jury on a criminal case, and, with pistol in hand, he was demonstrating how a man might accidentally shoot himself in the abdomen; and, when he pointed the weapon (which was unfortunately loaded) toward his own abdomen, it went off, and the ball perforated the peritoneal cavity. He fell to the floor, and died in twelve hours, without reaction, for he died of internal hæmorrhage. If the abdomen had been promptly opened, the bleeding vessels could have been secured, and a valuable life saved.

Do men ever recover spontaneously from gunshot-wounds of the abdomen perforating the peritoneal cavity? Rarely indeed, if the bowel be wounded above the brim of the pelvis.

At Sedan, we had seven cases of shot-wounds of the abdomen, and they all died, most of them within twenty-four hours. I made *post mortem* examinations in several of these, and in all found large quantities of reddish serum in the pelvic peritoneal cavity; and, in all, death was evidently the result of septicæmia caused by this reddish serum. There were several cases of recovery, where balls passed through the pelvis, wounding the bladder or bowel, or both; but no recovery where the wound was above the brim of the pelvis.

We had three cases of pelvic shot-wounds that recovered in the Anglo-American Ambulance at Sedan. In one case, "the ball entered on the left side of the coccyx, traversed the rectum and bladder, and emerged just above the symphysis pubis. For a considerable time, all the feces passed by the posterior opening, while the urine flowed entirely by the anterior wound. He recovered without one single unfavourable symptom. Both wounds had closed by the 18th September (seventeen days after the battle), and remained so till his discharge from hospital on September 28th, when he appeared as well as if nothing had happened to him" (*Notes and Recollections of an Ambulance Surgeon, etc.*, by William Mac Cormac, pp. 73, 74. 1871). Sir W. Mac Cormac saw three other cases of pelvic gunshot-wound involving the bladder recover without accident, two in a Belgian ambulance, and the third under Dr. Junker's care at the Chateau de Bazielles. Sir W. Mac Cormac further says, "There were some other cases of similar injury which I did not see, but which, I was informed, were doing well".

Four days after the battle of Sedan, I went to Mézières for supplies for the wounded soldiers. Travelling under the banner of the red cross, we were hailed at almost every hamlet, and asked to visit sick and wounded. Amongst the great number demanding our care, my son, Dr. Harry Marion Sims, called my attention to a young German who was shot through the pelvis. The ball entered about two inches above Poupart's ligament, and midway between the linea alba and the crest of the ilium on the left side, and passed directly back through the pelvis, wounding the sigmoid flexure. Fæces passed freely by both openings, but, of course, more freely by the posterior, as he lay mostly on his back. His pulse was but 78, and there was no pain or tension in any part of the abdomen; and he had every appearance of a rapid recovery. He was among French wounded, could speak only his own language, and his greatest suffering was from nostalgia. When my son spoke to him in German, and gave him every assurance of a speedy cure, and of early removal to a German ambulance, it raised his drooping spirits, and I have no doubt that he eventually recovered. He was shot through and through the pelvic peritoneal cavity, perforating the bowel, and yet there was not the least constitutional disturbance, nor the first symptom of peritonitis. This was four days after the wounding.

Thus, at our Sedan ambulance, we had three cases shot directly through the pelvis; one at the ambulance at Bazielles, one on the road to Mézières, and two at the Belgian ambulance; seven in all. Thus, seven shot through the pelvis all recovered, and seven shot through the abdomen all died in about twenty-four hours.

Professor Montrose A. Pallen, who had a large experience in the Confederate Army, saw a case recover, where the ball passed through the bladder and out through the left ilium; and Professor von Nussbaum says, "I have seen cases get well in which the bladder and rectum were shot through and through, the ball making not only an inlet, but an outlet as well".*

Major Gardner, surgeon, United States Army, has given me the histories of four cases of recovery from shot-wounds of the pelvis, two during the war, and two since.

1. General X. Ball shattered radius of right arm, entered abdomen, right side, three inches above Poupart's ligament, perforated colon, and passed out at right sacro-iliac junction; radius right arm resected; feces passed by both entrance and exit openings. Returned

to duty in three months, wearing pad on posterior fistulous track, through which fecal matter passed in small quantities. This healed soon after, and the General lived many years in perfect health.

2. Ball passed transversely through both ilia, wounding bladder; wore a catheter. Three weeks after, there was urinous odour at the exit in left hip. Patient soon got well.

