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A cross-sectional study to know the results of intestinal obstruction surgery in children in Iraq

Hawkar A. Kayyat[1], Tareq Jawad kadem Al-Rubayee[2], Siamand Yahya Salim[3], Rifaat Hassan Ali[4], Ali Tariq Thanoon Yahya[5], Ali Qais Abdulkafi[6], Abbas AbdulWahhab Jumaah[7]

[1]M.B.Ch.B. \ F.I.B.M.S. \ (Pediatric Surgery), Ministry of Higher Education and Scientific Research, Kurdistan Region, Hawler Medical, University, Erbil, Iraq

[2]M.B.Ch.B. \ M.R.C.S. \ Ireland, Diploma General Surgery, Ministry of Higher Education and Scientific Research, AL-Rasheed University College, Department of Pharmacy, Baghdad, Iraq.

[3]M.B.Ch.B. \ N.B.P.T. \ D.Ch. \ P.E.D. (Hematology), Hawler Medical University College of Medicine

[4]M.B.Ch.B. \ High Diploma \ (Pediatric Surgery), Iraqi Ministry of Health, Kirkuk Health Department, Maternity and Pediatric Hospital, Kirkuk, Iraq.

[5]M.B.Ch.B., CABP, MRCPCH (UK), Senior Lecturer/ Specialist pediatrician, Department of Pediatrics at COMHS/National University of Science and Technology/Rustaq, general hospital, Oman

[6]M.B.Ch.B. \ D.C.H. \ (Pediatrics),Iraqi Ministry of Health, Kirkuk Health Department, Kirkuk General Hospital, Kirkuk, Iraq.

[7]Department of Applied Embryology, High Institute for Infertility Diagnosis and Assisted, Reproductive Technologies, Nahrain University, Kadhimiya, Baghdad, Iraq.

***Corresponding author**: Abbas AbdulWahhab Jumaah , Department of Applied Embryology, High Institute for Infertility Diagnosis and Assisted, Reproductive Technologies, Nahrain University, Kadhimiya, Baghdad, Iraq, Email: Abbasabdalwahab@ierit.nahrainuniv.edu.iq

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ABSTRACT

This paper aims to know the results of intestinal obstruction surgery in children in Iraq and. In this research was recruited included 60 patients from Iraqi pediatric patients in different hospitals in Iraq with ages from one month and fifteen years with the period year 2020-2021 analyzed data and demographic results according to using Excel and SPSS programs in addition to the (Epi Info TM) program. The results were found in this paper 60 patients collected with ages from one month to 15 months; patients were distributed according to sex (for 34 Boys with, 56.67% - Girls for, 26 patients with, 43.33%, In this study,

causes of Intestinal Obstruction were identified and were the most prevalent were Inguinoscrotal hernia for 22 patients with 36.67%, Intussusception for 19 patients with 31.67%, Umbilical Hernia for 11 with 18.33%, Hypertrophic pyloric stenosis for eight patients with 13.33%. As, Postoperative complications were studied, and the most prevalent among children was the surgical infection for 18 patients with 30% followed by small bowel fistula for 15 patients with 25%. In conclusion, bowel obstruction is more prevalent and affects newborns as a result of postoperative complications. Intussusception is the most common cause affecting infants and children from other complications

Keywords: *cross, intenstional, children, sectional.*

INTRODUCTION

One of the most common acute abdominal conditions in children is complete or incomplete bowel obstruction, which constitutes between 20-35% of emergency admissions to surgical areas of the hospital. It makes up about 20% of hospital surgical emergencies. For primary care, the most common is finding incomplete obstructions (passing gas, not stool), which in some cases end up being complete. [1,2,3]

