

the most effective in the destruction of germs have proved most useful in the treatment of septicemia. It is a fact well observed and established beyond question that washing out the uterus with antiseptics in cases of puerperal fever is followed by most remarkable results in the reduction of temperature and pulse. Carbolic acid was first the favorite remedy, but solutions of bichlorid of mercury seem to possess so many advantages that it is among the most popular remedies because it is more destructive to germs. Toxic effect has been charged to both remedies, but bad results only occur in improper use or strength. So I would use solutions which destroy germs and produce antiseptic results, and thus save cases from the development of those much to be dreaded forms of disease, pyemia, septicemia and puerperal fever. This answers the questions at the head of this paper, and shows us that prevention in surgery as in medicine takes the form of the trans-Atlantic writer: "The medicine of the twentieth century, viz: Sanitary science and surgery."

THE TREATMENT OF OPEN FRACTURES.

Read by title in the Section on Surgery and Anatomy at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

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If aseptic surgery had been practiced only in the treatment of open (compound) fractures, it would have accomplished much for humanity. It is safe to say that there are not one half as many amputations performed since the commencement of the present treatment as formerly. Lives have been saved that otherwise would have been sacrificed, and useful limbs are now seen where a few years ago, a wooden substitute was worn as a perpetual reminder of the shortcomings of the surgical art. The aseptic treatment of an open fracture requires first the thorough cleansing of the limb and the wound. The limb should be shaved and washed clean. Irrigation with boiled water is the best means of securing cleanliness of the wound. If there should be venous oozing, it should be stanching with hot water, or irrigated with a bichlorid of mercury solution 1 to 4,000. The styptic effect of this solution is at once seen in the bleaching and drying effect produced. Any spurting vessel should be tied with carefully sterilized catgut. The next step is to secure accurate coaptation of the fragments, sharp splinters (spiculæ) should be removed, but broad fragments, even when considerably comminuted, should be readjusted. The elevator and the heavy bone forceps will be frequently needed to bring the fragments into position. It is well known that the principal causes of non-union, outside of constitutional causes, are: 1, want of apposition; 2, interposition of muscles; 3, excessive motion. Every care should be taken therefore to avoid these causes of non-union.

Direct fixation of the fragments is one of the most important indications. This may be accomplished by periosteal suture or bony suture. I have many times secured good union in bones of the foot, for example, by the periosteal suturing of the fragments. Chromicized catgut or whale tendon should be used, and a sufficient number of stitches taken to bring the fragments together. In case the obliquity is such

the fragments can not be brought together by periosteal suturing, then the osseous suture may be made; after trying many expedients, and experimenting with many kinds of suture, I have reverted to silver wire as being that best adapted to the work. These sutures in some soft bones may be passed obliquely through with a stout needle, but generally a small drill hole must be made to enable the passing of the wire. The wires must after twisting, be left long and project from the wound so as to facilitate easy removal.

I have had no experience with the use of bone dowel plug placed in the medullary canal to secure fixation. It has seemed to me so liable to be septic, and there must be so many practical difficulties in the way of final removal, as to make it a dangerous appliance.

In five cases I have used the bone ring introduced to the notice of the profession by Professor Senn. In every case there was suppuration, and I have abandoned it, until such time as we shall be enabled to sterilize the ring. It is yet so far from perfection in that regard, as to make it almost certain that the wound will become infected. The principle may be yet found useful by the invention of some different material. The bone ring (or thimble) has one advantage, that is the great amount of exudate (forming callus) which is excited by the presence of the ring. So pronounced is this effect, that in cases of ununited fracture where there is no attempt at the formation of callus, the ring may be used to advantage notwithstanding its general lack of sterilization.