Two others, with similar pelvic wounds of bowel, recovered speedily. In all these cases, shock was less than when balls perforate the abdominal cavity. In one case, there was perfect reaction in four hours.

Dr. Thomas J. Murdoch of Baltimore gives me the history of a man wounded at Gettysburg. The ball passed antero-posteriorly through the bladder and bowel. He frequently passed feces through the urethra as well as by posterior opening. In seven weeks, he left hospital well, and returned to duty.

Now let us sum up these pelvic gunshot-wounds, which have occurred under the observation of my personal friends: at Sedan, seven; Dr. Pallen, one; Dr. Gardner, four; Dr. Murdoch, one; total, thirteen.

From my Sedan experience, it would seem to be an exception for a man to recover if shot through the abdomen; and it appears to be exceptional for a man to die when shot through the pelvis. Why do men recover from gunshot-wounds perforating the bladder, bowel, and peritoneum in the pelvic cavity, and not from gunshot-wounds perforating the intestine and peritoneum in the abdominal cavity? The explanation is very simple. In the first case, there is natural drainage of septic matter directly from the pelvic cavity along the track of the ball, and the patient lives. In the other case, drainage is impossible, because the septic matter falls into the pelvic cavity, is there retained, and then absorbed, and the patient dies of blood-poisoning.

[To be continued.]

THE DIAGNOSIS OF EPITHELIOMA OF THE TONGUE.

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MOST surgeons will admit that, if operations for the removal of epithelioma of the tongue are to be undertaken with any prospect of permanent success, they should be performed at the earliest possible period of the disease, while yet but a small segment of the tongue is affected and the lymphatic glands are sound. Most surgeons will agree, therefore, that a certain and early diagnosis of epithelioma of the tongue is exceedingly to be desired. No means, however, are described by which a certain and early diagnosis can be effected. The characters which chiefly are relied on are, the sinuous outline of the epithelial ulcer; its raised, everted, nodular borders; its glazed, or foul and ragged surface; and the surrounding induration. But every surgeon knows how often one or the other of these characters is absent, and how often many of them are simulated in a tuberculous or syphilitic ulcer, and how difficult the diagnosis of certain cases is, not merely in their early stages, but when they have existed many months. Mr. T. Smith's case, reported from the St. Bartholomew's Hospital consultations in the last volume of the JOURNAL (1881, vol. ii, page 1015), affords an admirable illustration of the difficulty of distinguishing between epithelioma and tertiary syphilis of the tongue. It shows, too, the disastrous result which follows the practice of deferring an operation until the effect of anti-syphilitic remedies has been observed.

This watching of malignant ulcers, and studying the effect of remedies upon them, is so common, that a surgeon, so far from being blamed for following it until the disease is too far developed for operation, would more probably be blamed for adopting the opposite principle, and freely cutting out a disease of doubtful nature. It is at present impossible to make a certain diagnosis of all forms of malignant ulcers in all parts of the body; but in the tongue I believe it is possible, and not extremely difficult.

The structures of which epithelioma is composed are very characteristic, and lie so close to the surface that they can easily be procured for examination by scraping the surface of the ulcer with a blunt knife or Volkmann's spoon, or any similar instrument. In addition to pus and blood-corpuscles, *débris*, and microzymes, numerous epithelial cells are always present, but differing widely from the normal epithelium of the tongue. Many of them are smaller than the normal cells; others are much larger; the nuclei of both kinds are several times larger than the normal nuclei. All the cells are granular; some of them are clouded and opaque with granular matter. Some contain large round or oval spaces, clear and well defined. Many of them have more than a single

* On Drainage of the Peritoneal Cavity and Intraperitoneal Injections. A contribution to the Treatment of Wounds of the Peritoneum, and Ovariectomy, by Professor von Nussbaum, staff-surgeon, etc., 1873.

nucleus, and some contain smaller cells with nuclei and nucleoli. The shape of these abnormal cells varies as much as does their size; some are round, some oval, some quadrangular or polygonal, some tapering at one end, and some at both ends. With these distorted and fantastic cells, normal epithelium may be mingled; but the normal cells are few in number, while the diseased cells are many. The following sketch represents the scraping from the surface of an epithelial ulcer of the tongue in a man aged 53, in whom the glands beneath the jaw were extensively diseased. Here, pus-cells, blood-cells, healthy, and diseased epithelial cells, are present.

