Original Article

RECURRENT COMMON DUCT STONES, WITH SPECIAL REFERENCE TO PRIMARY COMMON DUCT STONES

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Summary

A series of 1,358 cholelithic patients operated on at 32 affiliated hospitals during the last year and 492 patients operated on at authors' hospital during the last 21 years were reviewed with special reference to the cases of recurrent common duct stones. Of the former series 15 patients and of the latter series 12 patients respectively were reoperated on for recurrent, but not for residual, common duct stones, and all of them had in the markedly dilated common duct bilirubin stones showing characteristics of stasis stone-primary in common duct. Two representative cases are presented briefly. Congenital hypotonia of the common duct and inflammatory choledochitis are condemned and bilioenterostomy is recommended for preventing stone recurrences.

Key Words: bilirubin stone, stasis stone, dilatation of the bile duct.

Introduction

Common duct stones can be classified into two categories: primary and secondary, the former developing in the common duct de novo and the latter originating in the gallbladder and migrating into the common duct. While most patients with secondary common duct stones can be cured definitely by choledocholithotomy with cholecystectomy, patients with primary common duct stones are burdened with risks of recurrence of stones after choledocholithotomy with cholecystectomy alone, since the sites for stone formation are reserved.

Etiology of primary common duct stones is discussed and some mentions are made on surgical techniques devised for prevention of their recurrences.

Clinical studies

1) A collective review

Among 1,358 cholelithic patients operated on at 32 affiliated hospitals of the Surgical Department of Kyoto University School of Medicine during the last year, 45 cases underwent reoperations for either residual or recurrent common duct stones. Of these 45 cases, the stones obtained at the second operations were residual stones in 21 cases, recurrent stones in 15 cases and undetermined in the other 9 cases, respectively. Intervals
Table 1. Aschoff's classification of gallstones

I. Inflammatory
II. Metabolic
   A. Pure pigment
   B. Calcium bilirubinate
   C. Pure cholesterol (solitaire)
III. Combination stone
   Primary metabolic and secondary inflammatory
IV. Stasis stone—primary in common duct
   Earthy

between the initial and the second operations are shown in Fig. 1.

Among the 15 cases of recurrent stones, 4 cases had cholesterol stones, 10 cases bilirubin stones and the other one none at the initial operations, respectively, and all stones obtained at the second operations were bilirubin stones, which had characteristics of stasis stone—primary in common duct according to Aschoff's classification of gallstones (Table 1).

2) The authors' experience

The authors have treated 492 cholelithic patients surgically during the last 21 years. They have reviewed the 12 cases who underwent reoperation for recurrent common duct stones and have found that most cases have primary stasis stones in their markedly dilated common duct (usually larger than 2 cm in diameter), although there are no demonstrable strictures in the terminal portion of the common ducts except in only one case. Two representative cases are presented as follows.

Case 1: A 51 year old house-wife was admitted to our hospital complaining of recurrent shaking chills, fever and right upper abdominal pain for several days.

About 20 years ago she had been operated on at another hospital for gallstones. She had had gallstones in the common duct but not in the gallbladder, and had undergone external choledochostomy with cholecystectomy, nature of the stones being unknown. She had been in good health since then.

Her endoscopic retrograde cholangiogram on this admission showed the hugely dilated common duct containing many large stones (Fig. 2). On laparotomy, the common duct dilated to a diameter of 5 cm and contained many bilirubin stones. A 6 mm Bakes' dilator was passed freely into the duodenum. Operative cholangiogram showed dilatation of both the extra- and intrahepatic bile ducts, and the contrast media flowed quite freely into the duodenum. A supraduodenal choledocho-duodenostomy (side to side) was done, the orifice of the anastomosis being 3 cm in diameter.

The upper G-I series on the 20th postoperative day showed free reflux of dye into the bile ducts and then free passage into the duodenum through the papilla (Fig. 3). She has been in good health for three years until now.

Case 2: A 49 year old house-wife underwent surgeries for choledocholithiasis three times