

The patient rapidly declines in flesh and strength. There are daily chilliness and febrile movement. The skin is harsh and dry; sweating usually occurs at night; the urine is scanty, high colored, and deposits an abundant uric-acid sediment. With the development of these symptoms the abdomen gradually assumes a characteristic condition. By the accumulation of gas in the intestine, and of serous effusion in the cavity, the abdomen enlarges. Notwithstanding a considerable effusion, it is rare that the signs and symptoms of ascites are present. There is dullness in the dependent parts, whatever may be the decubitus of the patient, but not such a fluctuation as occurs in ascites. The compression of the vessels, by the effusion within and the direct pressure of membranous adhesions, but especially the matting of the small intestines into a globular mass, and the pressure of this tumor-like body on the iliac veins, cause an extensive œdema of the lower extremities, the scrotum, and the abdominal walls. This result is promoted by the enlargement of the mesenteric glands, which are also occupied by tubercular deposit. The course of this malady is slow, but the termination by death is not less certain. The reader should not overlook the distinction between a tubercular peritonitis occurring with tubercular phthisis and other tubercular diseases and a peritonitis in which tubercular deposit is secondary to the morbid process which had preceded it.

Treatment.—When robust subjects are attacked by peritonitis, there can be no doubt of the utility of leeches, ten to twenty applied over the abdomen. In the cases of local peritonitis (typhlitis, for example), if the patient is not very weak, leeches are highly serviceable. There are few, indeed, who can not bear the loss of blood by two or three leeches. The time for their application is at the onset of the disease, before solid exudations have occurred. After leeches, or at once, an ice-bag should be applied to the abdomen, or to the part only affected. This ceases to be useful, and is better supplanted by warm applications, when exudations take place and the abdomen swells. With the first symptoms, morphine should be administered hypodermatically, and should be repeated every four, six, or eight hours according to the effect, such a degree of narcotism being maintained that pain is relieved, the pulse considerably reduced, but yet the patient is easily roused. Atropine should be given with the morphine. The very heroic use of morphine, advocated in some quarters, is not to be commended. The best curative results are obtained from doses that affect decidedly without inducing a degree of narcotism that may be dangerous. At the very beginning, the administration of antipyretic doses of quinine is in a high degree beneficial, and the effect may be maintained by frequent exhibition of smaller doses. This ceases to be useful when there is solid and liquid exudation. When effusion occurs, another and a very different kind of medication must be adopted. The decline of

the vital powers must be retarded by suitable nutrients and stimulants. The local applications should consist of warm fomentations, mustard-plasters, or flying-blisters, or the tincture of iodine. By the stomach the salts of ammonia should be administered freely, and morphine continued *pro re nata*. Ten grains of the carbonate of ammonium, in an ounce of the solution of the acetate, every four hours, when the exudation is going on, is, the author believes, a remedy of the highest utility. In the peritonitis from perforation, absolute repose, opium, ice, and the avoidance of all foods and drinks, are the proper measures.

ASCITES—DROPSY OF THE ABDOMEN.

Causes.—The chief factor in the pathogeny of ascites is mechanical obstruction of the vessels, the portal system, and the most common cause of this obstruction is cirrhosis of the liver. Tumors, as aneurism of the hepatic artery, tubercle masses, cancer, and hydatids, in a situation to compress the portal vein, will also cause an effusion into the peritoneal cavity. Increase of pressure in the portal system may be due to obstructive disease of the heart or lungs. Again, dropsy of the peritoneum may be part of a general dropsy, especially in chronic nephritis. Accumulation of fluid is a result of peritonitis, acute or chronic, but this does not, properly, constitute ascites.

Pathological Anatomy.—The amount of effusion which exists in ascites varies from a few ounces to many gallons. It is usually of a pale straw-color, or it may have a greenish tint, and is transparent, and may be free from flocculi, or any foreign constituents. Its reaction is alkaline, and its specific gravity below that of the serum of the blood. It contains albumen or albuminate of soda, but the proportion is less than is present in blood-serum, but greater than in other serous exudation except hydrothorax. The biliary acids and pigment are also found in the ascitic fluid, when jaundice exists, and creatine and creatinine are very common constituents. In many cases fibrin is held in solution, and slowly coagulates in an exceedingly fine reticulation of fibers. Sometimes ascitic fluid is reddish from the presence of blood derived from ruptured capillaries; again, blood may indicate the probability of cancer. The peritoneum long in contact with fluid is altered in character and appearance by imbibition; it becomes sodden, cloudy, and thickened, but these are not inflammatory changes. The distention of the cavity and the displacement of organs disturb the relation of the parts.

