

## **A case of asymptomatic anomalous pancreatico biliary ductal union of pancreatic - biliary type**

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### **Abstract**

Anomalous pancreatico biliary junction is an unusual variant of pancreatico biliary anatomy of clinical importance. It is a congenital anomaly where the common duct formed by the union of main pancreatic duct and bile duct is more than 15 mm in length. According to the mode of termination two different types are described. Each type is associated with specific clinical conditions.

**Key words** - pancreatic duct, common duct, pancreatico biliary tree.

### **Introduction**

Anomalous pancreatico biliary ductal union [APBDU] is a congenital anomaly. The incidence is not clear because the identification of this condition is done only during the investigations for the diseases related. It is a complex anatomical and functional entity. The main pancreatic duct and bile duct are joined well outside the duodenal wall to form a common duct. The common duct of more than 15 mm length is noted as an anomalous ductal union [1]. It is reported that 16.7% of patients with carcinoma gall bladder shows associated APBUD [2]. This congenital anomaly can influence the degrees of pancreatic fluid regurgitation which results in an increased incidence of biliary tract malignancy [3].

### **Case report**

Adult duodeno pancreas specimens were used for a study of the ductal pattern of pancreas. The specimens were collected from the cadvers of the dissection hall and 100 specimens including 64 males and 36 females were used. The pancreas was removed along with duodenum and the bile duct was incised just above the first part of duodenum. On the posterior aspect of the specimen the bile duct was traced down to the junction with the pancreatic duct. From this point pancreatic ductal system was traced out. In a specimen collected from a male cadaver of 55 years (died of road traffic accident) pancreatico biliary ductal union was well outside the duodenal wall. A clean slit was made on the bile duct away from the union with pancreatic duct and the incision was extended down and the duct was opened upto the major duodenal papillae. This was to confirm whether the common channel was a true one or if there is any septum separating biliary and pancreatic passages. The length of the true common channel was measured. The true common channel was of 16mm in length. It was formed well outside the duodenal wall (fig-1). There was no apparent change in the size of common bile duct or the main pancreatic duct as they approached the ductal junction.

## Discussion

In majority the main pancreatic duct and the common bile duct open into the second part of the duodenum after the formation of a common channel . The terminal part of the common duct shows a dilatation called ampulla. Around the ampullary region a sphincter is described. The sphincter choledochus and the sphincter pancreaticus surrounds the periampullary parts of the bileduct and main pancreatic duct respectively. The sphincter of oddi (proper) is described around the ampulla. These three sets of sphincters together described as sphincter of oddi [ 4]. Anomalous pancreaticobiliary ductal junction is an abnormal union of the pancreatic and biliary ducts that is located outside the duodenal wall and the length of the common channel is more than 15mm[1]. A normally functioning spincter of oddi and an intramural ductal junction may prevent the duodenal reflux into pancreatico biliary ductal tree as well as the reflux of pancreatic juice into bile duct and vice verse. A long common channel with an extra mural ductal junction indicates a dysfuntioning sphincter of oddi [5]. Thus in a case of APBDU two ducts are always communicating and two way regurgitation ie, pancreatico biliary reflux and bilio pancreatic reflux might occur[6].

Anomalous pancreatico biliary ductal union is significant because of its clinical association.

Two types of APBDU were noted according to the morphological changes occurring in the ducts before union [1,7].

1. pancreatic - biliary type -- there is no notable change in ducts [P-B type].
2. biliary – pancreatic type-- there is a small dilatation in the common duct just proximal to the ductal union.[B-P type]. In the present case there was no notable changes in the ductal morphology towards the ductal union. So the case was included under P-B type of APBDU. Known associations of APBDU include bileduct carcinoma, gall bladder carcinoma and cystic disease of gall bladder[1,7].The specific association were noted for B-P type with choledochal cyst and P-B type with gall bladder carcinoma and biliary pancreatitis[7]. APBDU can be associated with other congenital anomalies like divisum of pancreas[8] and multi septate gall bladder[9]. Among the patients with diseases of pancreatico biliary tree 8.7% with clearly visualized pancreatico biliary radiograms had APBDU[6]. The junction of common bile duct and main pancreatic duct, when extraduodenal and is unprotected by sphincter of oddi the reflux of pancreatic exocrine secretions into the unprotected biliary tree occurs.This results in inflammation which causes the epithelial distruction and dilatation of the bileduct[10]. Mizuno M etal [11] suggested that the reflux of the activated pancreatic juice into the biliary tract is an impotant factor in the development of biliary tract carcinoma. The optimal approach is the prevention of reciprocal reflux of bile and pancreatic juice . Surgical treatment includes complete biliary diversion procedures [12]. In the present study APBDU was asymptomatic

