

Dominion Medical Monthly

And Ontario Medical Journal

Vol. XLV.

TORONTO, AUGUST, 1915

No. 2

Original Articles

ADDRESS ON SURGERY*

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It is one of the privileges of age to be reminiscent, and when asked to give this address I thought it would be interesting to look back and see what changes have taken place in the science and art of surgery since I entered as a medical student in the fall of 1869.

It is well for the present generation of surgeons to be aware of the condition of affairs in the pre-antiseptic days and to have some conception of the dangers and difficulties of surgery at that time. What is easy to the present generation was a source of difficulty then, and it is well to know that surgery was not born thoroughly equipped as was Minerva, the Goddess of Wisdom and Wars, Arts and Sciences, when she sprung full grown and completely armed from the brain of Jupiter.

The efficiency of surgery has been arrived at by a slow process of evolution. There had been but little advance in surgery for some time before I entered medicine. Lister was just being heard of in Glasgow as applying Pasteur's germ theory to surgery and trying to find some substance which would destroy the organisms he was convinced were the cause of sepsis and suppuration. But the germ theory was not yet admitted by surgeons in general and especially were the London surgeons opposed to it and even made fun of Lister's antiseptic efforts.

I remember my first experience of surgical responsibility was sitting up at night after an amputation of the thigh so as to be present and apply a tourniquet in case of secondary hemorrhage. At that time only one end of the silk ligatures was cut

*Read before the Ontario Medical Association, May 27, 1915.

short, the other hanging out of one corner of the flap, chiefly, they said, for drainage. During my student days it was rare to have an amputation of the thigh live until the ligature came away on the 14th day, the patient usually died of shock or pyemia the first week; I do not think I ever saw an amputation of the thigh high up recover.

Surgical operations then consisted chiefly of removal of external tumors, amputations for injury or disease, cutting for stone and opening abscesses. The abdomen was a *mare clausum*, and if by accident the peritoneal cavity was opened the fate of that patient was sealed and the church was his only salvation. Still the surgeons of that day were most skilled operators as they had learned their business in pre-anesthetic times, and it was a common thing to see an amputation of the leg or thigh done in sixty seconds and a complete lateral lithotomy under two minutes. I remember Sir William Ferguson of King's College Hospital, London, operating in a dress suit with much expanse of shirt front and cuffs and being so clean an operator that he prided himself on never getting a drop of blood on his white shirt. Most operators used an old frock coat which was never cleaned and so was soaked in the gore of many victims. Some washed their hands, others did not, the field of operation was rarely cleansed except the wound caused by injury was full of dirt. All compound fractures of the leg were amputated at once so as to avoid certain death from sepsis, the only exception was when the bone had made a punctured wound, the wound would be closed by congealed blood and healed in that way under clot.

In my last year of studentship Professor Wm. Fraser, who had spent the summer in Scotland, introduced Lister's method of opening abscesses under lint soaked in carbolic oil. At this time there was no such thing as trained nursing, any old person was employed who thought they had a gift that way, and did their best; many of them imbibed, for at that time every patient was given an allowance of beer, whiskey, or port wine daily and the night nurses especially were seldom sober. I remember in the seventies paying a visit to a patient in the hospital on whom I had that morning operated for strangulated hernia. I could not find the nurse at all (she supervised three flats), but my patient I found sitting out on the verandah in his night shirt smoking a pipe and all the obstreperous or delirious patients strapped to their beds. It was a cool evening in the autumn and my patient died of pneumonia some days afterwards.

I do not want to imply that we had no successes, for I have seen very many brilliant successful lithotomies, removal of tumors and amputations, and I have even seen healing by first intention. But it was strange that one of our surgeons, a very skilful operator, but who after operating visited his patients but seldom, had better results than his colleague, a much more conscientious man, who also was fond of pathology and liked to see the post-mortems on his patients and fussed a good deal over his cases. Needless to say the latter's results were not remarkably good.

We knew nothing about germs at that time and thought that putrefaction was caused by the oxygen of the air. When Pasteur demonstrated that putrefaction was caused by microbes Lister by his previous work, from his student days under Sharpey, was prepared to welcome this discovery and he says in his Third Huxley Lecture: "Thus was presented a new problem; not to exclude oxygen from wounds, which was impossible, but to protect them from the living causes of decomposition by means which should disturb the tissues as little as is consistent with the attainment of the essential object." Since then it has been proved that putrefaction is not the only cause of serious mischief in wounds, for there are microbes which are odorless and yet produce profound septic effects.