Symptoms.—As a rule the beginning of ascites is obscure, and it is not discovered until the sense of fullness and tension directs attention to the part, or an examination of the abdomen is made for the purpose, existing lesions rendering it probable that effusion has occurred. An increasing fullness of the abdomen is the most important objective

symptom. It is not wholly fluid, but the distention is in part due to flatus in the intestines and fecal accumulations, the result of constipation caused by pressure on the sigmoid flexure. If the patient is erect, the fluid distends the iliac and hypogastric regions; if lying down, the fluid flows to the sides; if turned upon one side, the fluid takes a corresponding position—so that the dullness on percussion varies with the posture of the patient. With the increase in the amount of fluid the girth of the abdomen enlarges, so that in cases of large effusion the abdomen may be two or three times larger than the normal. When the effusion is great and of long standing, the umbilicus is forced outwardly, and forms a tumor with thin walls, and soft and fluctuating in character. The physical signs are characteristic: On mensuration, the increased circumference; on palpation, a peculiar wave-impulse communicated through the intervening fluid, when a slight blow is made on one side; on percussion, a tympanitic note over the distended bowel, and a region of perfect dullness corresponding to the position of the fluid. The wave of fluctuation is best felt by laying the hand extended flat on one side of the abdomen, and gently tapping the opposite side. The distended abdomen forces the diaphragm upward and therefore embarrasses the respiration and the cardiac movements; the urinary secretion is diminished because of the pressure on the renal arteries and veins, and of the escape of fluid into the peritoneal cavity; constipation results from the compression of the sigmoid flexure. The integument of the abdomen has a glistening appearance, arising from stretching and œdema, but the skin generally is harsh and dry. The lower extremities and the scrotum also are much swollen, when the ascitic fluid is sufficient in weight to compress the vena cava and iliacs.

Course, Duration, and Termination.—The course and behavior of ascites depend much on the cause producing it. Usually the effusion occurs slowly, as, for example, in cirrhosis, in which disease there may be months occupied in producing sufficient effusion to distend the abdomen. In idiopathic ascites, the accumulation may take place in one or two weeks. The amount of increase in the blood-pressure may vary greatly when an obstruction, cardiac, pulmonary, or hepatic, is the cause of the effusion. Idiopathic ascites is shorter in duration than the other forms, and terminates in health in a few weeks. The duration of the other forms is a question of the course and behavior of the malady, of which ascites is usually a symptom. When dependent on obstructive disease of the heart, lungs, or liver, especially the liver, the duration is indefinite. The fluid may be removed by treatment, and return again and again, for the original cause remains.

Prognosis.—The question of recovery is determined by the presence or absence of certain organic changes. If the effusion is simply peritoneal, the prognosis may be favorable. If it is a symptom of cardiac,

pulmonary, or hepatic disease, the prognosis is unfavorable, for these maladies being incurable the effusion will recur, if at any time it may be removed.

Diagnosis.—Ascites must be differentiated from ovarian tumors, pregnancy, distended bladder, chronic peritonitis, and enlarged spleen. As ovarian tumors are so often accompanied by effusion into the peritoneal cavity, mistakes are frequent, ovarian tumors being confounded with ascites, and *vice versa*. The distinction lies in the following considerations: Ascites is almost always preceded by obstructive diseases of the heart, lungs, or liver, especially by cirrhosis, and the derangements of health which the existence of these obstructive diseases always implies. Ovarian disease does not necessarily impair the health, and is not preceded or accompanied by the lesions pertaining to ascites.

In ascites the enlargement of the abdomen is uniform, begins at the dependent part, whatever that may be, and the dullness on percussion changes with the position of the patient; ovarian tumor begins in the iliac fossa of either side, the growth is obliquely upward, does not change its position according to the posture of the patient, nor does the dullness change. The tympanitic percussion-note, derived from percussion over the distended intestines, is in ascites above the fluid; in ovarian tumor, to the side and behind. When fluid in the cavity coincides with a tumor, the latter may be felt by suddenly displacing the fluid, and coming down on the tumor with the hand. An exploration through the rectum, by the method of Simon, will enable a diagnosis to be made at once; by conjoined manipulation through the vagina, a tumor can usually be easily defined. In pregnancy the tumor develops in the middle line of the abdomen with an inclination to the right; it is firm, inelastic, and non-fluctuating. Changes in the length, density, and size of the neck of the uterus, and in its functions (arrest of menstrual flow), and in the mammæ, with the other evidences of pregnancy, accompany the growth of the uterine tumor. After the fourth month the sounds of the fetal heart and the placental souffle, together with the *ballotement*, indicate the nature of the case without doubt. The author has known a distended bladder mistaken for ascites. Applying the same method already described for the diagnosis between ovarian tumor and ascites, the difference becomes at once apparent. In all cases of critical examination of the pelvic organs, the catheter is used, or ought to be, to prevent error and to facilitate the exploration. The local and physical signs may be precisely the same in ascites and chronic peritonitis, but the clinical history is so different that a differentiation may be made by reference to the origin, causes, and symptomatology of the two affections. Peritonitis is accompanied by pain and tenderness of the abdomen, by an increased thickness of the walls, by persistent vomiting, and by alternating constipation and diarrhœa; in

