ปัจจัยที่มีผลต่อการรักษาโรคลำไส้กลืนกัน ในโรงพยาบาลเชียงรายประชานุเคราะห์

สุธีรา กังวานใจ, พบ.
กลุ่มงานรังสีวิทยา
โรงพยาบาลเชียงรายประชานุเคราะห์

บทคัดย่อ

โรคลำไส้กลืนกันเป็นโรคที่ผู้ป่วยจะมาด้วยอาการปวดท้องเฉียบพลัน การรักษามีทั้งการสวนทวารหนักโดยใช้แรงดันหรือการผ่าตัด การศึกษานี้เป็นการทบทวนเพื่อประเมินปัจจัยที่มีต่อผลของการรักษาโดยการสวนแป้งทางทวารหนักและเพื่อทบทวนข้อมูลอื่นที่พบในผู้ป่วยโรคลำไส้กลืนกันในโรงพยาบาลเชียงรายประชานุเคราะห์ การศึกษานี้เป็นการศึกษาย้อนหลังจากแฟ้มประวัติของผู้ป่วยลำไส้กลืนกันจำนวน 25 คน ที่เข้ารับการรักษาที่กลุ่มงานรังสีวิทยาในช่วง 1 มกราคม 2545 ถึง 31 ธันวาคม 2549 โดยเก็บข้อมูล อายุ เพศ อาการและอาการแสดง ระยะเวลาที่มีอาการก่อนได้รับการรักษา วิธีการวินิจฉัยและวิธีการรักษา พบว่าผู้ป่วยอยู่ในช่วงอายุ 4 เดือนถึง 6 ปี ผู้ป่วยส่วนใหญ่ได้รับการวินิจฉัยโดยอัลตร้าซาวด์แล้วรักษาต่อด้วยการสวนแป้งทางทวารหนัก ผู้ป่วยส่วนน้อยที่ทำการสวนแป้งทางทวารหนักเพื่อวินิจฉัยและรักษาไปพร้อมกัน การศึกษาพบว่าการสวนแป้งทางทวารหนักสามารถรักษาลำไส้กลืนกันได้สำเร็จเพียง 42 เปอร์เซ็นต์ โดยพบว่าโอกาสสำเร็จสูงในผู้ป่วยที่มีอาการมาน้อยกว่า 24 ชั่วโมง โอกาสล้มเหลวมากขึ้นชัดเจนในผู้ป่วยที่มีอาการมามากกว่า 48 ชั่วโมง และพบว่าผู้ป่วยที่มีอาการมามากกว่า 72 ชั่วโมงมีแนวโน้มที่จะถูกผ่าตัดเพื่อตัดต่อลำไส้มากขึ้น โดยสรุประยะเวลาที่มีอาการก่อนได้รับการรักษามีผลโดยตรงกับผลการรักษาโดยการสวนแป้งทางทวารหนักและความเสี่ยงต่อการผ่าตัดที่ซับซ้อนขึ้น

คำสำคัญ : ลำไส้กลืนกัน, ปัจจัยที่มีผลต่อการรักษา, การสวนแป้งทางทวารหนัก

Intussusception in Chiangrai hospital : Factors associated with outcome. A 5-year Review

Suteera Kungwanchai, MD.

Department of radiology, Chiangrai hospital

Abstract

Intussusception is one of the most common abdominal emergency in infants and young children. The purpose of this review was to assess the factors associated with outcome of nonsurgical management and to report the other concerned data of intussusception cases in Chiangrai hospital. A retrospective chart review of all intussusception cases seen at Department of Radiology, Chiangrai hospital over a 5-year period (1 January 2002 to 31 December 2006) was conducted. Age, sex, clinical presentation, duration of symptoms before nonsurgical management, methods of definite diagnosis and methods of treatment were recorded. There were twenty-four cases of intussusception with age between 4 months to 6 years. Most of patients were diagnosed by sonography (16/24, 67%) before underwent barium reduction. The others were diagnosed and promptly reduced with barium enema. Successful rate of barium reduction was 42% (10/24). Successful reduction rate in cases of duration of symptoms less than 24 hours was 100%. High failure rate of barium reduction (86%) was found in cases of duration more than 48 hours. In fourteen irreducible cases, eleven patients underwent explore laparotomy for manual reduction and appendectomy, three patients with duration of symptoms more than 72 hours underwent bowel resection. The duration of symptoms directly associated with increases rate of failure reduction and complicated surgery.