A substantial mechanical disruption or full halt of the passage of materials through the gut caused by a condition that develops a blockage in the intestine is referred to as intestinal obstruction. Cramping discomfort, vomiting, constipation, and a lack of gas are the symptoms. The diagnosis is clinical, and an X-ray of the abdomen confirms it. In most cases of full blockage, treatment includes fluid replacement, nasogastric suctioning, and surgery. Twisting, a torsion of the intestine on its axis or on the mesentery for which there are often predisposing conditions, is the most prevalent cause of mechanical blockage in our peripheral (lips, tumors, etc.) It is common in children and nearly invariably affects the ileum. [4,5,6,7]

When food and liquids cannot pass through the digestive tract due to a blockage, this is known as intestinal obstruction. It is also known as bowel blockage, gastrointestinal obstruction, or bowel obstruction. Many factors can contribute to intestinal blockage. It is more likely in patients who have particular types of cancer or who have advanced cancer.

According to the Canadian research, bowel obstruction in newborns and young children is frequently caused by a birth defect, a solid mass of intestinal contents (meconium plug syndrome), a twisted intestinal loop (tosthia), or a narrowing or missing segment of the intestine. Bowel obstruction (intestinal atresia) or engulfment of one section of the gut by another (intussusception or intussusception). [8,9,10,11]

Adults are most commonly affected by adhesions, which are collections of scar tissue from past abdominal operations, sections of the intestine that protrude through an irregular aperture (hernia), and malignancies. Depending on where portion of the intestine is afflicted, the chance of each specific cause occurring varies. [12]

Pancreatic cancer, pathologic scarring from ulcers, or Crohn's disease can all cause obstruction of the initial segment of the small intestine (duodenum). Other portions of the gut can be obstructed by a gallstone, an undigested lump of food, or the presence of parasitic worms in rare circumstances. Cancer, diverticulitis, or a hard mass of feces are the most common causes of large intestine obstruction (fecal impaction). Large bowel blockage is more commonly caused by adhesions and volvulus. [13]

An intestinal blockage can develop in either the small or large intestine (small bowel obstruction) (large bowel obstruction). Because of the blockage, some or all of the food and liquids that circulate through the digestive system are unable to pass.

Intestinal blockages can occur as a result of anything within the digestive system clogging the gut or as a result of something outside the digestive system pressing on the intestine, causing it to constrict. [14]

In newborns, intestinal blockage produces physical symptoms such as vomiting and nausea. Severe abdominal pain (abdomen) Peristalsis, or contractions that propel food through the digestive tract, causes crampy discomfort. Peristaltic contractions create visible waves of movement in the belly. Swelling A sensation that food is becoming trapped in the digestive tract, as well as an inability to pass stools (constipation) or pass gas. Changes in secretory absorption over the region of blockage that occur during intestinal obstruction as a result of the existing obstruction to fluid and gas buildup. Furthermore, total blockage results in severe constipation, whereas partial obstruction results in diarrhea. When a person suffocates, the agony becomes acute and long-lasting. [15]

PATIENTS AND METHODS

A cross-sectional study was implemented to find out the results of bowel obstruction surgery in children, as it was conducted on Iraqi pediatric patients in Baghdad hospitals in the year 2020-2021. The data of the study included 60 patients between the ages of one month and fifteen years under the age of 15 years, using Excel and SPSS programs in addition to the (Epi Info TM) program, where statistics were applied to evaluate patients before and after surgery by evaluating the results of mortality and resulting complications. After surgery for all 60 patients.

The demographic table shows the analytical data of pediatric patients regarding age, gender, economic and educational level of the parents, and clinical manifestations (flatulence, vomiting, constipation, abdominal pain) as shown in Table 1.

Table 2 presented the causes of bowel obstruction, including hypertrophic pyloric stenosis, inguinal-scrotal hernia, Umbilical hernia, intussusception.

To follow up, the study explained the type of surgical procedure where intussusception, adhesiolysis, intussusception, small bowel resection, and right hemirectomy are performed as shown in Table 3. Table 4 shows the postoperative complications of pediatric patients, which included abdominal burst, Basal atelectasis, intestinal tuberculosis, small bowel fistula. Table 4 explains the postoperative complications of Iraqi pediatric patients, including flatulence, fundus atelectasis, intestinal tuberculosis, small bowel fistula, and wound infection.

