CONGENITAL ABSENCE OF THE GALL-BLADDER.

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THE subject from which were obtained the specimens to be presented had been under the care of my friend Dr. C. F. Pettibone, upon whose invitation I undertook the post-mortem examination, and by whose courtesy and with whose coöperation this report is made. The case occurred in a rachitic, colored child, two years old, that had never walked unsupported and had presented no symptoms suggestive of any anatomic peculiarity referable either to the biliary apparatus or to other structures. The child had just gotten its first tooth; its ribs were beaded; its chest flattened laterally; the top of its head but slightly convex and its forehead square. It had not yet been taken from its mother's breast and had presented no noteworthy derangement of the digestive apparatus. The child was the outcome of the first pregnancy of the mother, and no family history of syphilis was obtained, although the previous wife of the father had had two miscarriages. The little patient came under observation on account of a slight but rather persistent cough, with occasional dyspnea at night. The bowels were moved several times daily and the stools were pale. There was no jaundice. Upon physical

[1] Read before the Philadelphia Pathological Society, April 12, 1894.

examination no impairment of the pulmonary percussion-resonance was detected, but numerous fine râles were heard posteriorly and at the bases of the lungs. The heart appeared somewhat displaced downward and to the right, but the action was rhythmic and the sounds clear.

The child was lost to observation for a short time and nothing was heard of it until information came that it had died and a certificate of death was asked for. Upon post-mortem examination the epicardium was found to be injected and the pericardial cavity to contain an excess of clear fluid. The heart was large and distended with blood. Its cavities were dilated, but the valves and orifices presented no abnormality. Both lungs were involved in an extensive, widely distributed broncho-pneumonia, with, in places, some compensatory emphysema. The angulation and hyperplasia at the junction of the true ribs with their cartilages was particularly marked upon the inner surface. The kidneys presented a striking pallor of the medullary pyramids. A small supernumerary spleen was present. The bronchial and mesenteric glands were enlarged. The ileum was free from ulceration. The liver appeared of normal size and condition. It presented a whitish nodule at its anterior margin, histologic examination of sections from which shows the remains of hepatic parenchyma, in part in a state of fatty degeneration, together with hyperplasia of connective tissue, accumulations of round cells, and in places homogeneous loss of structure—changes that I take to be of syphilitic origin. The sections that I exhibit show the presence of the hepatic, portal, and biliary vessels. No gall-bladder could, however, be found, either attached to or detached from the liver, or even contained within the structure of this organ, and, as I show you, the usual fissure for the gall-bladder is wanting and there is nothing suggestive of the previous presence of this viscus. Unfortunately the relations of the hepatic artery, the portal

vein, and the hepatic ducts were not attentively observed *in situ*. The usual papilla was found in the duodenum, marking the point of entrance of the choledoch and pancreatic ducts, and from this point a duct could be traced upward for a short distance, but the ducts issuing from the liver could not be isolated. The portal vein is perfectly evident and displays no abnormality. There is every reason to believe that the blood-supply of the liver was normal and that the functional activity of the organ was in no way interfered with. The case thus clearly resolves itself into one of agenesis of the gall-bladder.

That absence of the gall-bladder is not incompatible with life is demonstrated not only by cases of this kind, in which there is a congenital deficiency of that viscus, and by the cases in which it is wanting as a result of pathologic causes post-natal or as a result of surgical interference, but also by the further fact that it is normally wanting in some animals, as, for instance, the elephant, the rhinoceros, the camel, the goat, the deer, some species of fish, some birds, and some rodents.[1] Its *congenital* absence in man seems, however, to be a rare condition. In a partial survey of the literature of the subject I have been able to find but few cases of the kind. The number becomes swelled if cases be included in which the gall-bladder was absent obviously or probably as the result of obliterative processes of one kind or another. I append in chronologic sequence a brief summary of the cases that I have gathered. There are a few others to which I have not had access.

Huber[2] reports having found an absence of the gall-

[1] The gall-bladder may be viewed as but an elaboration of structure dependent upon some differentiation of function, representing, as it were, but a diverticulum of the union of the biliary ducts of the liver.

[2] The Philosophical Transactions of the Royal Society of London, vol. ix, from 1744 to 1749, p. 649. London, 1809.

bladder in the dead body of a woman sixty years old. The place of the viscus seemed to be supplied by a preternaturally large hepatic duct, which opened into the duodenum in the usual situation, and the coats of which were greatly thickened, and whose lining membrane presented a villous appearance, with numerous small spots believed to be follicles. The biliary ducts were likewise enlarged.

Cholmeley[1] records the case of an infant that was noticed to be sallow at birth and soon afterward became intensely icteric. The stools were white and pasty. Death took place at the age of five weeks, being preceded by convulsions. Upon post-mortem examination the usual depression in the liver for the gall-bladder was found present, but the viscus itself was replaced by a narrow, impervious cord. The pancreas was enlarged and indurated. It is stated that the transmission of bile into the duodenum was prevented by pressure of the pancreas on the common duct. Cholmeley cites from Morgagni an instance in which the gall-bladder was wanting, but in which two livers were present.

Gaultier[2] has reported the case of a man, aged sixty, with jaundice, who died of tuberculosis, and in whom no trace of a gall-bladder could be found. The duodenum, however, was adherent to the liver by means of fibrous bands. In the bowel opposite the point of entrance of the choledoch duct a large biliary calculus was found. This duct passed directly into the liver without presenting any diverticulum corresponding to a cystic duct.