Key words : Intussusception, factors associated with outcome, nonsurgical management

INTRODUCTION

Intussusception is one of the common causes of acute abdomen in infancy and children. It is usually idiopathic when it occurs in children between 6 months and 2 years of age. The vast majority of childhood cases of intussusception are ileocolic. The classical clinical triad of intussusception is consistent with acute abdominal pain, currant jelly stool (bloody-mucous diarrhea) and palpable abdominal mass. In the past, intussusception was a severe condition with high morbidity and mortality rates. Currently, prompt diagnosis and effective treatment lead to a fovorable outcome in most cases. Nonsurgical management of intussusception (eg. hydrostatic reduction, pneumatic reduction, ultrasound-guided reduction) is less invasive, less morbidity, shorter length of hospital stay and more cost-effective than surgical management. The aim of treatment is, therefore, to manage the greatest number of intussusceptions with nonsurgical reduction as possible. The purpose of this review is to assess the factors associated with outcome of nonsurgical management of intussususception and to report the other concerned data of intussusception cases in Chiangrai hospital.

MATERIALS AND METHODS

From 1 January 2002 to 31 December 2006, twenty-four cases of children with intussusception were seen in Department of Radiology, Chiangrai hospital. The admission charts of these cases were retrospective reviewed. Age, sex, month of presentation, signs and symptoms, duration of symptoms before nonsurgical treatment, methods of diagnosis, method of treatment and duration of admission were recorded. The association between suscessful reduction rate with age, clinical signs and symptoms, and duration of symptoms before nonsurgical treatment was assessed.

RESULTS

There were twenty-four children diagnosed to have bowel intussusception with age between 4 months to 6 years. The average age was 11 months. Most cases were between 6 months to one year of age (16/24, 67%). Seventy percent of cases were boys (Table1).

Table 1. Association between age and sex with successful reduction

		No (%) of cases	No. (%) of successful enemas
Age	- Less than 6 mo	5 (20.5)	2 (40)
	- 6 mo- 12 mo	16 (67)	7 (43)
	- 12 mo-18 mo	0	-
	- more than 18 mo.	3 (12.5)	1 (33)
Sex	- boys	17 (70)	6 (35)
	- girls	7 (30)	4 (57)

All of the patients had bloody stool, 83% (20/24) had vomiting, and 50% (12/24) had palpated abdominal mass. The duration of symptoms before treatment was less than 24 hours in 21% (5/24), between 24 hours-48 hours in 50% (12/24) and more than 48 hours in 29% (7/24) of cases. Diagnostic imaging procedures were sonography or barium enema based on individual experience of radiologists. Most of patients were diagnosed by sonography (16/24, 67%) before underwent barium reduction. The others were diagnosed and promptly reduced with barium enema. Overall successful rate of barium reduction was 42% (10/24). High successful reduction rate (100%) in cases with duration of symptoms less than 24 hours and low successful rate (14%) in cases with duration more than 48 hours were observed. Immediate surgery was required in case of irreducible intussusception by enema. In fourteen irreducible cases, eleven patients underwent explore laparotomy for manual reduction and appendectomy and three patients with duration of symptoms more than 72 hours underwent bowel resection. Two cases with duration of 5 days and 10 days, respectively, underwent hemicolectomy. Colonic polyp was found as lead point in one case. Small colonic perforation and minimal barium leakage was occur in operative field in one case. No mortality was observed in this review.

Table 2. Association of clinical presentations with successful reduction

Clinical presentations		No. (%) of cases	No. (%) of successful reduction
Duration of symptoms	- less than 24 hrs.	5 (21)	5 (100)
before nonsurgical	- 24 hrs.-48 hrs.	12 (50)	4 (33)
treatment	- more than 48 hrs.	7 (29)	1 (14)
Bloody stool or	- Absent	0	-
rectal bleeding	- Present	24	10 (42)
Palpable abdominal	- Absent	12	5 (42)
mass	- Present	12	5 (42)
Neusea and vomitting	- Absent	4	3 (75)
	- Present	20	7 (35)
Abdominal pain	- Absent	0	-
	- Present	24	10

DISCUSSION

Nonsurgical enema technique of intussusception reduction has major advantage of reducing invasiveness, morbidity, costs and length of hospital stay. Anesthesia and surgery are not without their risks, and handling of bowel during attempted manual reduction may also tear the serosa and mucosa. The aim of the enema reduction is, therefore, to obviate the need for surgery in the greatest number of children with intussusception as possible.[1]

High failure rate of reduction (52%) found in this review could be the stimulus for clinicians and radiologists to take more concerns about factors that influence of the failure reduction rate. We found that the factor directly associated with failure rate was duration of symptoms before reduction. With duration more than 24 hours, singificantly increased failure reduction rate was observed. With duration more than 72 hours, risk of complicated surgery is increased. In three surgical cases with duration more than 72 hours, one patient underwent short segment of bowel resection and two patients underwent hemicolectomy. It can be concluded that early diagnosis and early reduction procedure increase successful reduction rate and decrease risk of complication in surgical case.

Some symptoms and signs that could be the concerned factors were rectal bleeding, vomiting and palpable mass. In 1993, Katz et al. reported significantly increase successful reduction rate in the intussusception cases without rectal bleeding [2]. In my review, all of cases already had bloody stool or rectal bleeding before nonsurgical reduction, this may decrease successfule rate. If the clinical diagnosis was made earlier before rectal bleeding occurs, the outcome might be better.

