

1)

(Anomalous Pancreaticobiliary Ductal Union) 1

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가 : 20 가

가 3 가 1

1723 Vater ¹⁾ "Cystic dilata-
tion of biliary tree"

1924 MacWorter²⁾
(drainage procedure)

1959 Alonso-Lej ³⁾
가 , 20 1977
Todani ⁴⁾ 가

1963 ⁵⁾
가 , 2 2
1

Todani

type I

1

(Fig. 1), DISIDA scan (Fig. 2)

가 ,
(common hepatic duct) 1.0cm

5 × 3 × 2cm (Fig. 3)

: 1996 11 23
: 1997 2 25



Fig. 1. Abdominal ultrasonography. Dilatation of the common hepatic duct and the common bile duct. The dilated common bile duct is abruptly normalized in the pancreatic head.

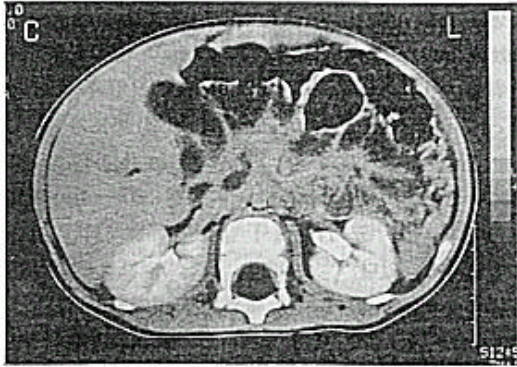


Fig. 2. Abdominal computed tomography. Fusiform dilatation of the supra- and intrapancreatic common bile duct and the common hepatic duct. Mild dilatation of the cystic duct and the pancreatic duct was also noted.



Fig. 3. Intraoperative cholangiography. Fusiform dilatation of the common hepatic duct. The pancreatic duct was abnormally connected to the common bile duct making a right angle.

가

(intrahepatic duct)
 Treitz 25cm
 Roux-en-Y loop
 (sloughing)
 (interlobular bile duct)

6)
 7),
 (embriologic recanalization)
 8)
 (neuromuscular dysfunction) 9),
 (anomalous pancreaticobiliary ductal union)
 common channel 10)

가

Common channel

, Iwai ²¹⁾ manometry
 common channel 20-90% 25-30cm H₂O
 , 7-50% 30-50cm H₂O
 , ¹¹⁾ 가
 74% ¹²⁾, 83.1% . Oguchi ²²⁾
¹³⁾, Misra Dwivedi¹⁴⁾
 63% . Wiedmeyer ²³⁾
 Common channel common
 1-12 mm 4.5mm ¹⁴⁾, Myano channel , common channel
¹⁵⁾ 35 1.3mm 가
 . Kimura ¹⁶⁾
 common channel Di Magno ¹²⁾
 contractile segment ,
 가 20.5 ± . Volkholff ²⁴⁾
 4.6mm(14-31 mm) .
 common channel 가 15mm
 , 가 6mm
 , ¹⁴⁾, Kimura ¹⁶⁾ (carcinoma of gall bladder) 가
 contractile segment 가 14.8 ± 4.6mm (2.5- 17.5%
 11-22mm) . ^{25, 26)},
 . Misra 57-77%
 Dwivedi¹⁴⁾ P-B type ¹⁴⁻¹⁶⁾
 B-P type 가 가 P-B type (adenocarcinoma) ²⁶⁾
 , B-P type Komi ²⁷⁾
 , Kimura ¹⁷⁾
 Type (C-P union) Type ,
 I(P-C union) . B-P type, (glandular structure)가
 Type I(P-C union) , (metaplasia)
 , 26% 가
 , ^{6, 18)}, ²⁶⁾ ²⁸⁾
 1.5-3.2% ,
 33-68% ¹⁴⁾
 Babbitt ¹⁹⁾ common
 channel Oddi 가
 , lithocholate
 . Komi²⁰⁾ deoxycholate가 가
 amylase 가 가 가 ²⁸⁾