At this period and for some time after it was a common thing for the operating room orderly to be also orderly in the post-mortem room. Hence the better results of operations performed in the country or private houses than those performed in hospitals. When I visited London in 1873 I found the results of the surgeons fairly good, in fact London and English surgery was always clean and the results excellent for that period, and this is one of the reasons why antiseptic surgery made such slow progress in London. Whilst in Germany the surgery of that time was very dirty and neither personal cleanliness nor the cleanliness of hospitals a distinguishing feature, the results were accordingly bad, hence Listerism was adopted with avidity and the change to antiseptic surgery revolutionized the German methods with such amazing improvement in the death rate that soon they out-Listered Lister.

When I was in Vienna in 1874-5 antiseptics had not yet been introduced and surgical mortality was tremendous. I never saw an operation for strangulated hernia recover and sepsis prevailed everywhere, even the great Billroth had often disastrous results; twelve years later when I visited Europe

again what a change had taken place ! Hospitals and operators clean to excess ; operations never hitherto attempted performed successfully, a very low surgical mortality, and surgery invading every region of the body and annexing territory which formerly was thought to be the exclusive domain of the physicians.

In 1874 I visited Edinburgh to see Professor Lister's work and a great impression it made upon me. John Cheyne was then his house surgeon and if I remember aright he manipulated the hand spray of carbolic solution which was used during the operation and dressings. What struck me most was the excessive care of Lister in his dressings, the great attention to detail and cleanliness ; and in operating, his great deliberation. The spray was used on the supposition that most of the germs which infected wounds came from the atmospheric dust ; when Lister found that the atmosphere was comparatively harmless and that the organisms were on the skin of the patients and the hands and implements of the operator he abandoned the spray. As many of you may remember, the hand spray was replaced by a steam spray. In Germany this was furnished by a large boiler placed in an adjoining room which poured forth carbolic acid spray into the operating room and covered everybody with a thick Scotch mist ; in fact one could scarcely see across the room and to protect oneself waterproof clothing had to be worn. This of course was German excess. Later von Bruns led a crusade against the spray and "fort mit dem spray" was the cry and soon the spray was replaced in Germany by irrigation. Niagaras of water were poured over the patient and the field of operation, so much so that the floors were flooded and the onlookers had to get on chairs whilst the operator and his assistants waded through the flood in long rubber boots.

Soon irrigation became out of fashion and aseptic and dry dressings were adopted which in ordinary surgery are used to the present day. In military surgery asepticism is impossible and resort is once more being had to antiseptics with the best results.

The scope of surgery in comparison to what it was forty years ago is enormous—no cavity of the body is now shunned by the surgeon ; had such advances been prophesied in the middle of last century the lunatic asylum would have been thought a fit place for the prophet.

As I have said before one of the great troubles after amputation was secondary hemorrhage—one saw hanging out of

one corner of the stump a number of waxed linen or silk threads; some were on small vessels, others on large, and the surgeon making his rounds looked at the stump and pulled at one or other of these threads to see if they had ulcerated sufficiently to come away! Very often with the ligature came a gush of blood. This secondary hemorrhage required the reopening of the stump and the vessel secured, no easy matter with the instruments then in use and in a suppurating granulation surface. Sir James Y. Simpson, to do away with ligatures and their dangers, introduced what he called acupressure, a method to compress arteries by means of metallic needles introduced in various ways. At the same time Lister began to cut both ends of his ligatures short and leave them to their fate buried in the tissues; this was before he introduced absorbable ligatures of catgut. Although good results were obtained from acupressure, and many cases of healing by first intention were reported, yet Lister's ligatures won the day and soon Simpson's method passed away and is now quite forgotten.

Abdominal operations are now as safe as any other major cases and our knowledge of germs, how to control their evil effects and to prevent their invasion, makes most operations in surgery comparatively without much risk. Appendicitis, or inflammation of the bowels as it was called, was thought to be a rare disease and was not considered at all surgical. The common medical term was typhlitis, with peri—or para—as additions. It was thought to commence in the cellular tissue around the cecum or typhlus, or cecus. In a short time our greater knowledge of pathology properly placed the blame on the appendix. Operations were then rarely performed, except for peri-typhlitic abscess. At first operations were never undertaken unless pus was found by the exploring needle, and the search for the appendix was always a matter of difficulty. The first twelve cases I operated on all died, because I was only called in to operate when the physician thought he could do no more; then the surgeon was the *dernier ressort*. At this time diagnosis was not easy and appendicitis was often mistaken for typhoid. It seems absurd now to know with what difficulty physicians and surgeons diagnosed this disease and then only after many anxious and serious consultations, whilst now every man and child in the street could make a diagnosis from a verbal description of the case. But so it is, and what is difficult and obscure in one generation often becomes simple and clear in the next.