Baker[3] found the gall-bladder wanting in a subject that came into the dissecting-room. A puckered appear-

[1] Medical Transactions of the College of Physicians of London, 1820, vol. vi, p. 50.

[2] Journal de Médecine hebdomadaire, July 11, 1829, tome iv, No. 41, p. 61.

[3] North American Archives of Medicine and Surgical Science, February, 1835, vol. i, No. 5, p. 307.

ance of the liver in the usual situation of the gall-bladder suggested the destruction of this viscus by some suppurative process.

Bergmann[1] has reported the case of a woman who had long been insane, and in whom after death the left lung was found replaced by two insignificant fleshy masses, the liver enlarged, and the gall-bladder replaced by a small fibrous mass. From the liver a membranous canal passed to the duodenum.

Bergmann cites a case recorded by L'Emery[2] of absence of the gall-bladder, the bile passing from the liver to the duodenum through numerous small ducts.

Canton[3] has reported the case of a woman, sixty-five years old, dead of some "disease of the brain," and in whom the gall-bladder was wanting, although a shallow groove for its accommodation was present in the usual situation. The liver was reduced in size. The right and left hepatic ducts were of usual size and diameter, uniting at an angle below the transverse fissure of the liver to form a common choledoch duct of unusual length and caliber, and whose lining membrane presented the characters of the mucous wall of the gall-bladder.

Canton refers also to a case, reported by E. Wilson, of a fetus born at term that lived but a few hours, and presented a number of peculiarities, the most noteworthy of which was an absence of the gall-bladder. Reference is also made to two specimens in the Museum of the Royal College of Surgeons, in one of which the gall-bladder and the hepatic duct are absent, and in the other of which the gall-bladder was replaced by fibrous tissue.

Thomas[4] has reported the case of an infant five months old that had presented jaundice from the second or third

[1] Hannover'sche Annalen für die gesammte Heilkunde, 1836, B. i, p. 553.

[2] Mém. de l'Acad. des Sci., 1701.

[3] Lancet, 1847, vol. ii, p. 406.

[4] Medical Times, July, 1848, vol. xvii, No. 458, p. 171.

day of life. The child was able to suckle, but vomited a little daily. The bowels were irregular; the stools were white or clay-colored. A week before death anasarca and ascites developed. Upon post-mortem examination not even the rudiments of gall-bladder or cystic or hepatic ducts could be found. The liver weighed fourteen ounces; microscopically its cells were found filled with yellow, granular matter, without much fat. The mesenteric glands were enlarged. Two glands in the longitudinal fissure were softened.

Trimble[1] reports the case of a woman, fifty-five years old, who for several months had presented epigastric pain, nausea, occasional vomiting, furred tongue, pyrosis, anorexia, constipation, emaciation, and ascites. After death there were found inflammatory adhesions about the pancreatic and choledoch ducts. The liver was reduced in size, and in one situation attached to the pancreas. Here it was of cartilaginous hardness, and on section was found to contain a gall-stone imbedded in the common choledoch duct. Careful examination failed to disclose the presence of even a vestige of the gall-bladder.

In 1860 Simpson,[2] before the Edinburgh Obstetrical Society, reported the case of a child four weeks old presenting a condition with features both of erysipelas and scleroderma. In the sixth week vomiting suddenly set in, and was soon followed by death. Upon post-mortem examination there were found present evidences of peritonitis. The gall-bladder could not be found, and there was no depression corresponding to its usual site. The common choledoch duct opened into the duodenum in its usual situation. The duct could be traced backward to the transverse fissure, where it broke up into the hepatic ducts.

[1] New Jersey Medical Reports and Transactions, 1850, vol. iii, p. 303.

[2] Edinburgh Medical Journal, 1861, vol. vi, part ii, p. 1045.

In 1865 Sands,[1] before the New York Pathological Society, reported finding in the dissecting-room, in a tuberculous male subject about twenty years old, a liver without a gall-bladder and without a fissure for its lodgment. The liver was small, weighing one and three-fourths pounds, and its quadrate lobe was wanting.

Lynche[2] has recorded the case of an infant, eleven months old, in which icterus made its appearance a few days after birth, the stools presenting a dead-white appearance. Later on the child manifested a tendency to hemorrhage. After death the liver was found to be large, weighing one pound and two ounces. The hepatic ducts were small, but there was no trace of a gall-bladder, its place appeared to be taken by an enlarged cystic duct.

Rambault and Schachmann[3] have reported the case of a paretic dement who after death presented, in addition to the classic lesions of paretic dementia, a small liver with absence of the gall-bladder, the fossa for this viscus being replaced by a shallow fissure. There was no indication of a cystic duct. The hepatic ducts presented no abnormality. During life there had been no symptoms suggestive of the absence of the gall-bladder.

It will be seen, even on superficial analysis of the cases collated, that in most of them the absence of the gall-bladder was associated with conditions that point to obliteration of a previously existing viscus, rather than to a condition of agenesis, such as I conceive to have been present in the case now reported.

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[1] New York Medical Journal, June, 1865, vol. i, p. 222.

[2] Medical Press and Circular, 1875, n. s., xx, p. 362.

[3] Bulletin de la Société Anatom. de Paris, 1882, lvii ann., 4e sér., tome vii, p. 499