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RETAINED STONES IN THE COMMON BILE DUCT: RESULTS OF MANAGEMENT

Pages with reference to book, From 90 To 92

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ABSTRACT

Seventeen patients underwent treatment tar retained common bile duct stones. In 7 patients the stones were removed Via 0 1-tube tract using steerable catheters while 5 patients underwent ERCP and sphincterotomy and 5 underwent surgical re-exploration. Considering morbidity, mortality, success rote and patients' stay in the hospital, non-operative modalities should be the treatment at choice for retained common bile duct stones (JPMA 43:90 , 1993).

INTRODUCTION

Despite routine per-operative cholangiography and choledocoscopy during bile duct exploration, retained stones in the common bile duct following cholecystectomy continues to be a problem. The incidence of retained stones is not uncommon and occurs in 4-10% of patients[1-3]. Retained stones are discovered on post-operative T-tube cholangiograms or the patient may present with cholangitis and obstructive jaundice later. Small stones may pass spontaneously but some need active intervention. Many options are available and include surgical re-exploration[4,5], ERCP and sphincterotomy[6-9], extraction through the T-tube tract using steerable catheters[10-12] or flexible choledoscope/nephroscope[13], chemical dissolution[14,15] and percutaneous or extracorporeal lithotripsy[16].

PATIENTS AND METHOD

At the Aga Khan University Hospital all patients undergoing cholecystectomy have operative cholangiograms, if abnormal, the common bile duct is explored through a supra-duodenal choledochotomy and choledoscopy is done using a rigid scope. Stones are removed by saline irrigation under pressure, Desjardins forceps, Fogarty biliary balloon catheters, Dormia baskets or by the stone grabbing forceps mounted on the rigid scope. The common bile duct is closed over a large size T-tube (14F or more). A postoperative T-tube cholangiogram is performed on the seventh to tenth day. Non-operative modalities available for removal of retained stones at our hospital include extraction via the T-tube tract using steerable catheters and ERCP/sphincterotomy.

RESULTS

In a retrospective study of 422 cholecystectomies, the common bile duct was explored in 66 patients (15%), there were 10 (2.3%) negative CBD explorations, retained stones on postoperative T- tube cholangiogram were detected in 4 patients and 2 patients presented with obstructive jaundice. In these 2 patients stones were missed on operative cholangiogram. The incidence of retained stones being 1.4% (6 patients). Overall 17 patients underwent treatment for retained stones (11 patients were outside referrals). Five patients were treated by surgical re-exploration, 7 patients had a T-tube in situ and these

were treated by extraction via T-tube tract and 5 were treated by ERCP/sphincterotomy. Various modalities of treatment have been compared with regard to cost, hospital stay, morbidity, mortality and success, as shown in the Table.

TABLE. Various modalities of treatment.

	T-tube ext.	ERCP/Sphinc.	Surgical expl.
No.	7	5	5
Success rate	100%	100%	100%
Morbidity	1 (fever)	1 (pancreatitis)	0
Patient stay	Day care	5 days	12 days
Cost*	Rs.2,500	Rs.14,000	Rs.18,000

*Figures in 1989.

DISCUSSION

Retained stones in the common bile duct can be removed if the T- tube is insitu, by saline or heparinized saline flushed down the T-tube[14]. This method is indicated if the stones are small and distal to the T-tube and the sphincter of Oddi is relaxed with glycerol trinitrate17 or glucagon. The method may be effective in 50% of the selected patients[14]. Stones can also be dissolved using agents such as mono-octanion or methyl tertiary butyI[15]. This chemical dissolution therapy has given variable results. Extraction of stones via the T-tube tract using steerable catheters is claimed to be the procedure of choice in a selected group of patients who have a T-tube in[10,11]. This procedure is done as a day case in the radiology department after the T- tube has been in place for 4 weeks or more and the tract has 'matured'. No fasting or premedication are necessary. It is recommended that a size of 14F or a larger T-tube be used at surgery, as it makes subsequent extraction easier due to the large diameter of the tract[12]. The overall success rate of this procedure is reported to be 95%; no mortality was reported in a series of 661 patients[12], morbidity amounted to 5%. ERCP/sphincterotomy is the other modality which is becoming the treatment of choice for removing retained CBD stones[7,8,18]. Safrany[9] reported a morbidity of 6 to 8% and mortality of 1 to 2% in a large series. Surgical re-exploration has been reported to carry a mortality of about 2 to 3%[4,19]. Mortality and morbidity increase with age and the poor general health of patients, mainly in the form of sepsis and retained stones[5]. Various options are available to treat patients with retained common bile duct stones. Management of an individual patient depends upon the• expertise and facilities available, the age and general health of the patient, size of retained stones and whether a T-tube is in place. In a selected group of patients, extraction via the T-tube tract is a safe and cost-effective method. ERCP/sphincterotomy is also a valuable method of treatment, however, it should be avoided in patients who have had recent surgery and aT-tube is in situ. Surgical re-exploration should be avoided if these non-operative modalities are available as it has a higher morbidity and mortality, however, if the stones are large or when complications arise as a result of ERCP/sphincterotomy, it may become necessary. At Aga Khan University Hospital patients with retained common bile duct stones have been managed mainly by ERCP/sphincterotomy and extraction via the T-tube tract, surgical re-exploration has been done in special circumstances only.