This study presents the mortality rate of pediatric patients, and the fatal outcome for all 60 patients, including four deaths and their outcomes (severe malnutrition, cardiac arrest, and intestinal tuberculosis) as shown in Figure 1. In addition, the table shows 5 Logistic analysis of risk criteria affected by Iraqi children with regard to constipation, abdominal pain, small bowel fistula, scrotal hernia, intussusception, and wound infection.

Ethical and scientific rules have been considered to collect patient demographic data and information that are based on internationally accepted guidelines to preserve the rights, safety and health of patients participating in this study. The autonomy of the patient and consent to provide the requested information as well as the confidentiality of personal data were also respected. To protect the rights, safety, and health of patients participating in this study, ethical and scientific norms for collecting patient demographic data and information based on globally accepted guidelines have been examined. The patient's autonomy, consent to supply the information needed, and the confidentiality of personal data were all honored.

RESULTS

This study was carried out on 60 cases of intestinal obstruction patients, as this study included males and females for ages under 15 years in Baghdad hospitals, Iraq, where the study period was 2020-2021, as it included pediatric patients under the age of 15. In this study, Characteristics demographic results of children patients were conducted, where ages under one year are more affected than over one year, where (33.33%) 20 patients with ages 6-12 months and 14 (23.33%) patients. Accordingly, boys were more affected by bowel obstruction than girls, as the number of cases included boys 34 (56.67%) and girls 26 (43.33%). In addition, the clinical features showed a high incidence of Abdominal distension by 21 (35.00%) and Abdominal Pain by 18 with (30.00%) as shown in Table 1.

TABLE 1: Characteristics demographic results of Children patients.

Variables	Patients (N=60)	%
Age		
0-5 months	14	23.33%
6-12 months	20	33.33%
1-5 years	11	18.33%
5-10 years	8	13.33%
11-15 years	7	11.67%
Sex, %		
Boys	34	56.67%
Girls	26	43.33%
Economic Level for Parents		
Low	16	26.67%
Middle	26	43.33%
High	18	30.00%
Educational Level for Parents		
Low	14	23.33%
Middle	27	45.00%
High	19	31.67%
Clinical Features		
Vomiting	12	20.00%
Abdominal distension	21	35.00%
Constipation	9	15.00%
Abdominal Pain	18	30.00%

The causes of bowel obstruction constituted a large percentage of the pathological cases, as it is Inguinoscrotal hernia 22 (36.67%) and Intussusception 19 (31.67%), as shown in Table 2.

TABLE 2: Causes of Intestinal Obstruction

Parameters	Number of Patients (60)	%
Hypertrophic pyloric stenosis	8	13.33%
Inguinoscrotal hernia	22	36.67%
Umbilical Hernia	11	18.33%
Intussusception	19	31.67%

TABLE 3: The type of surgical procedure

Parameters	Number of Patients (60)	%
Duction of intussusception	9	15.00%
Adhesiolysis	11	18.33%
Duction of intussusception	20	33.33%
Resection of the small intestine	7	11.67%
Colostomy	13	21.67%

TABLE 4: Postoperative complications.

Variables	Number of Patients (60)	%
Burst abdomen	7	11.67%
Basal atelectasis	11	18.33%
Intestinal tuberculosis	9	15%
Small bowel fistula	15	25%
Wound infection	18	30%

