cells was observed in places with neutrophil infiltration. The tumour was invasive and involved the surrounding renal parenchyma.

Discussion

Renal cell carcinoma is uncommon in childhood, and Scruggs and Ainsworth (1961) were able to find only 51 reports of such cases. The youngest case reported previously was in a 6-month-old infant (Scotti, 1939).

Other unusual features of the present case were the finding of bilateral tumours, the presence of multiple nodules in each, and the presence in the tumour cells of PAS-positive granules which were not digested by saliva. PAS-positive granules have been reported previously in renal carcinoma cells, but they have been digested by saliva and were thought to contain glycogen. The association of renal cell carcinoma with congenital anomalies is rare. It is not known whether congenital abnormalities of the urinary or urogenital tract may be of aetiological importance in renal cell carcinoma, but in the review of Abeshouse and Weinberg (1945) two neoplasms were found in congenital anomalous kidneys, i.e. in the right half of a horseshoe kidney and in the lower half of a double kidney.

Summary

Bilateral renal cell carcinoma in an infant of 3 months of age is reported. The infant is the youngest in the reported series. The tumour was associated with imperforate anus and recto-urethral fistula, which is a hitherto unrecognized combination.

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Tracheal Agenesis

During the attempted resuscitation of a newborn twin the endotracheal tube appeared to be unusually prominent in the neck. Necropsy later revealed

complete absence of a trachea: the tube had passed from the larynx into the oesophagus from which the main bronchi arose.

The mother was a healthy 27-year-old African Kenyan, with a history of two previous uneventful pregnancies. Polyhydramnios was noted at 28 weeks and twins were diagnosed. Premature labour occurred at 34 weeks and a normal male twin was born spontaneously weighing 2140 g. A large amount of liquor was released on rupturing the second sac and the second male twin was delivered by forceps. This baby was smaller and marasmic: he gasped immediately but required periodic intermittent positive pressure respiration until he died 2½ hours later. There was no clinical evidence of a twin transfusion syndrome. At necropsy this second twin was wasted, weighing 1475 g. The epiglottis, laryngeal sinuses, arytenoid, and thyroid cartilages were identified, but the cricoid cartilage was absent posteriorly, so that the lower part of the larynx opened into the oesophagus. No trachea was identified. Both main bronchi with rings of cartilage in their walls arose independently at the same level directly from the oesophagus (Fig.). The right lung was bilobar and collapsed while the left was partly expanded. The heart showed a common truncus

FIG.—A posterior view of the thoracic and upper abdominal viscera. The larynx is in continuity with the oesophagus. Both main bronchi arise directly from the oesophagus at the level indicated by the arrow.

arteriosus deformity, with associated atrial and ventricular septal defects. The right umbilical artery was absent. The duodenum was almost completely occluded by an annular pancreas. The placenta consisted of a single monochorionic diamniotic disc, with two arterio-arterial connexions and two zones of shared circulation. Post-mortem chromosome studies were unsuccessful. Histologically the epithelium altered from ciliated transitional to stratified squamous at the lower border of the larynx. A small plaque of cartilage in the anterior wall of the oesophagus 5 mm. below the thyroid cartilage was thought to be rudimentary cricoid.

Discussion

Congenital abnormalities of the trachea and main bronchi are rare. Holinger *et al.* (1952), in a review of 72,907 admissions to the Children's Memorial Hospital, Chicago, over a 15-year period, found an incidence of 0.002%, excluding laryngeal abnormalities. Complete failure of development of the trachea is very rare. Joshi (1969) has published a recent review of 16 published cases: he reports a further case with complete absence of the trachea and bronchi arising from a blind-ending carina with a fistula connecting the left bronchus to the oesophagus. The present case appears to be unique in that the larynx was in direct continuity with the oesophagus and each of the main bronchi arose from the oesophagus.

The respiratory system arises as a median ventral

diverticulum of the foregut (Hamilton, Boyd, and Mossman, 1962). A longitudinal groove on either side separates off the caudal portion of this diverticulum and the separation spreads cranially until the remaining foregut communication is the primitive laryngeal aditus. The trachea is formed from the middle portion of this diverticulum, while the cranial portion forms the larynx and the caudal extremity the bronchial tree. Though the aetiology is unknown, isolated trachea agenesis seems to involve some selective failure of elaboration of the middle portion of the foregut diverticulum.

Summary

The rare occurrence of complete absence of the trachea, with main bronchi arising from the oesophagus, is described in one of identical twins.

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