

died and the majority resulted in good union, little shortness, if any, and no stiffness of the hip or knee and no bed sores."

After quoting cases, illustrated with skiagraphs, the author states that after more than twenty years experience he believes that no simple fracture of the thigh cannot be successfully treated by this splint, and if the treatment is carried out in detail the results should be perfect in nearly, if not all, cases.

(J. F. G.)

PERFORATIVE PERITONITIS.

By John B. Murphy, M.D., Chicago. *Surgery, Gynecology and Obstetrics*, June, 1908.

Peritoneal absorption depends on several factors. (1) Pressure of abdominal muscles. (2) Rhythmic, pump-like action of the diaphragm. (3) Peristaltic activity. (4) Vitality of the peritoneal endothelium. Factors hindering absorption: (1) Subperitoneal infiltration; (2) venous engorgement; (3) diminished peristalsis; (4) diminished respiration; (5) lowered abdominal temperature, as by the application of ice bag; (6) drying of the peritoneal endothelium, e. g., by exposure during an operation; (7) lowered intra-abdominal pressure, as after laparotomy; (8) certain positions of body which favor gravitation toward the pelvis, as the Fowler position.

Protection against infection: (1) Peritoneal fluid; (2) plastic powers of peritoneum.

Bacteriology: Colon bacillus, streptococcus, pneumococcus, *B. pyocyaneus*, gonococcus, the typhoid bacillus and the staphylococcus pyogenes aureus are the most important in order given. The colon bacillus is undoubtedly the most important. Death from colon bacillus occurs in the first few hours or not for several days. If death occurs in the first few hours it is due to toxæmia and is usually reported as death from shock; if after several days it is due to a general peritonitis with a cumulative toxæmia.

Death from the streptococcus is due to sepsis. The term free peritonitis should be used for the general diffuse variety and circumscribed for the encapsulated form, regardless of the size.

In perforative cases the first symptom is pain, which comes on suddenly, is intense and of paroxysmal character. It may be so severe that collapse is imminent. Chilly sensations or an actual rigor are not uncommon.

Primary reflex nausea and occasional emesis immediately follows the pain of perforation.

Tenderness is marked, at first localized at the seat of perforation, but as the inflammation advances becomes general. The abdominal muscles become rigidly contracted, with absolutely no respiratory movement.

The pulse is rapid, small, and has a peculiar hard wiry character in the early stages. As the toxæmia increases the pulse becomes softer, irregular and finally fails. The pulse is a more reliable guide than the temperature. The thighs are drawn up, the respiration very superficial and costal in character. The temperature is of little prognostic or even diagnostic value, except there is always elevation at some time, usually early. Nausea is an early and important diagnostic symptom, occurring shortly after the onset of pain; it disappears to return later, associated with distressing vomiting, finally only a gulp occurring every few minutes. The tongue is dry and tremulous, the teeth covered with sordes. The abdomen gradually becomes distended, tense and tympanic, often obliterating the anterior liver dullness. There is a drawn, anxious expression, with sunken eyes, sharply defined nose, hollow temples and a cold, parched skin.

Treatment.—The patient should be placed in the Fowler position at his home the moment the diagnosis is made. He should be taken to the hospital in this position, carried so to the operating room, and operated upon with at least the shoulders well elevated. It is scarcely necessary to dwell on the import-

ance of peristaltic rest by withholding foods, or the application of cold to the abdomen, for lessening the distribution of infective material. The use of opiates for this purpose is to be condemned.

The Line of Incision.—This is to be made over the seat of perforation. The manner of going through the abdominal wall is of little moment and depends upon the individual operator's custom.

Closure of the Leak.—If this be appendix, for the sake of speed clamp it at its base, ligate in the crease made by the clamp, and amputate. Burial of the stump usually entails too much time and manipulation to warrant its execution. If the leak be an intestinal or gastric ulcer, close by a double or triple row of Lembert sutures. Never permit the opening of a perforation to remain patent, depending on drainage for relief. Fenestrated or split rubber tubes inserted to the stump of the appendix or the site of the ulcer and into Douglas pouch, and any other pocket that may exist, is the only form of drainage permissible. Do not wash, scrub or knead. The entire technique should be accomplished in a few minutes, i. e., get in quickly, get out quicker. As soon as the patient is returned to bed, proctoclysis is instituted and maintained until the serious symptoms of intoxication cease. The continuous method is by far the most scientific and suc-

cessful. The fluid should be administered through a fountain syringe, to which is attached a three-eighths rubber hose fitted with a hard rubber or glass vaginal douche tip with multiple openings. The tube should be flexed almost at right angles, three inches from the tip. A straight tube must not be used, as the tip produces pressure on the posterior rectal wall when the patient is in the Fowler position. The tube is inserted into the rectum to the flexion angle and secured in place by adhesive strips. The syringe is elevated sufficiently high to require from forty to sixty minutes for one and one-half pints to flow in, the usual quantity given every two hours. The tube should not be removed from the rectum for two to three days. Opium and its derivatives are never given, either before or after operation. Adrenalin, strychnia, camphor or caffeine are the most valuable stimulants in order named, but are rarely given. Calomel in one-eighth grain doses may be given at short intervals until two grains are administered. If nausea and vomiting are present gastric lavage must be practised. For stimulating peristalsis in the large intestine high enemata of alum water (one-half ounce to the quart) is recommended. Medicinally, the best results are obtained by hypodermic injections of eserine salicylate, repeated every two hours, in doses of one-sixtieth to one-fortieth of a grain. (L. E. B.)

EYE, EAR, NOSE AND THROAT

The Treatment of Lupus and Tuberculous Disease of the Ear, Nose and Throat by Inoculation.

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They report nine cases of lupus and tuberculous disease of the ear, nose and throat treated by inoculation.

Case 1. A girl, aged nine months, tuberculous disease of right ear, October, 1906.

Middle ear suppuration since third month intermittent in character. Slight offensive discharge, causing eczema of auricle. Middle ear filled with granulations, probe disclosing