It is strange to look back and see the gradual growth of abdominal surgery; at first the only operation on the abdomen was an obligatory one, viz. for strangulated hernia and this was done with serious forebodings. Soon operations were performed for ovarian tumors and ovaries without tumors, and successfully carried out by Lawson Tait, Spencer Wells, Keith and others. In fact we are indebted largely to Lawson Tait for his pioneer work in abdominal and especially pelvic surgery. Ovariectomies, since MacDowell's famous case, were performed from time to time with occasional success, but when I studied in London every case I saw operated on proved fatal. With our knowledge of the germ theory and with the introduction of Listerism the obstacles to recovery were removed and ovariectomy became a common and safe operation. Surgeons rapidly adopted Listerism and "boomed" it and in a short time were doing all the operations hitherto only suggested, such as excision of the stomach, intestines, kidney, spleen, et cetera. From pest houses German hospitals became sanitariums and as the *Lancet* of August 13th, 1881, observed at the time "our admiration for the change effected is only equalled by our horror of previous conditions." Many German surgeons advocated the compulsory use of antiseptics and Professor Naussbaum, in 1881, suggested the following law: "Any person summoned to heal an accidental case or wound, must no longer close it up with an adhesive plaster, nor examine or disturb it with a finger which has not been disinfected; but after the surgeon has washed his hands and the wound with some disinfectant (for which purpose a five per cent. solution of carbolic acid seems to be the most convenient), the wound must be thoroughly protected with an antiseptic dressing. Such dressing may consist of carbolized jute or wadding, chloride of zinc wadding, or some other well known antiseptic material."

Simon first removed the kidney designedly in 1869. In 1881 an occasional excision of the kidney is reported and papers were read on the subject at the International Medical Congress in London in 1881. I think it was Mr. Henry Morris who first successfully removed a stone from the kidney where there was no suppuration (in 1880). I first excised a kidney successfully in 1884 and a stone in 1886. My first gall stone operation was in 1890.

It is interesting to look back on the past literature and to study the conditions of surgery at that time. In 1888 I gave the surgical address before the Canadian Medical Associa-

tion in Ottawa and spoke among other things of the surgery of the abdomen and the information given below is extracted from that address: "It was strongly advised that all cases of intestinal obstruction be handed over to the surgeon and not kept on medical treatment by the physician until it was too late to operate." Surgical treatment was recommended in all cases of suppurative appendicitis and a few advanced surgeons advocated early operations. Typhoid perforations were being occasionally operated upon, always with fatal results. It was found out accidentally when operating for tumor in a mistaken diagnosis that tubercular peritonitis could be cured by opening the peritoneal cavity. Perforating gunshot wounds of the abdomen were being immediately operated upon. Radical cure of hernia was becoming a safe and fashionable operation. The surgery of the gall bladder was looming up as an accepted and successful fact. Lawson Tait reported thirty cases of cholecystostomy with one death. Crede of Dresden had had only five cases with one death, and Langenbuch of Berlin had collected 75 cases of cholecystotomy with 2 relapses, 11 deaths, and 16 cases with fistula resulting. He advised against operation when the stones were in the common duct.

Occasionally cases of operations on the stomach, intestines, spleen and pancreas were reported but with few successes. The operations of nephrectomy and nephro-lithotomy had become well established. In 1888 prostatic surgery was yet in its fatal infancy, though tumors of the bladder were being operated on. In other departments of surgery, the brain and spinal cord were fields of operation just becoming known through the work of Victor Horsley, Keen, Macewen, Weir and others.