The condition of the soft parts must next be looked to. Indeed it is a matter which is scarcely secondary to the proper treatment of the fractured bone. Wounded tendons, torn muscular structures and lacerated nerves should be sutured according to the rules laid down for the respective tissue involved. Stout chromicized catgut will be found useful for tendons, and fine flexible catgut for nerves. In case the distal and proximal ends of a nerve or tendon can not be brought together, they may be sewed to the nearest adjoining nerve or tendon. All this takes time, but it will be well spent. When the wound is cleaned the bones are brought together, and the soft structures thus attended to, then irrigation is again practiced and the external wound closed by sutures of silk-worm gut. Extension is usually not necessary if the fragments have been brought into perfect apposition, nor is there much difficulty in retaining them. External support should be secured by a plaster-of-paris bandage, and when necessary a fenester cut opposite the wound.

In complying with the wishes of our distinguished chairman, to keep within the ten minute line, it will be seen that I have chosen rather to support the existing practice, than to compile the literature of the subject, and if more attention shall be directed to methods of suture of the soft parts, in addition to bone fixation, the paper will have served its purpose.

FISSURE OF THE ANUS.

Read in the Section on Surgery and Anatomy, at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

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The lesion known as fissure of the anus is an elongated oval ulcer from one-fourth of an inch to an inch in extent and of variable depth. By many authors it is designated irritable ulcer or painful

ulcer of the anus. Bodenhamer classified fissures, according to location, into four varieties; but for the purpose of this paper the term will be applied to those having their seat in the skin and mucous membrane, external to the white line of Hilton, the line of demarkation between the external and internal sphincter muscles. The favorite location of anal fissure is upon the dorsal surface but this general rule has many exceptions. It may consist of a small linear abrasion, capable of detection only by careful inspection, but more often it will be observed as an indolent ulcer with indurated base and rigid walls varying in depth from one to three lines. Externally its existence is often marked by a superficial hemorrhoidal tumor, the "sentinel pile" of Ball. Upon exploration with a probe it is customary to find one or more excessively tender points within the boundaries of the ulcer. There is a tendency to hemorrhage in many cases but this condition is by no means constant.

Anal fissure has been observed occasionally as early as the first year of infant life, and is now and then met with in persons of advanced age. A very large proportion of cases, however, occur during the period of adult life between the ages of 30 and 55.

It is generally alleged that it is found oftener in women than in men but my own observation does not verify this statement. For obvious reasons, persons leading an inactive or sedentary life are more subject to anal fissure than are those whose employment demands active physical exercise. Among the various causes to which this lesion is ascribed, the chief and most apparent one is habitual constipation. Constipation in turn that may have been accidental and quite amenable to simple treatment, having resulted in the establishment of a small fissure is by the latter rendered incorrigible through the peculiar reflex influence of the ulcer upon the sphincters, the rectum and the digestive organs in general. As a result we find that the gravity of the structural lesion and the functional derangement correspond closely.

Anal fissure is a common and serious complication of all structural diseases of the rectum. Pain when an attendant circumstance of rectal ulcer, hemorrhoids, rectal stricture and syphilitic manifestations always suggests the possibility of the co-existence of anal fissure. In penal institutions the practice of sodomy is an alleged cause of this lesion, and violence done the parts by scratching in pruritis ani, and forcible distension during parturition are among the more infrequent causes of the same trouble.

Allingham alleges the earliest symptoms of anal fissure to be morning diarrhea. The patient is called to stool instantly upon arising, but usually with an unsatisfactory result, a small loose motion containing viscid mucus matter sometimes streaked with blood. This is succeeded by tenesmus and an uncomfortable burning sensation, and the experience may be repeated several times during the early hours of the day. As the disease progresses it is characterized by intense, agonizing, paroxysmal pain during and subsequent to an evacuation. This symptom is wholly out of proportion to the pathologic lesion which underlies it, and as often attends an apparently trifling erosion as a deeper more extensive ulceration. It undoubtedly depends upon the exposure of filaments of the pudic nerves, which are distributed over the area below and adjacent to the external sphincter. In pronounced cases this pain is

described as well nigh unbearable, and the act of defecation is regarded as an ordeal so terrible that the patient is often compelled to seek relief in the hypodermatic use of morphia. It usually persists for a protracted period, during which absolute quiet in the recumbent position is rendered imperative. Temporary relief ensues but the suffering recurs with each effort to unload the rectum.

