Expanding application of robotic surgery in pediatric age group- Our experience

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Objective: To study the feasibility and outcome of robotic minimal access surgery in pediatric age group patients.

Methods: A retrospective study of cases operated using robotic minimal access surgery at Kokilaben Dhirubhai Ambani Hospital, Mumbai from Jan 2017 to Nov 2017 was carried out.

Results: Total 16 cases were operated. There were 13 boys and 3 girls. The age range was 44 days to 12 years, mean age being 4.43 years. Pyeloplasty was done in 7 cases (Left-sided-5, Right-sided-2, Stentless-1, Redo-1). Ureteric reimplantation was done in 4 cases (B/L-2, Left-1, Right -1, Intravesical for VUR -3, Extravesical for ureterocele-1). Fundoplication was done in 2 cases (Indication: GER-1, Hiatus hernia-1). Enteric sparing excision of jejunal duplication cyst was done in one case. A choledochal cyst excision with hepaticoduodenostomy was carried out in one case. Left adrenalectomy was done in a case of chemotherapy-resistant neuroblastoma. Mean console time was 79 min. Docking time average was 13 to 15 min. Mean postoperative hospital stay was 2.88 days. There were no conversions to open surgery. No surgical site infections. No intraoperative or postoperative complications were noted except postoperative prolonged ileus in two cases of pyeloplasty. All patients are on follow up and doing well.

Conclusion: Robotic minimal access surgery is comparable to laparoscopy in terms of outcomes while at the same time it offers better precision, dexterity, magnified 3D definition vision increasing surgeon’s comfort resulting in quicker post-op recovery and shortened patient stay in a hospital. Our experience suggests the immense potential for application of robot-assisted minimal access surgery in pediatric patients thus opening new horizons for expanded application of robotics in children.

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