بسم الله الرحمن الرحيم

laparoscopy in Children

introduction

- **In the 1990s, the leaders in pediatric minimally invasive surgery began performing laparoscopic procedures, such as cholecystectomy and appendectomy.**

introduction

- **These procedures were first performed in older children due to limitations of equipment, but over time manufacturers began making shorter and smaller instruments so that minimally invasive surgery could be performed on even the smallest infants .**

introduction

- **First laparoscopic appendectomy was done in a child in 1991. then, Laparoscopic pyleromyotomy, Laparoscopic spleenectomy and cholecystectomy .**
- **Laparoscopic management of adhesive bowel obstruction in children is feasible and safe in experienced hands.**

- **Early management saves the child a great deal of discomfort and allows a quick recovery with early discharge.**
- **Laparoscopy is successful in release fine, flimsy adhesions that developed early after surgery.**

- **The use of advanced laparoscopic techniques for Hirschsprung's disease is now used by many pediatric surgeons.**
- **All three of the primary operations have now been performed using laparoscopic techniques.**

Hirschsprung's disease

- **Hirschsprung's disease is a disorder of the neuroenteric pathways within the distal large bowel that prevents bowel relaxation, resulting in a functional distal bowel obstruction.**

Hirschsprung's disease

- **Hirschsprung's disease is not an acquired disease as the name suggests, but rather is a congenital absence of neuroganglion cells from the distal intestine that affects 1 in 4500-7000 newborns. Hirschsprung's disease is more common in white infants and affects males 4 times more frequently than females .**

Diagnosis

- **Diagnosis of Hirschsprung, s disease is suggested by contrast enema and confirmed by rectal biopsy. If Hirschsprung, s disease is suggested, perform a contrast enema.**
- **Older children with Hirschsprung, s disease show a characteristic transition zone between narrow-caliber aganglionic bowel and dilated upstream normally ganglionated bowel.**
- **A distinct transition zone is often difficult to observe in newborns .**

Hirschsprung, s disease in a 6-month-old infant gastrograghin study

Surgical treatment

- In 1948,**Swenson** performed the first operation for definitive treatment of Hirschsprung's disease and reported on 50 cases.
- Two subsequent open procedures – the **Soave** and the **Duhamel** – are commonly performed today.
- These procedures were initially staged (diverting colostomy first) and then second-stage procedure through a left lower abdominal incision with a transanal anastomosis .

The Soave or endorectal pull-through

- **This procedure consists of removing the mucosa (the lining) of the rectum and pulling ganglionic bowel through a short aganglionic muscular cuff.**
- **By remaining within the muscular cuff of the aganglionic segment, important sensory fibers and the function of the internal sphincter are preserved.**

Recent trends in surgery for Hirschsprung's disease

- **Recent trends in surgery for Hirschsprung's disease have been toward earlier repair and fewer surgical stages.**
- **A one-stage pull-through for Hirschsprung's disease avoids the additional anesthesia, surgery, and complications of a colostomy.**
- **Laparoscopic-assisted approach diminishes surgical trauma to the peritoneal cavity In Young child .**

PRIMARY PULL-THROUGH FOR HIRSCHSPRUNG'S DISEASE

- **As originally described, all three of the operations listed above are performed after first creating a colostomy when the diagnosis of Hirschsprung's disease is made. The pull-through is usually performed sometime in the first year of life.**

- **A primary pull-through without colostomy is now offered to many patients if the child is appropriate for the operation. The operation has been done using all three of the major techniques.**

A one-stage pull-through

- **A one-stage pull-through for Hirschsprung's disease avoids the additional anesthesia, surgery, and complications of a colostomy.**

- **A one-stage pull-through should be done in selected patients, with a transition zone in the sigmoid colon or rectum .**

LAPAROSCOPIC AND TRANSANAL APPROACHES TO HIRSCHSPRUNG'S DISEASE

laparoscopic pull-through procedure

- In 1995, (Georgeson KE, Fuenfer MM, Hardin WD) Alabama at Birmingham the first 1-stage laparoscopic pull-through procedure was reported.

- Raffensperger published the first report of a Swenson procedure performed laparoscopically at Children's Memorial Hospital in 1996 .

laparoscopic pull-through procedure

- **Georgeson, et al, 1999, division of pediatric surgery, University of Alabama at Birmingham have the largest report of the laparoscopic assisted endorectal (Soave) pull-through to date with 80 patients .(Video Film).**

- **The use of advanced laparoscopic techniques for Hirschsprung's disease is now used by many pediatric surgeons. All three of the primary operations have now been performed using laparoscopic techniques.**

- **The transanal approach is best used only in children with a transition zone in the sigmoid colon or rectum.**

laparoscopic assisted endorectal (Soave)

- **The technique uses four small abdominal ports. The transition zone is initially identified by seromuscular biopsies obtained laparoscopically.**
- **A colon pedicle preserving the marginal artery is fashioned endoscopically. The rectal mobilization is performed transanally using an endorectal sleeve technique.**
- **The anastomosis is performed transanally 1 cm above the dentate line .**

CONCLUSION

- **Laparoscopic-assisted colon pull-through appears to reduce postoperative complications and postoperative recovery time dramatically.**
- **The technique is quickly learned and has been performed in multiple centers with consistently good results.**

CONCLUSION

- **Laparoscopy is successful in release fine, flimsy adhesions that developed early after surgery.**
- **Early management saves the child a great deal of discomfort and allows a quick recovery with early discharge.**

thank you