Surgery is still advancing and is enlisting more votaries than ever, nearly every new graduate wishes to become a surgeon. Every small place has now a well-equipped hospital with excellent facilities and every opportunity is offered for the prosecution of the art of surgery. I am afraid there is often more art than science and much unnecessary operating because now most operations are comparatively safe. There is something more than mere mechanical skill needed by surgeons. The most important attributes of a surgeon are judgment and knowledge when to operate and when not to operate and when to stop—mechanical knowledge of surgery can never teach this. I remember some years ago visiting a small town west of Montreal and operating in a well-appointed little hospital and afterwards was shown no less than four cases of extirpation of

the uterus operated on by four different surgeons, all I am happy to say convalescing (the patients, not the surgeons). What amazed me was that there should be such a necessity for so many such operations in so small a place. In our own large hospitals in Montreal I had never seen so many cases together in the gynecological wards. I remember hearing of another case where a good surgeon in a large city of the United States operated for appendicitis on the only child of very prominent people. After removing the appendix, as the cecum, or what they thought was the cecum, was full of feces, it was opened and the feces evacuated and then the wound was closed. A few days later a fecal fistula appeared which would not close. The boy's condition from the continuous drain and irritation became bad and an anastomosis operation was advised and done. Still the fistula continued and he grew rapidly worse. He was brought to Philadelphia and a prominent surgeon was consulted, who told me the tale. An exploratory incision was made but nothing could be done as there was so much agglutination of the intestines and the boy's condition so serious. At post-mortem it was found that the appendix was still in situ and had never been removed. It was the upper part of the ileum and not the cecum from which the feces had been evacuated and which was fistulous, but the anastomosis of the ileum with the colon had been a perfect success. Hence you see here a well marked case of technical skill without knowledge. I could relate many analogous cases, but refrain.

As long ago as 1887 Professor Bergmann, at the German Scientific Medical Association, spoke the following impressive pregnant words which are applicable even to-day. He said: "There is more or less rivalry between medicine and surgery in the case of disease but further progress in surgery can only take place through an increased knowledge of internal medicine. Surgeons must now avail themselves more of the accurate means of investigation which one owes to physicians, auscultation and percussion, thermometry, chemical, microscopical and electrical investigations. As long as internal medicine remains guardian of scientific medicine and scientific principles, so long will it remain the parent tree of which surgery is only the branch. . . . It follows from what has been said that surgery owes all its recent development to clinical medicine and just as anti-septic treatment is the product of careful observation in etiology so the energetic procedures of internal surgery will have successful results only when firmly established by the methods of

clinical medicine; otherwise surgery will sink in the hands of expert specialists to a mere display of manual dexterity."

Surgeons soon felt that they could not be good internists and have a competent knowledge of all branches of surgery, so this has led to team work in private and public hospitals which makes for such efficiency and enables the surgeons to do an enormous amount of work. This method, however, is apt to make the surgeon a mere operating machine and may not work out for the entire good of the profession. It is better for a surgical department to have a head who has gone through all the stages of medicine including a sound course in pathology and pathological chemistry and who has a good training in clinical medicine. Of course his department is equipped with a staff of specialists in pathology and chemistry but he himself should be the guiding hand and suggest and direct the work to be done. It goes without saying that every one who practises in the country must do some surgery, but he should not attempt it without having had some hospital training as a surgical interne after graduation. The tendency of the younger surgeons is to look upon the older men as having had no proper training; they call us pre-scientific and seem to think that laboratory methods are everything. I remember a pathologist giving a lecture to the incoming students in a medical school and he told them that laboratory methods had supplanted all others, including experience, which the older men prided themselves upon. I had happened to have had some ten days before a serious gunshot wound of the arm in a boy where the brachial artery and biceps muscle and some of the nerves had been shot away, where, in fact, the whole arm was shattered. He had pulled the gun to him by the barrel when it went off. The whole forearm was waxlike, bloodless, cold and absolutely no circulation existed. I was advised to amputate immediately, by a colleague, but refrained, and after treating and dressing the wounded arm, wrapped the extremity in layers of cotton wool. In 24 hours there was a slight flush in the fingers and in three days the limb was warm and afterwards the case went on well. Now I asked my friend, the lecturer, how he could tell by any laboratory method, whether to amputate or wait. Of course he could give no answer, and no doubt he thought he was quite right, but he had never practised surgery and had never been up against a case which required judgment and experience, and yet he was quite willing to speak *ex cathedra* to men who were going to practise medicine and surgery. I may say the boy

alluded to has a most useful right arm, with which he can play a good game of tennis. As the Psalmist says, "I am wiser than the aged," so say the younger men of every generation, but remember what Huxley says: "We are none of us infallible, not even the youngest." I admit as we get older we become more conservative, and perhaps procrastinate, but this is the infallible result of long experience.

