

Choledochal Cyst Excision and Preferred Anastomosis for Biliary Reconstruction in our Institution: A Retrospective Study

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Abstract

Aim and Background: To find out the common anastomosis done following choledochal cyst(CC) excision in our institution.

Material and Methods: A retrospective study in patients operated for choledochal cyst excision done at our institution was done for a period of 10 years.

Results: Total 41 patients operated for choledochal cyst excision. Hepatico-duodenostomy (HD) was the common anastomosis done in our patients.

Conclusion: HD was the common preferred anastomosis done in our institution.

Introduction

Choledochal cysts(CC) are dilated biliary tract, possibly due to congenital malformation of biliary-pancreatic duct mal-junction. With the long common channel and pancreatic juice reflux results in the weakening and dilatation of the tract is the most accepted theory. Now the preferred treatment is excision of the diseased part with primary reconstruction using hepaticoduodenostomy(HD)

or hepaticojejunostomy (HJ). HD is considered as most physiological one, but associated with higher incidence of ascending cholangitis, bile reflux and gastritis.¹² Here we compared our institution experience with HD and HJ for biliary tract reconstruction following choledochal cyst excision in the last 10 years for pediatric population.

Material and Methods

Retrospective study was done in our institution by collecting data from records of children operated for choledochal cyst for a period of 10 years (April 2009 to March 2019). Data regarding age, sex, type of anastomosis, postoperative complications, Hospital stay days and Mortality were collected. Paediatric surgeons opinion regarding the anastomosis following choledochal cyst excision was obtained by using semi-structured questionnaire created in Google Form TM, through Telegram MessengerTM group of paediatric surgeons. Data analysis was done accordingly by using online calculators and manually. P value of less than 0.05 was considered as statistically significant.

Results

Total number of children operated for choledochal cyst was 41. Total female children were 28 and male children were 13 with F:M ratio of 2.15:1. Among

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them less than 1 year was 6, one to five years was 14 and more than five years was 21 (Table. 1). Mean age of the children operated was 5.3.

Among the 6 children diagnosed less than one year, 3 were antenatally diagnosed cases.

Table 1: Age and sex distribution of the patients.

Age/Sex	<1 year	1-5 years	>5Years	Total
Female	5	8	15	28
Male	1	6	6	13
Total	6	14	21	41

Anastomosis performed were hepaticoduodenostomy (HD) in 26 patients and hepaticojejunostomy (HJ) in 15 patients (1.73:1). Among the HD group 17 were females and 9 males. In the HJ group 11 were females and 4 males(Figure.1).

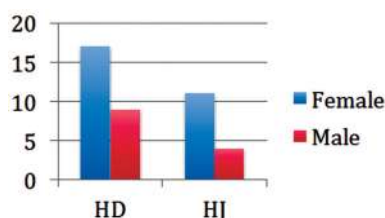


Fig.1: Sex wise distribution of anastomosis.

Age wise distribution of anastomosis were depicted in Table.2.

Table 2: Anastomosis distribution Age Wise.

Age/ Anastomosis	<1 year	1-5 years	>5Years	Total
HD	4	10	12	26
HJ	2	4	9	15
Total	6	14	21	41

Mean number of days hospital stay after HD was 11.6 days and HJ was 14.73 days.

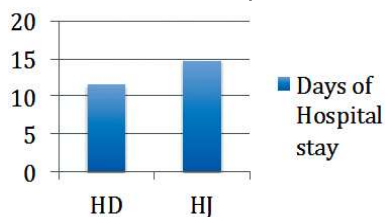


Fig. 2: Anastomosis Vs No of days stayed at hospital.

Table 3: Year wise distribution of anastomosis.

Year/Anastomosis	2009	2010	2011	2012	2013
HD	1	0	1	0	4
HJ	4	1	1	1	2
Year/Anastomosis	2014	2015	2016	2017	2018
HD	3	4	3	4	6
HJ	3	2	0	1	1

Preferred anastomosis done following choledochal cyst excision in our institution was HJ previously. Now a days the preferred choice of anastomosis was HD after the year 2014.

Operative time and hospital stay days were less for HD compared to the HJ group. Postoperative complications were comparable in both the groups.

Table 4: Comparison of variables between HD vs HJ.

	HD	HJ
Operative Time	126 minutes	158 minutes
Bile Leak	3	2
Cholangitis	1	0
Wound infection	1	2
Hospital Stay days	11.6	14.73
Intestinal Obstruction	1	2

Discussion

Female preponderance of CC was noted in most of the studies, in our study also similar preponderance noted.^{3,4,5} Few studies showed equal sex ratio or male predominance in their sample.^{1,6}

During first year of life CC cases identified were 6, among them 3 were diagnosed or suspected antenatally. Which might help in early treatment and reduce the chances of liver damage/morbidity related to the CC.

Mean age at surgery was comparable with the other studies done in India.^{3,7}

Common bilioenteric anastomosis recommended following CC excision were hepaticojejunostomy (HJ) and hepaticoduodenostomy (HD). HD was recommended for its Anatomical location, More Physiological, less operative time, less dissection, and less postoperative adhesions.^{5,3} But high bile reflux into stomach with erosion was blamed with HD. HJ was recommended by studies for its less chances of cholangitis and less gastric reflux of bile.⁸ Some studies show no difference in cholangitis between HJ and HD. Combining all complications HJ was associated with 3.6 times more complications, so some reserved it for difficult biliary anatomy as versatile option.⁹

Mean days of hospital stay in our study was reduced by 3 days in HD group, which was comparable with other studies. Other complications like bile leak, bleeding, operative time, cholangitis, anastomotic stricture, adhesive intestinal obstruction and reoperation rate were similar in both groups as per the metanalysis.^{2,10}

Endoscopic asses was possible with HD group in case of stricture, In HJ group it needs percutaneous

transhepatic access¹¹. A study suggested HD was not an ideal option of biliary reconstruction due to its gastroduodenal bile reflux and a report of cholangiocarcinoma after 19 years following HD.¹²

After the year 2014 our institution surgeons preferred HD, possibly due to a senior surgeon from a respected institution shared his positive experience with HD. He was a guest faculty in our institution for a period of 6 months.

At present there was no consensus among surgeons to select a particular anastomosis.

Conclusion

HD was the common preferred anastomosis following choledochal cyst excision in our institution. HD was associated with less number of hospital days and less operative time compared to HJ.

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