high as 102°, but as soon as the inflammation of the hæmorrhoidal mass subsided the temperature became normal. There was at no time any evidence of septicæmia, and there was no suspicious discharge nor bad odor from the vagina.

During the second week after labor the patient had almost every day a severe attack of pain in the right hip, which lasted for several hours. This pain was evidently of a neuralgic type, and was at length controlled by the administration of a pill composed of opium, digitalis and quinine. Up to this time the complexion was sallow, the lips pallid, and the whole organism was in an exhausted condition. I should further say that Mrs. B. some years previous had been subject to severe attacks of gastralgia, which only yielded to full and frequent doses of opiates. She had not however experienced such an attack for several months immediately preceding her last pregnancy. I mention these facts because they show a constitutional tendency towards the occurrence of reflex irritation which in its various manifestations comprises, as I believe, spasm or constriction incident to the uterine tissue. These may lead to the development of that peculiar condition known as antepartum and postpartum hour-glass contraction.

TWO CASES OF GUNSHOT-WOUND OF THE ABDOMEN IN WHICH THE HYDROGEN-GAS TEST WAS APPLIED.

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The report of the following two cases is given to show the result of the application of the latest method of diagnosis of perforating wounds of the intestines, as devised by Dr. N. Senn, of Milwaukee.

Case 1.—P. C., male, æt. 50 years, in good general health. Was shot at 2 P.M., July 4, by a man sitting about eight feet directly in front of him. The calibre of the ball could not be ascertained. A physician was summoned, who made an examination, and after introducing a probe several inches, he advised sending the patient to the Hospital. He was brought here sitting in a carriage with no dressing on the wound. Upon his entrance here, 7 P.M., the abdomen was disinfected, the wound sealed, and a hypodermic injection of ♏ vij of Magendie's solution given.

Examination.—Patient conscious, no marked pallor, hands cold. Pulse full and 96 a minute; temperature 99°. Some pain in abdomen. An opening with blackened margins was found just to the right and on a level with the umbilicus from which a small quantity of bloody fluid oozed. Abdomen not distended, but showed a changing line of dulness, corresponding to changes in position of patient, and indicated the presence of fluid in the peritoneal cavity. Liver dulness present. Patient very restless. Introduction of catheter gave about ten ounces of normal urine. Rectum filled with fæces, but contained no blood. After about 15 minutes he vomited for the first time since injury; vomited matter contained no blood. Hydrogen gas was then insufflated, the entire intestinal canal being distended until the man complained of a tense abdomen and "belched up." The gas could be accurately followed, passing through the ileo-cæcal valve with a gurgle, next filling up the umbilical region and finally distending the stomach. During this time the wound was very closely watched to notice the escape of gas. None escaped, but some bloody, serous fluid was forced out by the general distension; and as the wound was all this time covered by fluid, gas would have escaped in bubbles. A stomach tube was then introduced, which procedure caused much straining.

It was decided that the pressure exerted and the escape of gas from the mouth were sufficient proof that the intestinal canal was intact and that laparotomy was not indicated. The wound was dressed antiseptically, patient put to bed at 9 P.M. and treated as after laparotomy. He rested fairly well during night. Urine passed normally. Bowels quiet for three days when he received by mistake some potatoes and mush, after which he had one or two normal bowel movements daily. He was then put on light diet.

July 10th, the wound was dressed and found to be closed. An area of induration was present around the same of the size of a quarter of a dollar, which was somewhat tender. On the same evening patient vomited once, ejecting only the ingesta. The next morning patient felt as usual. The pulse had been between 72 and 96 a minute all this time; temperature between 99° and 100°, At noon patient vomited again and pulse rose to 110. During the afternoon he vomited twice more and pulse gradually rose to 140. Temperature 100°. At 7 P.M. patient bathed in perspiration, pulse very weak.

Dr. Fenger made an examination and found a small tumor in right hypochondrium, which was painful on pressure. No abdominal distension, percussion gave flatness especially over right side. Dr. Fenger decided to make a laparotomy immediately. An incision, 5 in., was made to right of umbilicus. The stomach was found dilated. Recent adhesions between coils of intestines omentum and mesentery. Upon breaking through these, about 8 ounces of thin, milky, purulent fluid gushed out, omitting a slightly fæcal odor. The patient was turned on his right side and the cavity flushed with warm boracic acid solution. The remainder of the peritoneal cavity was protected by shutting it off with a hot towel. A large glass drain was inserted together with some gauze,

abdominal walls closed and dressed. Ether was used as an anæsthetic and continual stimulation was necessary. The abscess cavity was washed out every two hours with warm boracic acid solution. The patient's pulse gradually failed and he expired eight hours after the operation.

