Experience in Pediatric Pre-Adolescent Laparoscopic Cholecystectomy in Erbil

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ABSTRACT:

BACKGROUND:

Gallstones in children are rare but can become a potentially serious condition [1,2]. Symptomatic cholelithiasis that is requiring surgery in children has been increased in tendency over the last 10 years. The incidence of cholelithiasis in children ranges from 0.13 to 1.9 % and when compared with the adult population , the risk of cholelithiasis incidence is assessed to be as 10–15 % . The experience of pediatric surgical centers is estimated to be very scarce [3,4] . Contemporary Laparoscopic Cholecystectomy is considered as the gold standard procedure in the management of gallbladder diseases in both adults and children . Children that are considered to be a candidates for surgery should be operated in pediatric surgery clinics experienced in minimally invasive techniques [3] .

OBJECTIVE:

Pediatric laparoscopic cholecystectomy has not been evaluated in Iraq , here is an evaluation of the procedure for 29 cases is presented mainly to study its application in this group of patients.

PATIENTS AND METHODS:

This is a preliminary study of 29 cases of pediatric laparoscopic cholecystectomy performed in Erbil city in the period from 2011 to 2017. Age range was 5 months -11 years, 21 males & 8 females . Three of them were obese & one overweight . Both , three millimeter & 5 mm ports were used , 4 ports were inserted .

RESULTS:

Out of 29 cases, 21 (72.42 %) were males & 8 (27.58 %) were females, ranging from 5 months – 11 yrs . Twenty – five of the cases were electively operated on . Oral feeding started after 6 hrs , patients were discharged after 8 hrs except two patients who stayed for 36 hrs , mean hospital stay was 13 hrs and 42 min . The mean operative time was 31 min (range from 20 min to 60 min) . The was laparoscopic cholecystectomy performed by single specialist pediatric surgeon. All cases were done as day case surgery except for the emergency cases. The time of hospitalization ranged from 8 hrs to 3 days. There were no intra operative complications that require reoperation such as injury to the common bile duct or other viscera, bile leakage or vascular injury.

CONCLUSION:

Laparoscopic surgery is a safe procedure in children for excising the gall bladder . Age of the patient is not a contraindication to operation , and LC may be performed even in young children with symptomatic gall bladder disease with low morbidity . it should therefore be considered as the procedure of choice in pediatric patients [10,11] .

KEY WORDS: pediatric gall stones, laparoscopic cholecystectomy

INTRODUCTION:

Gallstones in children are rare but can become a potentially serious condition[1, 2]. Symptomatic cholelithiasis that is requiring surgery in children has been increased in tendency over the last 10 years. The incidence of cholelithiasis in children ranges from 0.13 to 1.9 % and when compared with the adult population , the risk of cholelithiasis incidence is assessed to be as 10–15 % . The experience of pediatric surgical centers is estimated to be very scarce [3,4] . Contemporary Laparoscopic

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METHODS:

Case series study were conducted from 2011 to 2017 in our centre (Fig. 1)by a single surgeon. Twenty nine cases of symptomatic pediatric cholelithiasis were treated by laparoscopy included, age range was 5months to 11years (average 5.8 years) (Fig. 2), 21 males & 8 females. Body weight ranged from 6 to 34 kg (average 20.46 kg),three of them were obese & one overweight. Both, three millimeter & 5 mm ports used, 4 ports inserted, average hospital stay was 10hr, patients started oral feeding after 6hrs. SPSS 18 was used for data entry & analysis. Descriptive approach was used to determine frequency & percentage.

Idiopathic cholelithiasis was present in 27 patients and in two patients cholelithiasis was connected with spherocytosis. The indication for surgery in all patients was symptomatic gallstone disease. Elective operation was performed in 25 patients. Urgent hospitalization was needed in 4 patients that visited the clinic because of : acute biliary colic in 1 , cholecystitis in two , hydrops of the gallbladder in one. In one patient, ultrasound revealed a large gallbladder (hygroma of the gallbladder). All symptomatic patients underwent surgical intervention during their admission after the symptoms has been resolved.

