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Laparoscopic Pyloromyotomy for Infantile Hypertrophic Pyloric Stenosis—A Study of 10 Cases

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The authors report their study of laparoscopic pyloromyotomy in 10 infants with infantile hypertrophic pyloric stenosis (IHPS). The average age of the patients was 6.9 weeks, and weight 3.6 kg. Three 3 mm ports were used in each procedure. The average operating time was 30 minutes. Feeding was begun 6 hours postoperatively, and the average postoperative hospital stay was 3.4 days. Laparoscopic pyloromyotomy is a safe procedure for infants with hypertrophic pyloric stenosis.

Key Words : Laparoscopy, pyloromyotomy, infantile hypertrophic pyloric stenosis.

Infantile hypertrophic pyloric stenosis is commonly encountered by pediatric surgeons. The most common procedure followed over the years was the open Ramstedt pyloromyotomy. Open surgery though safe and effective, has its own complications like duodenal mucosal perforation, wound dehiscence, infection and incisional hernia.^{1,3}

The authors report their experience of treating 10 patients of IHPS laparoscopically.

Materials and Methods

Ten patients with IHPS were treated by laparoscop:c pyloromyotomy between March 2001 and February 2002. The diagnosis of hypertrophic pyloric stenosis was established by clinical examination and imaging studies. Contrast studies were done as and when required. All the 10 patients were male, and the average weight was 3.6 kg (2.8 kg – 4.4 kg). Fluid, electrolyte and acid-base imbalances were corrected before surgery.

The procedure is performed with the patient position general under supine in endotracheal anesthesia. Carbon dioxide pneumoperitoneum is created through the Verres needle placed at the umbilicus with an introabdominal pressure of 8-10 mm of Hg. Three 3 mm ports are used, one at the umbilicus for the camera and 2 accessory ports placed in the right and left upper quadrants to allow for manipulation and performing the pyloromyotomy. All the trocars were fixed with silk sutures to prevent them from slipping out of the abdomen. After the diagnosis is confirmed, the first part of the duodenum is stabilized with a Babcock

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forceps placed through the right upper quadrant trocar, and a seromuscular incision is made with the endotome passed through the left upper quadrant port. The incision is placed on the anterosuperior surface and commenced from the duodenal end and extended proximally towards the stomach similar to what is done is open surgery. The incision is kept deep enough so as to accommodate the dissecting forceps so as to spread out the hypertrophied muscle fibers preventing injury to the mucosa. Due to economic restraints, we have not used the The laparoscopic pyloric spreader. anesthesiologist inject air through the infant feeding tube placed in the stomach to check inadvertent mucosal perforation. any Postoperatively, the patients are given clear liquids orally 6 hours after the procedure and once they are tolerated, they are started on feeds.

Results

Laparoscopic Pyloromyotomy was successful in 9 patients. One patient was converted to open pyloromyotomy due to increased peroperative bleeding. There were no technical failures or mucosal perforation. Two children had minor subcutaneous emphysema around the trocar site, which resolved with time.

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There were no respiratory or anesthetic complications. The average operting time was 30 minutes (20 to 50 minutes). The patients were discharged on the third or fourth postoperative day (average 3.4 days) and were asymptomatic and gaining in weight on follow up. The children were followed up 1 and 2 weeks after surgery, and then after 1 month and 3 months respectively. The cosmetic results were excellent. Postoperative hospitalization is short after laparoscopic pyloromyotomy, which on an average is 3.4 days as compares to 5 days or more with conventional surgery. The instances of postoperative vomiting were also less in laparoscopic pyloromyotomy, and were probably due minimal disturbances to the abdominal viscera especially the stomach and the pylorus, which must be delivered outside during open surgery.

Reports from world literature also consider laparoscopic pyloromyotomy as a safe procedure for management of IHPS.^{4,5} Our early experience of treating patients of IHPS has been encouraging. However, differences between open surgery and laparoscopy could be established only after a randomized controled study on a large number of patients.

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