How many methods have we older men seen come and go, lauded to the skies by eloquent advocates both in societies and journals; we often hear of remedies and methods by which every case is cured and dozens who have made use of them print undigested articles confirming the originator's views and improving on them; some would find them only suitable on selected cases, and finally this remedy or method is forgotten because it is of no value and could not stand the test of experience. As Byron said in his poem, "English Bards and Scotch Reviewers,"

"Thus saith the Preacher: 'Naught beneath the sun is new.
 What varied wonders tempt us as they pass?
 The cow-pox, tractors, galvanism, gas,
 In turns appear to make the vulgar stare
 Till the swoll'n bubble bursts and all is air?"

Although I am as much an advocate of laboratory methods as the most scientific younger surgeon, yet they should not replace those powers of observation which are the great asset of the medical man. I fear it is tending to do so, for the recent graduate dares not diagnose a fracture without X-rays, a typhoid fever without a Widal, syphilis without a Wassermann, and so on. We cannot always carry a laboratory or hospital appliances about with us, so we should not depend too much on the use of mechanical means in diagnosing disease, and should not let our powers of observation atrophy. Time, no doubt, will remedy this state of affairs and things will bear their proper proportion to one another. Some are very sceptical that this will occur and think there is nothing true or sure but mutability. As Moore says,

"This world is all a fleeting show,
 For man's illusion given;
 The smiles of joy, the tears of woe,
 Deceitful shine, deceitful flow,
 There's nothing sure but Heaven."

For the sake of the wounded in the present awful war, it is fortunate that surgery has attained such a high pitch of efficiency and that hospitals are now so well arranged and managed. What a contrast to that which existed in the Crimean War, when Florence Nightingale did so much to clean out the Augean Stables whose doors were closed with red tape. Now from the field to the base hospital everything is done for the wounded in the quickest possible time, and in the most skilful manner, and the proportion of recoveries is proportionately large. I am glad that Canada is doing so well and is so eager to establish hospitals. The Universities deserve great commendation for the way they have come forward to man the various hospitals with their best teachers, best surgeons and physicians and specialists. All honor to them and to the Canadian nurses and students who go with them. We are all sure the work will be well and scientifically done, and reflect credit not only on the British Empire, but on the whole of Canada and its professional men and women. May God go with them and prosper them!

CLEAN DERMATOLOGY*

BY DR. ALFRED EDDOWES,
President of the New London Dermatological Society.

It was a relief to my mind when you requested me to open a discussion instead of reading a formal address on becoming your President for the current year—a year that will ever be remembered for Germanic brutality. While choosing a subject, I asked myself what had helped me most in my own practice. The answer seemed to come involuntarily:—A guiding principle in the management of skin diseases—in two words *clean dermatology*. In surgery no advance has ever equalled in importance that resulting from the introduction of the antiseptic principle by the immortal Lister. In dermatology we cannot apply antiseptic treatment quite as in surgery. In surgery we prevent infection or we destroy it and then seek to prevent recurrence. In dermatology our difficulty is to obtain asepsis. If we can do this in many cases, the treatment is finished, the case is cured. Observe the difficulty,

*Read at the May meeting of the New London Dermatological Society.

say, in a case of ringworm, red eczema, sycosis; mild or strong remedies may fail unless handled with skill.

Quite recently I saw a case of impetigo spread all over the face of a child who had had too weak a lotion applied for the initial small lesions. If we apply too mild antiseptics we allow disease to spread. If we use them too strong the skin inflames. The problem is quite different from that ordinarily involved in surgery—so we want a modified guiding principle. We all know that dermatologists have largely employed a spirit solution of soap and many also know that Besnier often used soap and water on eczematous surfaces, still this idea seems to have remained much as antiseptics before Lister's time. Housekeepers fumed jars for fruit, heated jam-pots, boiled milk pails and salted bacon long before Lister was born. It required Lister to explain and give us our guiding principle. Yet, just think of the time it took to convince the world and even the profession. I am sure that the science which we possess, thanks to Lister, has not yet become so practically applied in dermatology as it ought to be to-day.

I will proceed to prove my contention by a brief account of illustrative cases. Some months ago I saw several cases of red eczema on scalps of children in a skin clinic. It was pointed out to me that these cases were very rebellious and I was asked if I could suggest anything for them.

My answer was—clean once with spirit and then cover up with a paste for a whole week. This chemical cleaning acted like magic. All who saw the result want to get such cases now instead of fighting shy of them as before. The cleaning did it. The paste was already being used.

