Preferred anastomosis following choledochal cyst excision: A cross-sectional survey among pediatric surgeons

Jayakumar P¹, Selvakumar M², Meenakshi Sundari S³, Rock Britto D⁴
¹Assistant Professor, ²Associate Professor, Department of Paediatric Surgery, Government Mohan Kumaramangalam Medical College Hospital, Salem, ³Professor, Department of Paediatric Surgery, Madurai Medical College, Madurai, ⁴Professor, Department of Community Medicine, Dhanalakshmi Srinivasan Medical College, Perambalur, Tamil Nadu, India

ABSTRACT

Background: Choledochal cyst (CC) is a cystic dilatation of various parts of the biliary tract that requires surgical intervention. Excision of the CC with biliary enteric anastomosis is the standard line of treatment. There are two types of biliary enteric anastomosis, hepaticojejunostomy (HJ), and hepaticoduodenostomy (HD). However, there is no consensus among surgeons regarding the preferred anastomosis technique. Aims and Objectives: In this study, we conducted a survey among pediatric surgeons in India to determine their preferred anastomosis technique following CC excision. Materials and Methods: A cross-sectional survey was conducted among pediatric surgeons in India by circulating a Google™ form containing information about their demographics and their preferred choice of anastomosis in the Indian Association for Pediatric Surgeons Official Telegram™ group called “Pediatric Surgery Academics.” The survey was done in June and July 2019. Results: A total of 53 (9.96%) pediatric surgeons responded to the survey. Among them, 47 (88.7%) were male and 6 (11.3%) were female pediatric surgeons. The mean age of the surgeons was 46.21, and the mean number of cases operated by pediatric surgeons was 28.49. Experience-wise, 8 (15.1%) had <5 years of experience, 14 (26.4%) had 5–10 years, 17 (32.1%) had 11–20 years, and 14 (26.4%) had more than 20 years of experience in pediatric surgery. In their practice, 32 (60.4%) had done both HJ and HD, 18 (34%) had done only HJ, and HD was done by 3 (5.7%) pediatric surgeons only. Pediatric surgeon’s preference of anastomosis was as follows, 27 (50.9%) inclined to HJ, 18 (34%) inclined to HD, and the remaining 8 (15.1%) inclined to both HJ and HD. Conclusion: This survey revealed that among pediatric surgeons in India, HJ is the preferred anastomosis technique following CC excision. However, further studies are required to determine the long-term outcomes of these techniques.

Key words: Choledochal cyst; Hepaticojejunostomy; Hepaticoduodenostomy; Pediatric surgery; Biliary enteric anastomosis

INTRODUCTION

Choledochal cyst (CC) is cystic dilatation of various parts of biliary tract. The incidence of CC ranges from 1 in 13,000 to 1 in 2,000,000 live births in different populations which can be presents as diagnosed antenataly at times, with painless jaundice in new born period, in older children presents with abdominal pain, jaundice, pancreatitis, and cholangitis. Malignant transformation also reported. Excision of the CC with biliary enteric anastomosis is the established line of treatment. Biliary enteric anastomosis includes hepaticojejunostomy (HJ) and hepaticoduodenostomy (HD). Among these two, surgeons differ in their preference. Hence, we did a survey among pediatric surgeons in India about their preferred anastomosis following CC excision.¹

Address for Correspondence:
Dr. Jayakumar P, Assistant Professor, Department of Paediatric Surgery, Government Mohan Kumaramangalam Medical College Hospital, Salem, Tamil Nadu, India. Mobile: +91-9659798981. E-mail: drjayakumar1999@gmail.com
Aims and objectives
In this study, we conducted a survey among pediatric surgeons in India to determine their preferred anastomosis technique following CC excision.

MATERIALS AND METHODS
A cross-sectional survey was conducted among pediatric surgeons in India by circulating a Google Form™ containing information about their demographics and their preferred choice of anastomosis in the Indian Association for Pediatric Surgeons Official Telegram™ group called “Pediatric Surgery Academics.” The survey was done on month of June and July 2019. This is a cross-sectional study done in a professional group as a survey. Member pediatric surgeons who are willing to participate only answered in the online survey who are not willing are excluded by their own by not filling the Google Form™. Hence, Ethical Committee Clearance was not obtained. Descriptive and cross-table analysis was done. P≤0.05 considered significant.

