the limb in the critical period of ischemia reparative surgery was performed including open reposition of bone fragments, extra-cortical metal osteosynthesis, revision of femoral neurovascular bundle, and right femoral artery angioplasty. The period of ischemia lasted 14 hr. In the postoperative period, the patient was treated by combined conservative therapy and staged surgical intervention that allowed to preserve the limb, ensure its normal functioning, and adequate social adaptation of the child.

Ke y  w o r d s: injuries in children, pediatric surgery, skeletal damage, injuries to limb vessels