Under general anesthesia, the patient was placed in the supine position, and pneumoperitoneum was created by open Hassun technique through the umbilicus. A 30-degree 5 mm camera was inserted through the umbilical port and two working ports were inserted on both right and left hypochondrial areas, a fourth port was placed to hold the gallbladder as traction in most cases. The cystic duct and cystic artery were closed using titanium clips. The gallbladder was exteriorized through the Left hypochodrial port or through the umbilical port.

RESULTS:

Out of 29 cases, 21(72.42%) were males & 8(27.58%) were females, ranging from 5months-11yrs. Twenty-five of the cases were electively operated on. Gall stones were found in all cases, and in one case a large gallbladder polyp with concomitant gall stone was suspected on ultrasound and confirmed by histopathology. One patient had triple gallbladder. Oral feeding started after 6 hrs, patients were discharged after 8 hrs except two patients who stayed for 36 hrs, mean hospital stay was 13hrs and 42min. Vomiting occurred in two cases postoperatively which prolonged their hospital stay for 36 hrs, both cases had tough adhesion of the gallbladder, one of them had Down syndrome with intrahepatic Gallbladder, in both cases a drain was left (6.89%)for 24 hrs. Two patients had hemolytic disorder, both were siblings (brother & sister). One patient developed umbulical port site hernia which was repaired later on. Urgent admission was required for 4 patients who were operated on after resolution of symptoms.

The mean operative time was 31 min (range from 20 min to 60 min). The LapChole was performed by single specialist pediatric surgeon. All cases were done as day case surgery except for the emergency cases. The time of hospitalization ranged from 8hrs to 3 days. There were no intraoperative complications demanding reoperation such as injury to the choledochus or other viscera, bile leakage or bleeding.

DISCUSSION:

Gallstones in children are rare but can become a potentially serious condition [1,2]. Symptomatic cholelithiasis requiring surgery in children has increased in tendency over the last 10 years. The frequency of cholelithiasis in children ranges from 0.13 to 1.9% and when compared with the adult population, the risk of cholelithiasis ranges from 10–15%. The experience of pediatric surgical centres is very scarce [3,4] Gallstones does not always present itself in the classical clinical picture of adult gallstones and is not considered as a typical differential diagnosis of abdominal pain ([1,2,5]. Right hypochodrial pain , nausea and vomiting may not always found and the initial diagnosis may be overlooked or delayed.[1]

Cholelithiasis in children has been recognized more often in the last 10 years. This is related to accessibility to ultra-sound investigation in primary care. Patients that having abdominal disorders are routinely investigated and gallbladder or urinary tract disorders are diagnosed nearly earlier . In children the incidence of cholelithiasis before 3 years of age is extremely rare but the incidence in patients more than 13 years of age rises markedly [3,4,6].

Safety of the procedure was the most important factor, in which the outcome was with a very low rate of serious complications, but longer operation time had influenced the postoperative complications such as vomiting (28% of patients) or shoulder pain (8% of patients) by Nachulewicz et al.[3] The standard procedure of LC is accomplished with the use of four ports. We performed most of our LCs with a four-port technique. Three port technique is more difficult than the four-port technique but in our opinion is equally safe and efficient. The four-port and the three-port techniques were both compared by Mayir et al. [7] and they concluded they that the three-port technique is evenly safer when performed by an experienced surgeon. Presently, we may find many reports about single incision laparoscopic surgery [8, 9]. The method is promising but the equipments cost is currently too high. The single port sets with wide diameter are also suitable only for older children. In our group, we did not recognizedjaundice and ductal cholelithiasis, also no residual stones were documented after LC during control visits. Contemporary LC has been established to be the standard procedure in the management of gallbladder diseases in both adults and children. Children that are candidates for surgery should their procedures underwent in a pediatric surgery clinic that is experienced in minimally invasive procedures.[3]

CONCLUSION:

Laparoscopic surgery is a safe procedure in children for removal of the gallbladder. Age of the patient is not a contraindication to operation, and LC may be performed even in young children with symptomatic gallbladder disease with low morbidity. Therefore it should be considered as the golden procedure of choice in children.[10,11]

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