The vomiting could represent severity of bowel obstruction. In this review, the patient without vomiting before barium reduction has more successful reduction rate than the patients with vomiting. Palpable abdominal mass was found only 50% of cases and it was not associated with the outcome of reduction rate. The case without palpated mass could be due to abdominal distension and may be varied due to experience of clinicians.

Incidence of intussusception was similar to previous reports in the literatures[2,3,4] that it is common in boys and children between six months to two years of age. In three cases with more than two years of age (two years, two years and eight months, five years and ten months), the diagnosis was delayed because the clinician might concerned of other diseases rather than intussusception. In this age group, failure reduction rate was also high (77%).

The technique of reduction is based on experiences of radiologists. At Department of Radiology, Chiangrai hospital, all radiologists usually use barium enema with "rule of threes" as a standard technique. Some details about techniques such as duration between attempts or use of sedation may be varied individually. It has always been considered standard practice that immediate surgery is required if an intussusception is irreducible by enema. In this study, eleven out of fourteen irreducible cases underwent explore laparotomy for manual reduction. There were some children easily reduced manually at surgery. Interestingly, if the radiologist modify techniques and take more aggressive approach. So that surgery is only require for those who have necrotic intussusceptions or those that are difficult to reduce at surgery.

No perforation of bowel during enema reduction was found. Only one case developed small perforation with minimal barium leakage during intraoperative manual reduction and the patient underwent hemicolectomy. This patient had duration of symptoms about 10 days before being diagnosed of intussusception. In fact, this case should go directly to surgery. Fortunately that perforation did not occur during enema reduction.

At some institutions, there are criteria used for patient selection(age, duration of symptoms, hematochezia, dehydration, obstruction of small bowel and visualization of dissection sign during

enema therapy) with a scoring system to quantify the risk and determine whether immediate surgery or nonsurgical reduction should be performed.[5,6,7] Some institutions use doppler color ultrasound to assess necrotic area of bowel[8,9] and some use grey-scale ultrasound to assess thickness of bowel wall to predict success rate of reduction.[10,11] It's quite interesting, in the future, if we use criteria for patient selection and have available dopplor color ultrasound in Chiangrai hospital, we may be able to perform more aggressive reduction with confidence of low risk of perforation.

There is a trend toward performing enema therapy with agents other than barium (eg. water-soluble agents, air, saline solution) because other agents will not persist in the peritoneal cavity if perforation occurs. Use of ultrasound guidance eliminated the disadvantage of radiation exposure.

CONCLUSION

Duration of symptoms before reduction directly influences successful rate of nonsurgical reduction other than technique of reduction. Early diagnosis and prompt treatment can result of good outcome.

ACKNOWLEDGEMENTS

I thank Pailin Lerttumnongtum, MD, Department of Radiology, Faculty of medicine, Chiangmai university, for the revision of the manuscript.

REFERENCES

1. Daneman A, Alton DJ. Intussusception: issues and controversies related to diagnosis and reduction. Radiol Clin North Am 1996 July;34(4):743-56
2. Katz M, Phelan E, Carlin JB, Beasley SW. Gas enema for the reduction of intussusception: relationship between clinical signs and symptoms and outcome. AJR Am J Roentgenol 1993;160:363-6
3. Shiels II WE, Maves CK, Hedlund GL, Kirks DR. Air enema for diagnosis and reduction of intussusception: clinical experience and pressure correlates. Radiology 1991;181:169-72
4. Carneiro PM, Kisusi DM. Intussusception in children seen at Muhimbili National Hospital, Dar es Salaam. East Afr Med J 2004 Sep;81990:439-42
5. Guo JZ, Ma XY, Zhou QH. Results of air pressure enema reduction of intussusception: 6,396 cases in 13 years. J Pediatr Surg 1986;21:1201-3
6. Zheng JY, Frush DP, Guo JZ. Review of pneumatic reduction of intussusception: evolution not revolution. J Pediatr Surg 1994;29:93-7
7. Reijnen JAM, Festen C, van Roosmalen. Intussusception: factors related to treatment. Arch Dis Child 1990;65:871-3
8. Lam AH, Firman K. Value of sonography included color doppler in the diagnosis and management of long standing intussusception. Pediatr Gastroenterol Nutr 1989;8:343-7
9. Lim HK, Bae SH, Lee KH, et al. Assessment of reducibility of ileocolic intussusception in chidren: usefulness of colour doppler sonography. Radiology 1994;191:781-5
10. Pracos JP, Tran-Minh VA, Morin DE, et al. Acute intestinal intussusception in children: contribution of ultrasonography (145 cases). Ann Radiol 1987;30:525-30
11. Lee HC, Yeh HJ, Leu YJ. Intussusception: the sonographic diagnosis and its value. J Pediatr Gastroenterol Nutr 1989;8:243-7