In 1902 I published notes of an exceptionally bad case of eczema cured chiefly by cleaning. I will read the notes as they are very brief.

“*Acute eczema affecting head, trunk, and limbs.*—This case was a very severe test for any kind of treatment, and proved instructive. The patient, a lady between thirty and forty years of age, had suffered continuously, and more or less severely from eczema for fifteen months before I first saw her. She was often confined to bed, and had to take soporifics to procure sleep. I found her so worried by “itching, smarting and burning,” and many of the patches were so inclined to weep and form crusts, and were so tender, that I had no doubt about the suitability of zinc-gelatine as a dressing for most of them. So I went home and soon returned with my glue-pot full of the necessary material. As soon as I produced it from my bag the patient exclaimed, ‘If that is zinc-gelatine, please don't put it on me. Mr. —’ (one of the

ablest of living surgeons) 'used it and found it did not suit me. I cannot bear it.' My reply was to this effect: 'I am sorry and surprised to hear that. If so able a surgeon has failed to cure you, I must undertake your case with a sense of grave responsibility. Nevertheless, as his preparation and mode of application may have been different from mine, and the condition of your skin may have altered, I hope you will let me treat you as I think best.' She agreed with me, and I proceeded to cleanse and dry all patches about to be dressed with the gelatine in my own way—i.e., with spirit and powder, taking care always that the powder used contained a permanent non-irritating, rather insoluble antiseptic. There is one remedy which fulfils this purpose better than any other with which I am acquainted, and I have advocated its use for that reason on several occasions during the last ten years. (10 years plus 12 equals 22 years ago.) I mean calomel. The skin, then, was wetted or gently wiped with spirit, and, while the spirit was evaporating, a dust was applied, composed of four parts of starch and one of calomel. Time was then given for the spirit to thoroughly dry up or soak in before the gelatine was painted on, and covered in turn in the ordinary way by thin bandages or cotton wool. We must provide against rancidity of the fatty secretions of the skin as well as chemical changes in the sweat and *debris* of dead epithelial cells, and I do not see how we can expect this necessary asepsis if we paint our gelatine on a greasy, dirty (i.e., septic) surface. To do so is to forget to apply the greatest teaching of modern surgery. The reason why we should wait for the evaporation of spirit is a practical point of importance. It is this: If the gelatine comes in contact with the spirit it tends to become hardened and therefore does not adhere to the skin, especially at parts subject to much movement. As I anticipated, the lady changed her opinion of 'the gelatine' in a few hours, and made a rapid recovery. Five years and more have elapsed without any return of the disease."

I hope to show a case to-day which many of you saw several months ago. *Generalized eczema* in an otherwise healthy, strong young man. He had history of a bicycle rash which gradually developed into an awful and almost fatal eczema: which existed for two years in defiance of hospital treatment in London and elsewhere. He had injections of auto-vaccine (staph. alb.), but all to no purpose. He will tell you that he attributes his cure chiefly to use of spirit followed by boric acid as lotion or ointment. So do I. The secret of success was the principle "clean" antiseptically, then soothe with dressings mild but antiseptic enough to hold on to the ground gained.

Here is an instructive case. A relative of mine, himself a medical man, contracted furunculosis of the nostrils in the tropics, for which he was given an antiseptic ointment. This was applied for months before I was consulted. I found pus in a follicle which in culture gave a pure white staphylococcus. I advised a continuance of the ointment and a cleaning with methylated spirit on an extemporised brush made of cotton wool twisted on a match. Improvement was apparent within a few days. Lately I hear the patient thinks the spirit cleaning cured him. In this simple manner several cases of this kind which have come under my care have been cured after other methods including use of vaccines had completely failed. The principle is extremely useful in the treatment of infected nails and in even the most rebellious cases of psoriasis.

Here is a little list of substances for cleaning in mild cases and in severe, in infancy and in manhood. Boric acid solution, carbolic acid solutions of various strengths—alcohol—and especially methylated spirit because, though cheap, it is exceedingly good and—in cases where we can trust patients with highly inflammable substances, ether is now and then most efficacious. When there is a doubt about the patient's reliability it is better for the practitioner to keep this latter drug in his own hands and use it himself. I recommend it specially as an adjunct of value in parasitic diseases of the nails and in obstinate patches of psoriasis and lichensiation. It has the incidental and important advantage of dissolving vaseline!