Autopsy. Ten hours after death. On opening the abdominal wound the omentum and intestines were found agglutinated. The glass drain was in the bottom of a pus cavity just to the right of the stomach, between it and the turn of the duodenum. On separating the adhesions, three more pus cavities were found; closed off by adhesions formed between the omentum, pancreas, and coils of ileum and possibly following the tract of the bullet or probe. No fluid was found free in the general peritoneal cavity, but all intestines presented a congested appearance. The entire gastro-intestinal canal was searched for perforations, but none were found. The pus in the cavities contained no fæcal matter. The remaining abdominal organs were also found congested. The stomach contained dark grumous matter.

Case 2. Patient, male, æt. 23, in good health, was shot with a pistol, calibre 32, held in his own hand during the act of striking another person with the butt-end. One and one-half hour after injury he was brought to the Hospital. Complained of some pain in abdomen. Vomited shortly afterward and made several ineffectual efforts at defecation. Vomit contained some clots of blood. Dr. Fenger was summoned.

Examination. Patient conscious, very thirsty. Pulse somewhat feeble and 100. A bullet wound was present, one inch to right and on a level with umbilicus. Percussion showed presence of liver dulness and a line of dulness extending down on right side of abdomen in a curved direction, concave toward umbilicus, from liver to pubes, pointing to the presence of fluid in the abdomen. Catheterization gave 6 ounces of normal urine. Patient etherized and hydrogen gas-test applied. On introducing the rectal tube for that purpose, blood was found present in the rectum. The gas, with only slight pressure, was soon heard to enter the abdominal cavity with a gurgling sound, and in a few seconds issued in bubbles from the bullet wound. On application of a lighted candle these burned in spurts. Dr. Fenger decided to perform laparotomy, as the proof was conclusive that the intestines were perforated.

Incision, 6 inches, in linea alba, and subsequently enlarged to 10 inches. A large quantity of blood escaped with a gush. Almost the entire abdominal cavity was filled with blood. Fourteen perforations were found between the ileo-cæcal valve and the stomach; also two severe contusions of the external coats of the intestines, so that it was deemed necessary to cover the places by peritoneal sutures. Besides these, four holes were found in the mesentery in which were numerous bleeding vessels. The perforations were closed by Czerny–Lembert sutures. In two places two perforations were so close together that they were included by one line of suture. At two other points there were four perforations so close together that it was necessary to remove these portions of the gut. This was done by resection, the cut ends closed, and the continuity of the lumen restored by lateral approximation with decalcified bone plates after the method of Dr. Senn.

After all the apertures found were closed and the vessels tied, the intestines were replaced and gas again insufflated. The sutures proved to be absolutely air-tight. Some bubbles, however, escaped from the upper extremity of the incision, but Dr. Fenger thought it came from the peritoneal cavity. The abdomen was flushed, but the patient, from shock and loss of blood, was expiring. During the operation the entire mass of intestines was necessarily exposed, but was kept covered with towels and hot boracic acid solution allowed to trickle over them. Constant stimulation was necessary to keep the patient alive.

At an interval of an hour two infundations of saline solution were made, 16 ozs. being used each time. A marked beneficial effect was noticed on the pulse as well as on the general condition of the patient. Abdominal wound not closed, as the patient had expired. Duration of operation two hours and three-quarters.

Autopsy one hour after death. On removing the intestinal tract the following appeared: Two contusions in the mesentery of descending colon; large contusion with extravasation of blood in transverse colon with a wound in the mesentery; contusion of mesentery at ileo-cæcal valve; contusion of coats of ileum 8 inches above ileo-cæcal valve; extravasation of blood in mesentery 14 inches above valve; perforation 23 inches above valve in intestine (sutured); the same 32 inches above previous (sutured); same 30 inches above previous (sutured); same 18 inches above previous (sutured). Bone plate approximation 9 inches above last, where resection of 3 inches of gut had been made, the resected piece presenting four perforations. Extensive extravasation of blood immediately above this point in mesentery. Contusion of intestine 9 inches above the resection. Contusion and extravasation 29 inches above same point; perforation 47 inches above same point (sutured). The second place of lateral apposition was found 11 inches below pylorus, where 2½ inches of gut with four perforations had been resected. Finally, a perforation was found in the pyloric end of the stomach which was not sutured.

