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Prevalence of the anatomic variations of the extra biliary ducts in Khartoum, Sudan

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Variations and anomalies of the extra biliary ducts are common due to their complicated embryological development. The gall bladder might resume different sizes and shapes. It might be bilobed or diverticular. It might be ectopic; the common sites are retrohepatic, anterior abdominal wall, falciform ligament, suprahepatic, floating, retroperitoneal or rarely transverse in position. It might be duplicated, both bladders having separate ducts or a common cystic duct;[1] or it might be intrahepatic. The cystic duct might join the common hepatic duct at different sites and patterns. These junctions are described as angular, parallel or spiral.[2] In the angular type, it joins the common hepatic duct at an acute angle high up below the porta hepatis. In the parallel type, it joins the common bile duct low down behind or below the duodenum.[3] In the spiral type, the cystic duct passes above or below the common bile duct to join its left side.[2,3] The cystic duct might join the right hepatic duct or might converge with the right and left hepatic ducts at the same point where the common hepatic duct will be absent.[4] It might be absent and the gall bladder drains directly into the bile duct. Failure of canalization of the hepatic ducts might occur in or outside the liver.[5] Extrahepatic biliary atresia or stenosis might be accompanied with obstructive jaundice and hence may invite early interference.[6] Intrahepatic biliary atresia usually accounts for a high perinatal mortality. Two bile ducts might be found if the hepatic bud bifurcates early. Multiple accessory ducts might arise from the liver. They might join the hepatic ducts, the bile duct or rarely the gall bladder itself.[7] The bile duct usually joins the pancreatic duct to form a single duct that opens at the ampulla of Vater in the second part of the duodenum. Occasionally it opens separately or joins the pancreatic duct inside the duodenum.[8]

The biliary system was examined using 3 different methods. Sixty cadavers were dissected and the extra biliary ducts examined in the dissection room of the Anatomy Department, College of Medicine University of Khartoum, Sudan, King Faisal University, Dammam, Kingdom of Saudi Arabia. One-hundred patients undergoing biliary surgery were examined in Khartoum Civil Hospital, Soba University Hospital and Omdurman Civil Hospitals, Khartoum, Sudan. Data were obtained from a master sheet completed by the surgeons. Forty patients with symptoms of biliary diseases were investigated using a Siemens SL-1 ultrasound machine in Omdurman Military Hospital, Khartoum, Sudan. Data obtained were then tabulated and analyzed.

The junction of the cystic duct with the common hepatic duct was found to be angular in 75%, parallel in 13% and spiral in 6% of the cases. Three hepatic ducts were found in 4 patients amounting to 2% of the cases and in 3% the common hepatic duct was not found, and the cystic duct joined the right hepatic duct. The bile duct joined the pancreatic duct at the ampulla of Vater in 86.5% of the cases and opened separately into the duodenum in 13.5%. The gall bladder was dilated in 26% of the cases and fibrotic or shrunk in 5%. The liver seemed to be enlarged in 22% of the cases.

The junction of the cystic duct with the common hepatic duct was angular in 75%, parallel in 16% and spiral in 6% of the cases. This high ratio of angular junction could be attributed to the rare interference of the head of the pancreas with the rotation of the duodenum. Should this interference occur, the junction would take a different pathway

resulting into the parallel or spiral type. In the parallel type, the 2 ducts are usually joined with fibrous tissue which might express great difficulty in their exposure and separation during cholecystectomy. The ratio of the spiral type of junction was slightly lower than that found in America (8%), but markedly lower than that reported in Britain which equaled to 25%. The liver seemed to be enlarged in 22% of the cases. This might be attributed to mild or recurrent attacks of malaria, infective hepatitis or typhoid, which are common endemic tropical diseases in Khartoum, Sudan. Furthermore, the gall bladder also seemed to be enlarged in a relatively similar ratio to that of the liver. Whether this enlargement is a genetic predisposition, secondary to stretch by the enlarged livers or mere casual coincidence, needs further interpretation. The common hepatic ducts were not found in 3% of the cases. Uncommonly, 3 hepatic ducts were found in 4 subjects amounting to 2% of the cases. The bile duct was found to open separately in the duodenal wall or inside its lumen in 13.5% of the cases. This ratio was relatively lower than those reported by early workers. This might be due to a difficulty in manual palpation of the common bile ducts during surgery. Generally, the incidence of anatomical variations of the extra biliary ducts among Sudanese citizens in Khartoum, Sudan, was relatively similar to those found elsewhere.

In comparison to the anatomic variations of the extra biliary ducts among Sudanese citizens in Khartoum, Sudan, to those found elsewhere, the incidences of the spiral type of junction between the cystic duct and the common hepatic duct and the separate opening of the common bile duct into the duodenum showed relatively lower ratios. Absence of the common hepatic ducts registered a brisk value. Three bile ducts were found in 2% of the cases.

The incidence of the anatomic variations of the extra biliary ducts among Sudanese citizens in Khartoum, Sudan, is relatively similar to those found elsewhere.

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Tracheostomy in pediatric intensive care. *Analysis of 5-year-experience and review of literature*

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In the pediatric intensive care unit (PICU), prolonged endotracheal intubation is known to be associated with many complications, these may include local trauma, tube displacement, nosocomial infection, aspiration around the tube, tracheal mucosal dysfunction and others.[1] The negative impact of prolonged translaryngeal intubation on the patient has led to the replacement of the translaryngeal tube with a tracheostomy tube.

The optimal time to replace the translaryngeal tube with tracheostomy tube is a controversial subject. The American Association of Chest Physicians recommended tracheostomy tube insertion in adult patients, when the anticipated need for artificial airway is more than 3 weeks.[1] In children, however, there are no specific guidelines for tracheostomy. Furthermore, it has shown that tracheostomy in pediatric patients has a higher morbidity and mortality compared to adult patients.[2] The decision to perform tracheostomy in a child can be difficult and complex, the physician often faces many challenging questions related to family acceptance, indication, timing, future care, and the risk associated with the procedure. To evaluate the role of tracheostomy in critically ill children, we reviewed retrospectively all pediatric patients who underwent tracheostomy in our hospital between 1997 and 2002. Our aim was to look at the