IS-11
The use of robotics in clinical pediatric surgery

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Purpose: The purpose of this study was to investigate the role of robotics in clinical pediatric surgery.

Methods: From January, 2003 to the present, the Zeus robotic system (Computer Motion, Intuitive Surgical, Sunnyvale, CA, USA) was used in a variety of clinical pediatric surgical cases to determine its usefulness, efficacy and safety. The system was used in patients aging from newborns to 18 years of age. The smallest patient weighed 1.4kg. Cases were assessed for the time of set-up for the robotics, complications and the ability to complete the case robotically.

Results: Neonatal cases included patients with esophageal atresia and tracheo-esophageal fistula, Hirschsprung's disease, pyloric stenosis and other common neonatal conditions. Common pediatric operations such as orchidopexy, appendectomy, cholecystectomy, splenectomy and others were easily carried out with the robotic system. Initially, the set-up time was consumed with figuring out proper positioning of the robotic arms. Once this was established, set-up was rarely more than a few extra minutes. There were no complications due to the use of the robotics and no cases of failure to complete the case using the robotic instrumentation. All cases did extraordinarily well and hospital stays appeared to be shorter.

Conclusions: A first glimpse of the use of robotics in clinical pediatric surgery appears to be very promising. This approach is safe for the patient and allows the surgeon to perform complex tasks with greater ease.