

Recent Advances in Pediatric Surgery

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Editorial

Pediatric surgery-the surgical care of children from the fetus to adolescent-is a comparatively new surgical specialty, which began shortly after the Second World War. The scope of pediatric surgery may be expressed by the age range of pediatric patients. Nowadays the patients are not just in the period from birth till 14 or 16 years of age – but since 1981 this speciality is involved into a lot of fetal interventions, (fetal and neonatal surgery) and at the other end it extends till all the growth processes are completed that is up to 18 years of age. The scope of pediatric surgery should also be thought of as a collection of diseases or subspecialties where children are treated surgically. Also it would be significant here to mention that though several subspecialties evolved from pediatric surgery eg. cardiac surgery, neurosurgery, orthopaedics, etc. but still this speciality is very integrated and not so much divided in terms of its adult counterpart till date. The part of pediatric surgery which differs from adult type surgery is neonatal surgery. This sub speciality is also most demanding for the surgeon, as well as for the allied corroborating specialists such as the neonatologist and the anesthetist.

Pioneering work during the formative years of the speciality has enabled many lethal congenital malformations to be corrected. The surgical treatment of childhood disease has also progressed enormously.

Recent advances in pediatric surgery have been made in several fields. Hydrocephalus is again being treated by draining the cerebrospinal fluid into either the ureter, the mastoid antrum or the peritoneal cavity. Funnel chest should be corrected surgically. Congenital atresia of the esophagus is best treated by a one-stage operative repair. Patent ductus should be closed. Operations are available for cyanotic children. Intussusception is again being treated by barium enema in selected cases. Megacolon can be benefited by surgical procedures, which now are directed at the distal spastic segment rather than the proximal dilated segment.

Coming to the newer advances of Minimal Access Surgery in pediatrics we can say that the applicability of laparoscopy in pediatric surgery was slower to develop than its adult counterpart. Several factors contributed to this slow evolution. The most important factor was lack of appropriate size instruments which increased risk of visceral injuries, prolonged the operating time and extended the learning curve. Further, reduced postoperative pain, decreased physiological stress and the advantage of smaller incision were underappreciated in children. Despite these multiple hurdles in Minimal Invasive Surgery (MIS) of children the specialty progressed. Currently, the numbers of MIS procedures being performed in the pediatric age group are growing rapidly. Paramount to its success is advances in technology, availability of smaller sized instruments and better training. Also contributory are a good patient safety record, correct clinical application and satisfactory outcomes. Laparoscopy and Thoracoscopy are the commonest MIS procedures performed in various surgical disciplines. The feasibility and safety of a wide spectrum of these procedures in children have been confirmed by numerous studies. Laparoscopic surgery offers many advantages over standard open procedure including better visualization with magnification, faster recovery, reduced postoperative morbidity, less postoperative pain and better cosmesis. Thus, pediatric patients represent a unique group who are likely to benefit from MIS.

The Pediatric Advanced Life Support (PALS) mirrors the ACLS for adults, except that PALS recommends beginning the chest compressions in children with significant bradycardia (<60bpm) and signs of hypoperfusion. Postoperative monitoring of pediatric patients is similar to that of adults except the fact that reunion of the child with the caregiver or parent helps to calm an anxious child and may also aid in management of post-operative drug-induced agitation if any.

Also the application of endoscopic pediatric surgery in the Head and Neck is still untouched possibly again due to the unavailability of exact size of scopes and other surgical equipment. This option definitely needs some finite dedicated research and holds enormous scope in the near future.