## asymptomatic pancreatico biliary ductal union

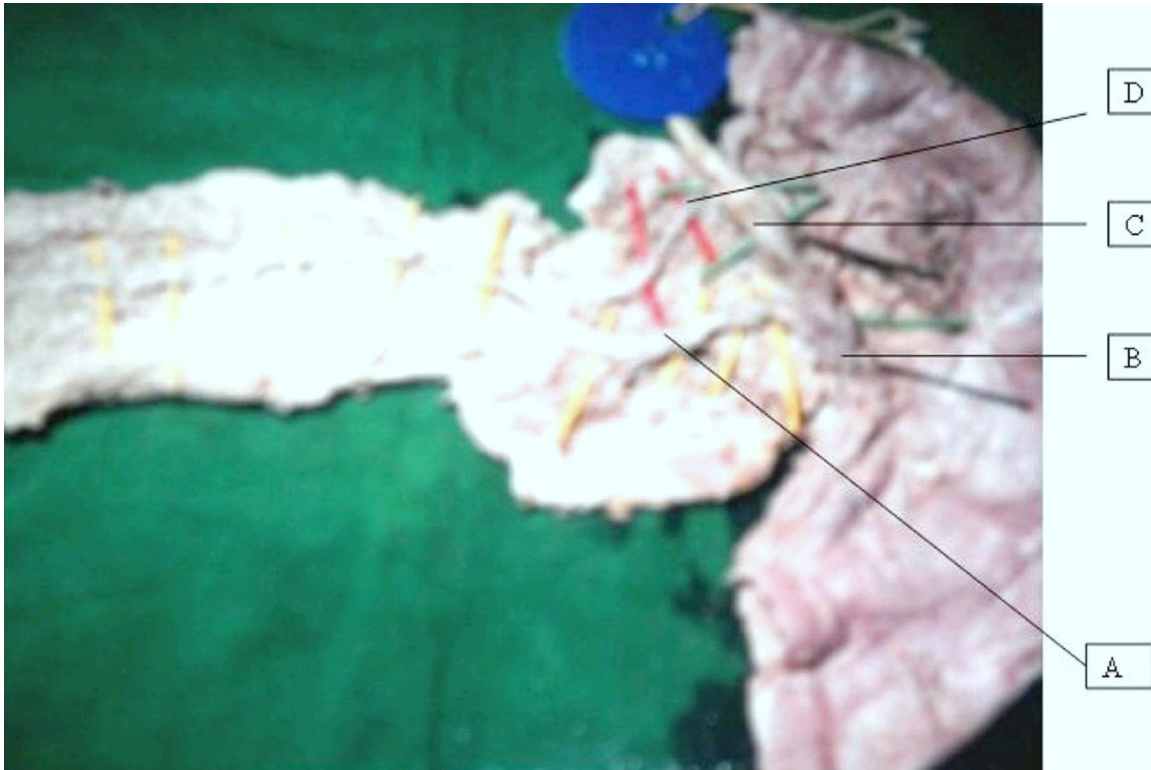


Fig-1 specimen showing APBDU of P-B type. A-main pancreatic duct B-common duct of 16mm in length. C.-bile duct.D- accessory pancreatic duct

### Summary

The most outstanding feature of the normal anatomy of the extrahepatic biliary system is its high degree of variability. Anomalous pancreatico biliary junction is an unusual variant of pancreaticobiliary anatomy of clinical importance because it is associated with increased risk of pancreatitis, diseases of biliary tree, cystic changes of gall bladder and also malignant changes of the biliary tree. In the present study the specimen showed a P-B type of APBDU without any recorded clinical complaints related to this congenital anomaly or morphological changes of associated structures. Such cases go undetected because as a routine these congenital anomalies are reported during the investigative radiological procedures. According to the study result the prevalence of APBDU in a randomized south Indian population is 1%. But data needs confirmation from more studies especially by radiological screening trials as well dissection studies with more number of specimens.