- 2 2 1
- Todani type I
- 1
- 1) Stein JE, Vacanti JP :Biliary atresia and other disorders of the extrahepatic biliary tree.; In Suchy FJ(Eds): Liver Disease in Children. 1st ed, St. Louis, Mosby-Year Book Inc, 1994, p435-439
 - 2) Worter GL : Congenital cystic dilatation of the common bile duct. *Ann Surg* 8:604-626, 1924
 - 3) Alonso-Lej F, Rever WB Jr, Pessagno DJ : Congenital choledochal cyst, with a report of 2 and analysis of 94 cases. *Int Abstr Surg* 108:1-30, 1959
 - 4) Todani T, Watanabe Y, Narusue M, Tabuchi K, Okajima K : Congenital bile duct cysts : Classification, operative procedures, and review of thirty-seven cases including cancer arising from choledochal cyst. *Am J Surg* 134:263-269, 1977
 - 5) : .
6:1-10, 1963
 - 6) Yotuyanagi S : Contributions to etiology and pathogeny of idiopathic cystic dilatation of the common bile duct with report of three cases: new etiological theory based on supposed unequal epithelial proliferation at stage of physiological epithelial occlusion of primitive choledochus. *GANN* 30:601, 1936
 - 7) Glenn F, McSherry CK : Congenital segmental cystic dilatation of the biliary ductal system. *Ann Surg* 177:705-713, 1973
 - 8) Schroeder D, Smith L, Prain HC : Antenatal diagnosis of choledochal cyst at 15 weeks' gestation : etiologic implications and management. *J Pediatr Surg* e. 24:936-938, 1989
 - 9) Ponce J, Garrigues V, Sala T, Pertejo V, Berenguer J : Endoscopic biliary manometry in patients with suspected sphincter of Oddi dysfunction and in patients with cystic dilatation of the bile ducts. *Dig Dis Sci* 34:367-371, 1989
 - 10) Kusunoki M, Saitoh N, Yamamura T, Fujita S, Takahashi T, Utsunomiya J : Choledochal cysts. Oligoganglionosis in the narrow portion of the choledochus. *Arch Surg* 123:984-986, 1988
 - 11) Hansson K : Experimental and clinical studies in aetiologic role of bile reflux in acute pancreatitis. *Acta Chir Scan* 375(Suppl):102, 1967
 - 12) DiMagno EP, Shorter RG, Taylor WF, Go VL : Relationships between pancreaticobiliary ductal anatomy and pancreatic ductal and parenchymal histology. *Cancer* 49:361-368, 1982
 - 13) Suda K, Miyano T, Konuma I, Matsumoto M : An abnormal pancreatico-cholecho-ductal junction in cases of biliary tract carcinoma. *Cancer* 52:2086-2088, 1983
 - 14) Misra SP, Dwivedi M : Pancreaticobiliary ductal union. *Gut* 31:1144-1149, 1990
 - 15) Miyano T, Suruga K, Suda K : Abnormal choledochopancreatic ductal junction related to the etiology of infantile obstructive jaundice diseases. *J Pediatr Surg* 14:16-26, 1979
 - 16) Kimura K, Ohto M, Saisho H, Unozawa T, Tsuchiya Y, Morita M, Ebara M, Matsutani S, Okuda K : Association of gall bladder carcinoma and anomalous pancreaticobiliary duct union. *Gastroenterology* 89:1258-1265, 1985
 - 17) Kimura K, Ohto M, Ono T, Tsuchiya Y, Saisho H, Kawamura K, Yogi Y, Karasawa E, Okuda K : Congenital Cystic Dilatation of the Common Bile Duct : Relationship to Anomalous Pancreaticobiliary Ductal Union. *Am J Roentgenol* 128:571-577, 1977
 - 18) Wong KC, Lister J : Human fetal development of hepatopancreatic duct junction-a possible explanation of congenital dilatation of the biliary tract. *J Pediatr Surg* 16:139-145, 1981
 - 19) Babbitt DP, Starshak RJ, Clemett AR : Choledochal Cyst: a concept of etiology. *Am J Roentgenol* 119:57-62, 1973
 - 20) Komi N, Kuwashima T, Kuramoto M, Udaka H, Ogasahara K : Anomalous arrangement of pancreaticobiliary ductal system in choledochal cyst. *Tokushima J Exp Med* 23:37-48, 1976
 - 21) Iwai N, Tokiwa K, Tsuto T, Yanagihara J, Takahashi T : Biliary manometry in choledochal cyst with abnormal choledochopancreatic ductal

- junction. J Pediatr Surg 21:873-876, 1986*
- 22) Oguchi Y, Okada A, Nakamura T, Okumura K, Miyata M, Nakao M, Kawashima Y : *Histopathologic studies of congenital dilatation of the bile duct as related to an anomalous junction of the pancreaticobiliary ductal system. Clinical and experimental studies. Surgery 103:168-173, 1988*
- 23) Wiedmeyer DA, Stewart ET, Dodds WJ, Geenen JE, Vennes JA, Taylor AJ : *Choledochal cyst : findings on cholangiopancreatography with emphasis on ectasia of the common channel. Am J Roentgenol 153:969-972, 1989*
- 24) Volkholz H, Stolte M, Becker V : *Epithelial dysplasia in chronic pancreatitis. Virchows Arch A Pathol Anat Histopathol 396:331-349, 1982*
- 25) Karrer FM, Hall RJ, Stewart BA, Lilly JR : *Congenital biliary tract disease. Surg Clin North Am 70:1403-1418, 1990*
- 26) Todani T, Watanabe Y, Toki A, Urushihara N : *Carcinoma related to choledochal cysts with internal drainage operations. Surg Gynecol Obstet 164:61-64, 1987*
- 27) Komi N, Tamura T, Tsuge S, Miyoshi Y, Udaka H, Takehara H : *Relation of patient age to premalignant alterations in choledochal cyst epithelium : histochemical and immunohistochemical studies. J Pediatr Surg 21:430-433, 1986*
- 28) Reveille RM, Van Stiegmann G, Everson GT : *Increased secondary bile acids in a choledochal cyst. Possible role in biliary metaplasia and carcinoma. Gastroenterology 99:525-527, 1990*

= Abstract =

A Case of Choledochal Cyst with Anomalous Pancreaticobiliary Ductal Union

Je Woo Kim, M.D., Hyun Chul Bae, M.D., Ki Sup Chung, M.D.
Seok Joo Han, M.D.* and Eui Ho Hwang, M.D.*

*Department of Pediatrics, and Division of Pediatric Surgery,
Department of Surgery*, Yonsei University College of Medicine, Seoul, Korea*

Choledochal cysts are congenital or acquired lesions of the biliary tree with a cystic dilatation of the bile duct. We experienced a choledochal cyst accompanying acute pancreatitis caused by anomalous pancreaticobiliary ductal union (APBDU) in a 2 year old boy. The choledochal cyst associated with APBDU is rarely encountered in the clinical field, and thus we report this case with the presentation of abdominal ultrasonogram, computed tomogram, and intraoperative cholangiogram. A brief review of choledochal cyst associated with APBDU is also presented.

Key Words :

Choledochal cyst, Anomalous pancreaticobiliary ductal union, Pancreatitis