The remaining viscera were found normal. After a diligent search the bullet could not be found, although all the organs were examined, as well as the entire spinal column exposed. A minute dissection could not be made, as the section had necessarily to be stopped, but the supposition was

that the bullet had lodged in the muscles of the back.

REMARKS.—In the first case we have an excellent illustration of the proficiency of the gas-test in cases in which there is no perforation, and we may say with safety that one unnecessary laparotomy was prevented, the exit of the gas through the mouth and the absence of the same in the peritoneal cavity after complete distension, proving that the walls of the gastro-intestinal canal were not broken. This patient was not anæsthetized, and the insufflation caused no inconvenience besides the belching. The secondary laparotomy became necessary after the formation of abscesses along the tract of the bullet. The formation of these was undoubtedly the result of infection through the external wound and not through extravasation of fæces.

In the second case we see the gas escaping in bubbles with the greatest ease from the bullet wound in the parietes, removing all doubt as to the diagnosis. In this instance the gas-test might be said to have been superfluous, as the other symptoms and signs were conclusive, but the time occupied was so short, and the result so striking that the procedure can hardly be criticised. This method of diagnosis will do its good work by its negative results, and will undoubtedly prevent many unnecessary exploratory laparotomies, as it did in this first case, and it should be applied in all doubtful cases before a patient is exposed to the great danger incurred by exposure and close examination of the entire abdominal cavity for the purpose of searching for that which does not exist.

Furthermore, by the application of the test after all perforations found have been sutured, the existence of more apertures may be ascertained by the escape of gas; it also proves the competency of the intestinal sutures, and the permeability of the canal at the points where the bone plates are used.

The gas-test was applied in the presence of Drs. Price, Allport, Brown, Hodges, Hart, Hickey and Hektoen.

I. THREE SUPRA-EPIGLOTTIC BENIGN NEOPLASMS. II. A NEW PROCEDURE IN THE TREATMENT OF CYSTIC GOITRE.

Read before the Section on Laryngology of the Ninth International Medical Congress, Washington, D. C., September, 1887.

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I. Three supra-epiglottic benign neoplasms.

(*a*) Cyst of posterior pharyngeal wall.

This was the case of a poor woman about 27 years of age whom I saw in my clinic. Her only symptom was dysphagia, and the constant evidence of something "sticking in her throat." A direct examination revealed a cyst of the mucous membrane, about ½-inch in diameter and projecting fully ⅜-inch from the posterior pharyngeal wall, a little below the level of the tonsils. With a curved pointed bistoury the sac was freely laid open from below upwards. To the inner surface tinct. ferri hydrochlor. was applied, and the patient made a quick recovery, though until she ceased her visits there was some thickening at the site of the cyst.

A mucous cyst projecting from the back of the epiglottis, and partly covering the glottis, is recorded by Durham (Med.-Chir. Trans., xlvii), also retro-tracheal gland-cysts are described by Prof. Gruber which opened by several sinuses into the trachea.

(*b*) The second case is one which is yet under observation (August 10, 1887). A young married lady, very nervous but of good physique, was brought to me on account of an incessant cough and some difficulty in swallowing. A papillary growth was found, having its origin just below the left tonsil, but entirely distinct from it. The papilloma encroached upon and hung over the left wing of the epiglottis. It was as large as an ordinary Malaga grape, having a thick, strong pedicle. The patient declined operative interference, but I succeeded in getting her to consent to the application of a destructive agent. Chromic acid was repeatedly applied to the pedicle, and in a fortnight the nutrition of the tumor was evidently much impeded, and in another week it sloughed so nearly off that it was easily detached by forceps. The troublesome cough is nearly gone, though the patient has yet some irritation about the original site of the tumor, but this is disappearing.

Luschka (*Virchow's Archiv*, vol. l), and Sommerbrodt (*Ibid.*, vol. li), have each described cases of pharyngeal papilloma, while Mackenzie (Diseases of the Throat and Nose, vol i) refers to several cases varying in size from a pea to a small grape. This author also refers to two preparations of pedunculated tumors removed during life, now in the museum of the Royal College of Surgeons.

(*c*) Chondroma of epiglottis.

I will merely refer to this case, as I recorded a full account of it, with the bibliography to date, in the *Amer. Jour. of the Med. Sciences*, April, 1879. The patient was a stock-raiser, æt. 44. A tumor was found occupying the left margin of the epiglottis, extending about 3 lines into the substance of the normal tissue, which caused difficulty in swallowing and some pain. It was easily removed by rectangular cutting forceps, and the margin rapidly healed. The growth was a chondroma directly connected with the epiglottic cartilage.

II. A new procedure in the treatment of cystic goitre.