Numerous reflex disturbances are also ascribable to this condition. Obscure and tantalizing bladder pains are common to both sexes. Prostatic irritability in the male, uterine colic and ovarian neuralgia in the female are frequently noted. The appetite is impaired, the digestive function badly sustained, nausea and vomiting ensue, and the resulting condition is that of emaciation and extreme nervous irritability and prostration.

An effort at digital examination is always stoutly resisted by the patient on account of the exaggerated sensibility of the part, and in a fair proportion of cases this step can only be taken after the production of profound anesthesia.

Since several small fissures frequently exist, some of which may be deeply concealed by anal folds, the use of a speculum is essential to a thorough knowledge of the situation. For this purpose I have found a heavy wire bivalve instrument exceedingly efficient, in that it permits an almost continuous view of the entire anal circumference.

There is a wonderful unanimity of sentiment regarding methods to be adopted for the relief of this most distressing malady. It is certain that the disease, save when it occurs coincidentally with malignant trouble is amenable to some form of treatment.

Cases which are a sequel of syphilitic infection are successfully met by the usual constitutional remedies, combined with the use of mercurial ointment locally.

In recent and comparatively mild cases scrupulous cleanliness, careful attention to the bowels, an abstemious diet, cessation from labor, and the application of a stimulating ointment will suffice to effect a permanent cure. I have found an ointment composed of a drachm of creolin and an ounce of lanolin a very efficient agent. To this may be added belladonna, cocain or opium as occasion may demand. I believe the use of nitrate of silver has been generally abandoned. In the more advanced and urgent cases, pure nitric acid, or acid-nitrate of mercury retain a few advocates. It is probable that they may be useful where a resort to more radical and seemingly rational measures is prohibited by the patient. Cooper and Edwards, however, in their work upon diseases of the rectum and anus unhesitatingly denounce the use of caustic applications of all kinds as "useless and mischievous."

Matthews, on the other hand, for those cases wherein radical measures are inadmissible, employs pure carbolic acid as a topical application and as supplemental to this he highly recommends a daily injection of an olive oil emulsion of iodoform, 5 grains to the ounce. The frequent occurrence of a persistent and annoying dermatitis in the anal region, as a result of the use of iodoform, has led me to abandon it entirely. We know that the skin of many patients is peculiarly susceptible to the irritant effect of this drug; and this fact has caused me to regard it always with distrust.

Under the head of radical treatment two plans are included; dilatation and incision. Owing to the ex-

treme sensitiveness of the anal region neither method should be attempted without the use of an anesthetic.

If simple dilatation is to be resorted to, it may be accomplished by inserting one or two fingers of both hands well into the rectum, and stretching the sphincters by drawing upon them in all directions; or the same end may be attained by the use of a powerful speculum. The process should be persisted in until the sphincters become perfectly relaxed, and must usually be repeated several times before perfect relief can be obtained. It is claimed, however, that a single introduction of a speculum for purposes of examination has now and then completely eradicated the difficulty.

The combined plan of treatment by dilatation and incision has been found so efficient and satisfactory that it has received the sanction of by far the larger number of operators. By no other method can we hope for so rapid and perfect relief from the main feature of the disease, the excruciating pain which attends and follows an evacuation. The details of the procedure are very simple. The rectum having been thoroughly washed out and the patient etherized, the fissure is exposed between the blades of a speculum. A free incision is then made through the floor of the ulcer extending at either end considerably beyond its limits. If the lesion be of long standing and deep seated, the knife should be carried into and across the border of the external sphincter muscle. Subsequently the process of dilatation should be fully completed as before described. After treatment consists in maintenance of cleanliness and attention to the bowels.

A PLEA FOR THE EARLY AND SYSTEMATIC REMOVAL OF THE INGUINAL LYMPHATIC GLANDS.

IN CASES OF MALIGNANT GROWTHS IN REGIONS FROM
WHICH THESE GLANDS RECEIVE LYMPHATICS.