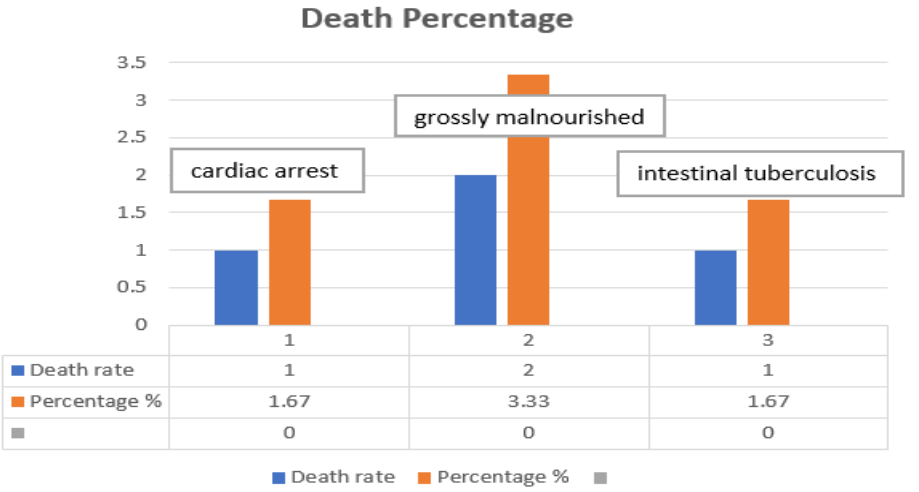

FIGURE 1: Death percentage of Iraqi children.

TABLE 5: Logistics Analysis of risk parameters affected on the Iraqi children.

Parameters	Number of Patients (60)	P-value
Age		
0-5 months	1.8(1.23-1.9)	0.02
6-12 months	1.66(1.27-1.95)	0.034
1-5 years	1.32(0.87-1.67)	0.075
5-10 years	1.36(0.54-1.44)	0.083
Constipation	0.73(0.67-1.3)	0.67
Abdominal Pain	1.1(0.76-1.4)	0.86
Small bowel fistula	1.79(0.88-2.96)	0.001
Inguinoscrotal hernia	1.22(0.88-1.66)	0.077
Intussusception	2.66(1.9-5.5)	<0.001
Wound infection	1.77(0.9-2.8)	0.022

DISCUSSION

Intestinal obstruction is a frequent surgical condition in children, affecting children of all ages. It can be acute or chronic in young children. Intestinal obstruction affects newborn patients, as the maximum incidence of intestinal obstruction is in children whose age is less than one year. This study showed that most of the bowel obstruction included ages under 15, hypertrophic pyloric stenosis, inguinoscrotal hernia, umbilical hernia, intussusception, where intussusception is the most affecting children. [16]

The intestinal obstruction targeted the age group less than one year due to the fact that intussusception is the most common incidence of intestinal obstruction. It also occurs in the perinatal period in infants, as it is possible that children may have vomiting or flatulence during the birth period. However, this study found that Abdominal distension is more prone to clinical manifestations in infants, which makes the clinical picture more disturbing compared to intussusception during delivery and causes an increase in the incidence of bowel obstruction. [17]

Intestinal resection was performed for patients with intestinal obstruction, as the waiting rate was 23 hours due to perforation in the intestine. Colostomy, Duction of intussusception was the most applied to newborn babies, as Duction of intussusception included 20 (33.33%) cases and Colostomy 13 (21.67%). Although Duction of intussusception is the most commonly performed surgical type, upper gastrointestinal obstruction is still more prevalent than lower gastrointestinal obstruction. [18]

This study found that wound infection was the most prevalent and impactful of other consequences for Iraqi pediatric patients, as it included 18 (30%) cases. According to the study, these complications were caused by intestinal perforation and peritonitis, which lengthened their hospital stay. Compared to other studies and reports, this study shows a significant improvement and success in the quality-of-life rate as a result of the very low death rate in this study, as it included four deaths due to severe malnutrition, cardiac arrest, and intestinal tuberculosis. [19,20]

CONCLUSION

In conclusion, bowel obstruction is more prevalent and affects newborns as a result of postoperative complications. Intussusception is the most common cause affecting infants and children from other complications, causing symptoms such as vomiting, constipation and flatulence. Although these complications targeted the ages less than one year more than the ages of children over two years, the mortality rate in this study is very low compared to previous reports and studies.

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