RESULTS
The result is describing a survey conducted on a group of pediatric surgeons. The survey was completed by 53 surgeons, which accounts for approximately 10% of the total members of the pediatric surgery group, which had 528 members.

Out of the 53 respondents, 47 were male and 6 were female pediatric surgeons. The mean age of the surgeons who responded to the survey was 46.21, with the youngest pediatric surgeon being 32 years old and the oldest being 81 years old.

The respondents were asked about the number of cases they have operated on. The mean number of cases operated by pediatric surgeons was 28.49, with the minimum number of cases operated being 1 and the maximum being 250.

In terms of experience, 8 (15.1%) of the respondents had <5 years of experience in pediatric surgery, 14 (26.4%) had 5–10 years of experience, 17 (32.1%) had 11–20 years of experience, and 14 (26.4%) had more than 20 years of experience in pediatric surgery (Figure 1).

Out of the total 53 respondents, 32 (60.4%) had experience in performing both HJ and HD procedures, 18 (34%) had only performed the HJ procedure, and 3 (5.7%) had only performed the HD procedure (Figure 2).

Pediatric surgeon’s preference of anastomosis was as follows, 27 (50.9%) inclined to HJ, 18 (34%) inclined to HD, and the remaining 8 (15.1%) inclined to both HJ and HD (Figure 3).

On cross-table analysis, no relationship was noted with preferred choice of anastomosis versus gender, years of experience, and number of cases operated. No relationship was established with anastomosis followed versus years of experience.

On cross-table analysis, people who preferred HJ over HD done HJ primarily (P=0.000) (Figure 4).
DISCUSSION

Our study aimed to investigate the preferred choice of biliary enteric anastomosis among pediatric surgeons in India following CC excision. The study found that out of the 53 respondents, 51% preferred HJ, 34% preferred HD, and 15% preferred both HJ and HD.

The findings of this study are consistent with the existing literature, which shows that there is no consensus among surgeons regarding the preferred method of anastomosis after CC excision. Some surgeons prefer HJ due to the lower risk of anastomotic stricture and bile reflux, while others prefer HD because it is technically easier and faster to perform, reduced hospital stay and less chance for adhesive obstruction.1-4

Study shows that HJ had longer length of the anastomosis, which allows for better bile drainage and reduces the risk of anastomotic strictures.5

The results also revealed that the majority of the respondents (60.4%) had experience in both HJ and HD, which indicates that pediatric surgeons in India are proficient in performing both procedures. This finding is in line with a previous study, which found that most pediatric surgeons are trained in both procedures during their residency and fellowship training.6

The slight preference for HJ over HD is consistent with the previous studies, which reported that HJ is the preferred anastomosis in most cases due to its advantages such as better long-term outcomes, lower rates of anastomotic strictures, and easier access for endoscopic interventions in case of complications.7,8

HD is associated with higher rates of anastomotic strictures and a higher risk of bile reflux gastritis due to the proximity of the anastomosis to the pylorus.9,10

However, HD may be preferred in some cases where the cyst is located close to the duodenum, and the diameter of the common bile duct is small, making HJ technically difficult.11

People who preferred HJ were doing HJ as their primary anastomosis. One possible explanation for this result is that the surgeon who prefer HJ may have been more informed and educated about the advantages of this procedure compared to HD. Studies have shown that HJ may have lower rates of complications and better long-term outcomes including bile flow, and nutritional status than HD in certain cases, such as in patients with high bile duct injuries or those who have undergone previous biliary surgeries. The previous researches also suggested HJ as the feasible safe option in laparoscopically too in children.12-14

While many prefer HJ as the option for reconstruction, a retrospective study from our institution shows tendency toward HD due to reduced operative time reduced hospital stay and influence of a senior surgeon as role model by junior surgeons.15

The present study findings are important as they provide insights into the current practice patterns of pediatric surgeons in India.

Limitation of the study

The limitations of this study include the small sample size and the fact that the survey was conducted only among pediatric surgeons in India. The Ethical Committee...
CONCLUSION

This study provides insights into the preferred choice of biliary enteric anastomosis among pediatric surgeons in India following CC excision. While HJ was the most commonly preferred method, there is no consensus among surgeons regarding the preferred anastomosis technique. Surgeons should consider various factors, including patient age, comorbidities, and surgical expertise, when selecting the optimal anastomosis method.

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REFERENCES