REFERENCES

1. Hicken, N.F., and McAllister, A.J. Operative cholangiography asan aid in reducing the incidence of overlooked" common bile duct stones. Surgery, 1964;55:753-8.
2. Bergdahl, L. and Holmund, D.E. Retained bile duct stones. Acta chir. Scand., 1976;142:145-9.
3. Farha, G.L. and Pearson, ltN.Tranacyaticductoperativecholangiography. Am.J.Surg., 1976;131:228-30.
4. Smith, H.W.,Engel, c.,Averbrooks, B. and Longmire, W.P.Jr. Problemsofretained and recurrent CBD stones 5urgety, 1969;66:291-98.
5. Sheridan, W.G., Williams, H.O. and Lewis, M.H. Morbidity and mortality of common bile duct exploration. Br.J.Surg., 1978;74:1095-9.
6. O\'Doherty, D.P., Neoptolemos, J.P., Carr-locke, DL. Endoacopic aphincterotomy for retained CBI) stones in patients with T. tube in aitu in the early poatoperative period. Br.). Surg. 1986;73:454-6.
7. Lambert, ME., Martin, D.F. and Tweddle, D.E.F. Endoacopic removal of retained atones after biliarysurgery. Br.). Surg., 1988;75:896-8.
8. May, G.E. and Shaffer, E.H. Should endoscopic sphincterotomy replace cholecystec tomy for the treatment of higher risk patients with gall stone pancreatitia? (editorial). 1dm. GastroenteroL, 1991;13:125-&
9. Safrany, L. Endoacopic treatment of biliary-tract diaeaae. Lancet, 1978;2:983-8.
10. Burhenne, Hi. Non-operative retained biliary tract stone extraction. A new roentgenologic tecbnique. AJR., 1973;117:388- 99.
11. Burhenne, Hi. Non-operative inatrumentextraction ofretained bileductatonea. World 3. Surg., 1978;2:439-45.
12. Burhenne, Hi. Percutaneous extraction of retained bilisty tract stones; 661 patients. AJR., 1980;134:889-98.
13. Mathurak, SAC, Pardanani, D.S., Deshmukh, H.L. etal. Endoacopic removal ofretained bile duct calculi via T-tube tract Indian). Gastroenterol., 1990;9:123-5.
14. Motson, ftW. Dissolution ofcommon bile ductstonea. Br.J.Surg., 1981;6&203-8.
15. Kaye, G.L., Summerlield, IA. and McIntyre, N. Methyl tert butyl ether dissolution therapy forcommon bile duct stones.J. HepatoL, 1990;10:337-40.
16. Siegel, J.H., Bon-Zui, J.S.and Pullano, WE. Mechanical lithotripsyof common bile duct stone. Gastrointest-Endoec., 1990;36:351-6.
17. Staritz, M., Poralla, T., Ewe, K. and Meyer Zum Buschenfelde, K.H. Effect of glyceryltrinitrate on the sphincter of oddi motility and baseline pressure. Gut, 1985;26:194-7.
18. Taodon, R.K., Nijhawsn, S. and Arors Aera, A. Management of retained common bitt duct stones in patients with T-tube in situ: role of cndoscopic aphincterotomy. Am.J.Gastroenterol., 1990;85:1126-31.
19. McSherry, C.K. and Glenn, F. The incidence and causes of death following surgery for non-malignant biliary tract disease. Ann. Surg., 1980;191:271-5.