In conclusion, pray excuse my brevity and any apparent want of care in putting these hurried lines together. My thoughts are so constantly disturbed and my time so much occupied owing to this ghastly, criminal war.—*Medical Press and Circular.*

SKIN CANCER AND ITS TREATMENT

(*Interstate Medical Journal.*)

BY ISADORE DYER, PH.B., M.D., OF NEW ORLEANS.
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Louisiana.

The types of skin cancer are numerous; in a clinical grouping, though, the pathologist would distinguish all of them as epithelioma and perhaps divide the degrees of structural changes which occur. To the practical, everyday medical man, however, the

objective evidences mean more than the microscope may prove, and this article is written to present some simple facts for the guidance of those practitioners to whom the patient comes first for advice as to simple evidences.

The predisposing influences in skin cancer are age (maturing), and the presence of anomalous lesions of the skin, such as warts, moles, seborrheal patches, prior skin diseases of persistent type (xerosis, keratosis, lupus, syphilis, etc.), and injuries of local origin.

The chief contributing causes are dandruff (lighting on a spot predisposed, eyeglasses impinging upon a roughening spot), irritation of any sort, including the persistent picking of the individual, the pipe, cigar or cigarette of the smoker.

The epithelial cancer may occur at any site, but predilects the nose, lip, eyelids, *alæ nasi*, cheeks, ears, necks, backs of hands, and the genitals. The cancer itself may begin with a thickened scaling patch, a cystic gland (or glands), a leucodermic patch (as on the lips and tongue), in an excoriation with thickening borders and base; in a granulomatous change in a fibroma, nevus, wart or other tumor, or it may start in the site of an old scar of luetic origin.

The ages above forty predispose, and the older the subject the more likely are keratinous spots to break down into malignant growths.

Epitheliomata are often self-limited and self-destructive (e.g., the benign cystic epithelioma), but more often, once established, they persist and are apt to go on to an increased growth with proportionate destruction.

Any scaling patch on the skin covering a wart of granular base is suspicious and any scaling wart, mole, or small growth is suggestive of cancer. Seborrheic patches, particularly, found on the face and neck will go on to destructive lesions if not checked. Accumulations of epithelial cells, as in cutaneous horns, genital cystic glands, scars from old herpetic eruptions, may be the sites of explosions.

Many epithelial cancers will persist as simple excoriations, lasting for years, only to grow suddenly deeper and to develop the rodent ulcer, or, as vulgarly called, "rose cancer."

A mole, ordinarily a mere blemish, soft and flabby, will slowly grow firmer and change in the quality of its fibroid structure, the hyperplastic overgrowth becoming granulomatous and finally breaking down. A simple sessile wart on the eyelid will thicken in its base, push up the warty surface, form a granulomatous foundation and slough off, fulminating into a large ulcer, taking in even the sclera itself.

Scaling lips will fissure and heal and do this repeatedly over years; in the lines of breaking skin there will form either small thick warts or excoriated thickened masses, finally forming cancers. Pigment dots on the backs of the hands will scale in older subjects, growing darker, even black in color, and then break into small open ulcers, crusting often, but never healing.

These are types of epithelial cancers demanding early recognition and attention.

The diagnosis is easy, but usually is not made early enough.

In the movement for the dissemination of the knowledge regarding cancer, more stress should be laid on these skin lesions than is usual; for when they are disseminated, as so often happens, over the face and neck, the treatment is more uncertain and the result problematic. More than this, the metastatic possibilities are large with so many foci, any one of which may become suddenly active and destructive.

In spite of the recent widespread discussion of cancer, the treatment of cancer is still a matter of uncertainty among men who practise medicine and not surgery.

It is the object of this paper to convey some of the means available to the general practitioner in caring for skin cancer in cases where radical surgical interference is not indicated or where it may be of doubtful service. No such discussion should be undertaken, however, without the frank declaration that where a skin cancer is so placed that free excision, without undue mutilation, can be practised this should be the procedure of choice, and, when chosen, that the excision should be extensive enough to preclude any likelihood of any remnant of the growth. The types of skin cancer here considered explicitly embrace those discussed as epitheliomata and exclude those malignant growths beginning in deeper structures or primarily involving them.

The treatment of epithelial cancer is essentially destructive and may be effected by the use of acids, caustics, pastes, plasters, the thermocautery, the galvanocautery, the high frequency current, the *x*-ray, and radium.