ascites there is usually no tenderness, the walls of the abdomen become very thin from absorption of fat and atrophy of the muscles, there is no vomiting except such as is due to hepatic disease, and there is persistent constipation. The spleen may be uniformly and extensively enlarged so as to fill the cavity, but it differs from ascites in the following particulars: The enlargement is from the left hypochondrium downward; it is firm, inelastic, and non-fluctuating; the dullness maintains with the tumor a constant position, which does not follow the movements of the patient.

Treatment.—There are, besides artificial means, two outlets to the effusion—by the intestinal canal; by the kidneys.

Dry diet has, from the earliest period, been regarded as a most efficient plan of treatment. As it may be tried without interfering with the remedial management proper, it should be enforced in suitable cases. Dry diet consists in absolute disuse of fluids of every kind, and the use of water-free food. It is extremely irksome, but, if patiently carried out, will contribute materially to relief or cure, as either may be practicable. If this method be unavailable, the opposite plan, or the free use of water and diluents, should be enjoined. The best of all diluents for this purpose is skimmed milk, which should be taken with regularity and in as large quantity as the patient can bear. An intelligent medicinal treatment of ascites must be conducted with reference to its cause. Here only the remedies for the removal of the effusion can be discussed. As the cavity is a closed sac, diuretics are not very efficient. The treatment by hydragogue cathartics is the most generally serviceable, and of the remedies belonging to this group the most useful is the compound jalap powder. Several watery evacuations must be passed daily to make any important impression on the effusion; this result is most easily accomplished by the administration of one or two drachms of the compound jalap powder in the early morning, to avoid interference with the digestion. If the jalap is not efficient, elaterium may be substituted; but in the author's experience the former is to be preferred. Notwithstanding the little utility of diuretics, advantage should be taken of any good arising from them. The resin of copaiba, according to Wilks, is an efficient diuretic in this disease. Cream-of-tartar is also useful. Digitalis, especially in the form of infusion, is the best of the diuretics proper. These remedies may be given jointly. To urge the kidneys to their highest activity, the functions of the skin should not be excited, and the cutaneous capillaries must therefore be kept contracted by lessening the warmth of the covering or clothing. An increased action of the skin is generally more serviceable in ascites than diuretics are, unless an obstructive cardiac or pulmonary disease is the cause of the effusion. Most excellent results are now obtained from the use of jaborandi or pilocarpine in the treatment of ascites. Warm clothing,

vapor-baths, and pilocarpine may be used jointly, to maintain constant diaphoresis. Removal of the fluid by tapping is a useful expedient in cases not relieved by the methods advised, but so rapidly does reaccumulation take place that this measure should not be practiced too early. It should not be adopted until the embarrassment of breathing is so great as to prevent sleep. The relief it affords is immense, and is accomplished now so readily that there is a constant temptation to employ the aspirator trocar before the proper time has arrived. The puncture is made in the middle line—the *linea alba*—two or three inches below the umbilicus. It is not necessary to draw off all the fluid, but a sufficient quantity to afford relief. The puncture should be carefully closed. It is sometimes difficult to do this, and the ascitic fluid is permitted to drain away indefinitely; but the practice is bad, for the admission of air to the cavity sets up a septic process, and may excite a fatal peritonitis, as the author has seen.

IDIOPATHIC SUPPURATIVE PERITONITIS is a term applied to a form of peritonitis apparently arising from exposure to cold, and occurring in children. It has the clinical history of peritonitis—sudden onset, fever, small pulse (dicrotic), rapid decline in strength, pain in the abdomen, meteorism, nausea and vomiting, constipation, vesical tenesmus. Pus may be evacuated through the rectum, bladder, vagina, or externally. It is in a high degree probable that the peritonitis is not a primary but a secondary affection, and is due to perforation. The enormous accumulation of gas and its extreme fetidity lend support to this view. Other cases having similar symptoms, and terminating by the discharge of matter, may be examples of the subperitoneal phlegmon.*

DISEASES OF THE PANCREAS.

PRELIMINARY OBSERVATIONS.—So little is definitely known of the diseases of the pancreas that many systematic writers omit the subject entirely. Recently, however, Dr. Fitz, of Harvard Medical School, has demonstrated some new facts of great value, to which reference is made further on. There are, however, some practical points which should receive attention. The pancreas has an office in connection with the digestion of certain kinds of foods. Like the salivary secretion, the pancreatic fluid transforms starch into dextrine and grape-

* See the paper by M. le Dr. Besnier, "Arch. Gén. de Méd.," September, 1878.