Read in the Section on Surgery and Anatomy, at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

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The rule that operations for the removal of malignant growths should include also the removal, not only of glands already perceptibly enlarged from secondary deposits, but also those which from their anatomic relations to the primary growth are likely to become the seat of secondary disease, as now quite generally followed in operations for mammary cancer, has been productive of much good. The fact that we can not determine by our examination whether a gland, though not perceptibly enlarged, may not after all be the seat of a secondary deposit, and the further fact that when those glands nearest the primary seat of disease have become enlarged, others more remote may in turn have become infected,—these facts form a sufficient argument for the general adoption of the above rule wherever practicable.

I was somewhat surprised therefore, on looking up the literature on malignant growths of the external genitals and the lower extremity, to find how little was said in our standard text-books concerning the management of the inguinal glands in such cases.

Two cases occurring in my practice during the last

half year, brought the importance of this subject to my attention so strongly that I concluded to use them as a text for this plea for early attention to the glands in such cases:

Case 1.—M. K., male, aged 48 years, single, farmer, German. Family history good, except that one brother died of cancer of the stomach when 27 years old. Phimosis since childhood. During the summer of 1892 noticed swelling at end of penis. This was followed by inability to void urine, use of catheter, purulent discharge from the swelling and hemorrhage. Penis amputated near its root, March 20, 1893. No glands extirpated at that time. Several weeks later some enlarged glands were extirpated in the left inguinal region, but others in the same locality, as well as in the right groin, began to enlarge almost immediately.

Present condition (July 4, 1893) appearance of cachexia, although general nutrition fair; stump of penis healed, except a small granulating surface around urethral opening. Testicles healthy. Both groins occupied by large masses of enlarged confluent glands, those on the left in a more advanced stage, and the skin covering them sloughing, the abdominal walls considerably involved, the masses very painful. Thorough removal being out of the question, parenchymatous injections of pyoktannin were tried, which was effective in so far as they prevented all odor; but the disease progressed rapidly and ended in death Oct. 3, 1893, less than seven months after the primary operation. There was no return at the primary seat of disease nor any evidence of metastases in internal organs.

Case 2.—Mrs. D., aged 67 years, married, American. Family history shows no cases of malignant disease. Severe pruritus and eczema vulvæ for past fifteen or twenty years; lately severe burning and sharp pains. Examination shows a flat epithelioma, about an inch in diameter, involving the clitoris and upper portion of the left labium minus, which was excised Nov. 18, 1893. Careful examination at this time failed to detect any enlarged inguinal glands. Healing rapid, mostly by first intention. About five weeks later, several glands in left groin became rapidly enlarged and were extirpated Jan. 11, 1894. No infiltration outside of the gland capsules. Glands contained large cysts filled with grumous, semi-purulent matter. Every particle of gland that could be detected by the touch was removed. Healing again rapid, leaving a small fistulous track leading to the bottom of the wound, with slight grayish, liquid discharge. Recurrence in same locality within a month, the swelling increasing rapidly involving the skin and occupying the entire left inguinal region. The right side remained unaffected. Third operation Feb. 15, 1894. Removal of entire contents of left inguinal region, including skin, adipose tissue and glands down to the deep fascia, as well as the glands lying along the large vessels and belonging to the deep inguinal group. The removal of all the tissues mentioned was not difficult, the region of the vessels being left until the very last. Wound partly closed and packed with iodoform gauze; it remained in good condition, but showed no tendency to heal. The patient rallied well from the operation, but after a week began to fail from exhaustion, or possibly, secondary internal complications, and died March 4, two and one-half weeks after the last operation and less than four months after the extirpation of the primary disease. No return at primary seat of disease.

These cases show clearly that there must have been secondary deposits in the lymphatic glands at or before the time of removal of the primary disease, notwithstanding the fact that they were not perceptibly enlarged. They further show the great tendency of malignant disease of the external genitals to secondary location in these glands, and the great malignancy when once it has become thus located.

If malignant growths are of local origin, the early and thorough removal of the primary disease, as well as of those structures which are almost invariably the first foci of secondary invasion, can be reasonably expected to lead to a fair percentage of permanent cures, as has been sufficiently shown by the results of extirpation of the cancerous mamma, with simultaneous clearing out of the axillary space. On the other hand, if the glands are left until they have become enlarged, the results will as a rule be very