Fig. 1.

Sometimes, and not unfrequently, even more characteristic structures than any of those described are found; *i.e.*, cell-nests, or portions of cell-nests. Two of these are represented in the accompanying sketch, taken from the scraping of an epithelial ulcer of the tongue in a man forty-three years old.

Fig. 2.

I first applied this method of examination in the case of an epithelioma of the tongue in a young man, where the diagnosis was difficult, partly on account of the patient's age (29). The microscopic characters of a scraping dispelled all doubt of the nature of the disease. I have since used it in several difficult cases, with the greatest satisfaction. In order to prove that the test is reliable, I have made sections after removal of the epitheliomata which have been scraped and examined before removal, and have thus been sure that the diagnosis was correct. I have also examined scrapings taken from other kinds of ulcers of the tongue, and have never found structures resembling those of epithelioma. Pus-, and blood-, and granulation-corpuscles are present in large quantities. Micrococcus-masses, *débris*, and normal epithelium are almost always present; but diseased and altered epithelial cells are not found. The scraping from which this sketch was made was taken from a very destructive syphilitic ulcer of the anterior portion of the tongue of a man. The ulcer healed with exceeding quickness under ten-grain doses of iodide of potassium. (The large granular body is a micrococcus-mass.)

I can, therefore, confidently state that the structures I have described are found in epithelial carcinoma of the tongue, and that they are not found in any other kind of ulcer with which I am acquainted. I cannot yet say when these structures begin to be formed, and therefore how soon an epithelioma may be recognised by examining a scraping from it. But I know that they are early formed: for I have found them in ulcers of only a few weeks' duration, which few persons would have ventured certainly to diagnose and treat as cancerous, had it not been for their presence.

I do not, of course, allege that this proposition, thus to examine malignant ulcers, is original; but I desire to place it on a firmer footing

than hitherto; to show how far it is reliable, and in what cases it should be used.

Fig. 3.

The method is very simple, and very easily applied. The surface of the ulcer to be examined is cleaned by lightly brushing it, or gently scraping it with a blunt instrument; a slightly deeper scraping is then taken, mixed with a drop of water on a glass slide, and examined with a quarter-inch power, or No. 7 Hartnack. The pain produced by this operation is so trivial that it seldom calls forth a complaint; and the scraping may be repeated several times, if necessary, without seriously inconveniencing the patient. It may be employed, not only for epithelioma of the tongue, but for squamous epithelioma (squamous-celled carcinoma), whenever it occurs in accessible situations. I have used it for epithelioma of the upper jaw, the face, the penis, and the uterus. I am afraid it cannot be employed, however, for malignant ulcers other than squamous epitheliomas with any degree of certainty; for the structures of which most of them are composed are not sufficiently characteristic to be easily recognised.

One caution may be given. It must not be too hastily assumed that an ulcer is not epitheliomatous because these structures are not at once discovered. If its general characters be suspicious, it should be repeatedly examined before a definite conclusion is arrived at.

I hope it will not be believed, because I recommend so strongly this method of diagnosis, that I am insensible to the general characters of epithelial ulcers, or that I desire others to take no notice of them. On the contrary, I think they should be as carefully studied in the future as in the past; and, when any of them can be shown to be reliable in diagnosis, the microscope should be dispensed with.

AN ANOMALOUS CASE OF INFANTILE HEMI-PLEGIA.

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THE patient whose history is narrated below was exhibited in the museum at the recent International Medical Congress. The case is one of great interest, both from a pathological and a clinical point of view. The patient is a boy aged 13, whose family are free from all neurotic tendencies. He has been subject to fits, occurring at intervals of from one to five months or more, since he was one year old. When a child three years of age, he had a fall, since which (according to the friends' statement) he has been paralysed in both legs and right arm.

The fits are preceded by irritability of temper, and by a distinct aura, consisting of a "nasty taste" in the mouth. Movements with trembling then begin in the right hand, and rapidly extend over the rest of the body. During the attacks, he bites his tongue, and foams at the mouth. After the fit, the patient is drowsy, dull, and sometimes so weak that he is confined to his bed for four or five days. With the exception of an attack of chicken-pox, and the presence of worms when he is constipated, the patient has suffered from no other complaint.

The boy was admitted into St. Thomas's Hospital, under Dr. Bristowe, on account of a severe epileptic attack, which left him uncon-