

LAPAROSCOPIC EVALUATION IN INCARCERATED GROIN HERNIA FOLLOWING SPONTANEOUS REDUCTION

B. Haluk GÜVENÇ, MD*, Melih TUGAY, MD*

ABSTRACT

The authors report their initial experience of diagnostic laparoscopy in a baby presenting with small bowel obstruction secondary to strangulated groin hernia. Laparoscopy was accomplished through ipsilateral hernia sac to determine the viability of the incarcerated bowel segment under general anesthesia, following spontaneous reduction under general anesthesia. Diagnostic laparoscopy showed edematous intestinal segments but no sign of necrotic bowel or indirect findings of intestinal perforation. Diagnostic laparoscopy may be useful in selected cases preventing an unnecessary laparotomy.

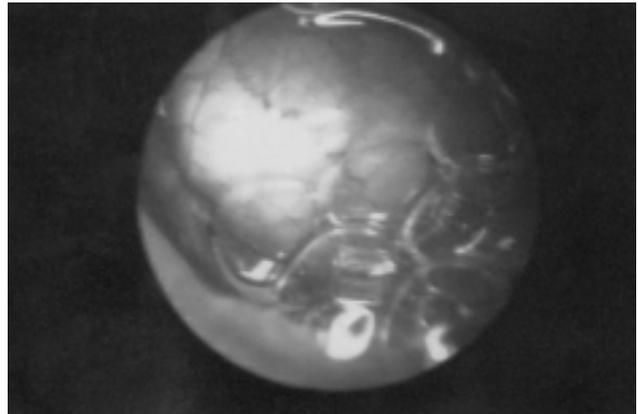
Key words: Inguinal hernia, incarceration, laparoscopy, children

PATIENT DESCRIPTION

A three-months-old male baby was admitted to our clinic with over 24 hours history and clinical picture of a strangulated inguinal hernia. Patient presented with bilious vomiting, abdominal distension, restlessness and a painful mass on the right inguinoscrotal region. A plain abdominal film revealed dilated bowel loops with air-fluid levels. The patient was taken to the operating room, following an unsuccessful manual reduction attempt. A spontaneous reduction, however, occurred during induction of general anesthesia. Diagnostic laparoscopy was considered necessary regarding the clinical picture of the case and the possible presence of ischemic bowel. Laparoscopy was performed through the ipsilateral hernia sac using a 5 mm 30 degree scope. Abdomen was insufflated with CO₂ up to 10 mm Hg. Vision was of poor quality because of the excessive amount of free intraperitoneal fluid. The intestinal segments were generally edematous but there was no sign of ischemic bowel or indirect findings of perforation (Picture 1). A routine herniorrhaphy was performed. We did not detect any complications or recurrence during a twenty months follow-up.

DISCUSSION

Incarceration is a life threatening complication of the inguinal hernia. Some irreducible inguinal hernias may rapidly progress to strangulation with infarction of the hernia contents in children.¹ An attempt of manual reduction is necessary in strangulated cases. The patient is usually



Picture 1. Edematous bowel segment and excessive clear peritoneal fluid seen through the scope

hospitalized following a successful reduction procedure to observe the outcome of the clinical picture. Operation is mandatory in the irreducible cases. The suspect non-viable hernia content may confront the surgeon to make a decision between primary exploration of the inguinal region or the abdomen in such cases.² If the incarcerated bowel is viable, inguinal exploration is sufficient in most of the cases. Conversion to open exploration may sometimes be necessary in the presence of necrotic bowel and cloudy or bloody peritoneal fluid. In an occasional case after the inguinal exploration, bowel ischemia or necrosis may be seen even if the peritoneal fluid is clear.³ Spontaneous reduction during induction of general anesthesia, in an otherwise manually irreducible

incarcerated hernia, is another dilemma. The need for an emergency abdominal exploration following manual reduction or inguinal approach is under dispute since the strangulated abdominal viscera may not recover as expected in some patients which present with clinical deterioration.

Intra-extraabdominal laparoendoscopic inguinal herniorrhaphy is performed in large numbers in general surgical practice. There are also a few articles reporting pure laparoscopic approach and repair of incarcerated inguinal hernias and authors advocate primary laparoscopic reduction in their series.^{4,5}

Laparoscopic exploration through ipsilateral hernia sac might be useful in strangulated hernia. According to our knowledge this case is the first report of laparoscopic evaluation of an incarcerated inguinal hernia presenting with

spontaneous reduction in children. Further experience is required in similar cases to conclude whether laparoscopy may be useful in diagnosing bowel ischemia. Blurred vision by excessive amount of free peritoneal fluid, edematous intestinal loops and intricate cannulation of the fragile hernia sac are technical difficulties confronted during laparoscopy in strangulated hernia. Drainage of the fluid may be helpful in increasing the quality of vision before starting laparoscopy. An improved vision might be obtained through an umbilical port with the aid of an additional grasper, which may be of help in better handling of the edematous intestines. As conclusion, laparoscopy may prevent a second operation due to an undiagnosed ischemic bowel, following spontaneous reduction during induction of anesthesia in an incarcerated inguinal hernia.

REFERENCES

1. Stylianos S, Jacir NN, Harris BH. Incarceration of inguinal hernia in infants prior to elective repair. *J Pediatr Surg.* 1993; 28:582-583.
2. Moss RL, Hatch EI. Inguinal hernia repair in early infancy. *Am J Surg.* 1991; 161:596-599.
3. Ashcraft KW, Murphy JP, Sharp RJ, et al. Groin Hernias and Hydroceles. In: Weber TR, Tracy TF, eds. *Pediatric Surgery.* 3rd ed. Philadelphia: WB Saunders; 2000: pp.654-662.
4. Birk D, Formentini A, Poch B, et al. The value of intraoperative laparoscopic examination of the contralateral inguinal ring during hernia repair in children. *J Laparoendosc Adv Surg Tech A.* 1998; 8:373-379.
5. Lin E, Wear K, Tiszenkel HI. Planned reduction of incarcerated groin hernias with hernia sac laparoscopy. *Surg Endosc.* 2002; 16:936-938.

*Kocaeli University Medical Faculty, Department of Pediatric Surgery

Corresponding Author: B. Haluk Güvenç, MD

Kocaeli University Medical Faculty, Department of Pediatric Surgery, Derince, 41900, Kocaeli , Türkiye

E-mail: guvench@superonline.com