Acids.—More harm than good results from the usual employment of acids, such as carbolic acid and nitric acid, for these only irritate the surface and actually stimulate growth. To accomplish any good with acids, the treatment should be distinctly escharotic, and the only acid which is of real service is the *trichloroacetic*, or *glacial acetic acid*, used pure. The indication is only in keratinous spots in keratotic cancers where there is no great depth; in other words, where there is only a localized thickened epidermis of epithelioma proclivity. The method is carefully to

surround the area to be burned with a stiff ointment, or to paint around the spot with collodion, or to cut out of a piece of adhesive plaster an outline of the growth, so that the healthy skin may be protected against leakage of the acid; of course no ointment should cover the area to be treated. A drop or more of the acid is applied to the growth by means of a glass rod. The spot, in from two to three minutes, should turn white, *when the acid should be promptly neutralized* with carbonate of soda. The resultant eschar will dry hard, as a rule, but in any event comes away in a few days, after which the ulcer remaining should be treated as any simple ulcer, with cleanliness, stimulating dressings, etc.

Caustics.—*Chloride of zinc* in saturated solution and the acid *nitrate of mercury* may be exemplified as the only serviceable caustics, used as such. With both, the surface of the growth (and this treatment is indicated only in small growths) must be denuded, the area about the growth protected as indicated under *acids*. The chloride of zinc solution should be applied on cotton saturated with it and should be left in place ten to twenty minutes only, lifted for examination of the area treated, replaced and re-examined until the eschar (usually white) shows. Then the area should be well washed and dried and kept wet with boric acid solution until the slough separates, which should be within three to five days.

The acid nitrate of mercury is applied just in the same manner in all particulars as the trichloroacetic acid, always with the same precautions as to the time of application (about three to five minutes, *depending on the area affected*) and as to *neutralizing the acid afterwards* with bicarbonate of soda (the carbonate may also be used).

Under the head of caustics should be named *liquid air* (employed by those expert in its use, and hardly to be recommended to others) and *carbon dioxide snow*.

The *carbon dioxide* has a large usefulness in all epitheliomata of either granulomatous type or of semi-fibroid formation; it is of very little service in open ulceration, or in large areas. The ease of application commends this remedy. The *snow* is collected from an ordinary tank of carbon dioxide gas, by enveloping the escape opening of the tank with a chamois skin sac, or an improvised cylinder of blotting paper (2 or 3 in. long and $\frac{1}{2}$ in. or more in diameter) held together with an adhesive plaster. The snow packs slightly as it escapes, but may be packed into the shape of a cone by the use of an ordinary ear speculum; the author frequently uses the cap of a fountain pen to make the mold for the

application. As a pencil, held with its end against the growth, with a pair of forceps, the stick of carbon dioxide snow is firmly pressed into the spot to be treated and so held for thirty to sixty seconds, by the watch, or by counting. The process freezes the growth, which becomes red afterward and may have an area of swelling about it for twenty-four to forty-eight hours. In twenty-four hours the area in contact with the snow will blister. This blister should be allowed to collapse, dry and crust without interference. At the end of four or five days the whole top will slough off, usually leaving a simple excoriation, which heals kindly, under ordinary Z. O. plaster, daily dressings.

Pastes.—The best of the pastes is Bougard's.* It should be used with great care, and never near a mucous orifice, as the eye, genitalia, or on the lips. It should not be used over an area larger than a 25-cent piece, though it may be repeated several times in a cancer of a larger size than this, provided that a second or other subsequent application should not be made until the first or previous application has been completed in all its detail. This detail follows:—

First, denude the surface of the growth with a curette; stop the bleeding. Measure the size of the growth (or ulcerated area) carefully; then form a mold of the paste just large enough to cover the exact area; lay this over the area and cover well with Z.O. plaster. Where the area is large, the cancer painful, the patient advanced in years, 10 per cent. cocaine may be added to the paste by rubbing the cocaine (in solution) into the paste at the moment of using. There will be pain and this will last most of twelve to sixteen hours. Twenty-four hours after application the paste should be removed. The area of the eschar should then be kept moist with wet dressings, flaxseed meal or other warm poultices, until the slough comes away, usually in four or five days. The application is then "complete," and a second or other subsequent application may be made in the same manner.

The ulcer remaining after the use of the paste is usually clean and healthy and may be closed in a week to fourteen days by the use of a 15 to 20 per cent. ointment of balsam of Peru in zinc oxide ointment, changed night and morning.

*Bougaard's Paste: (1) Wheat flour, 4 dr.; (2) Starch (powdered), 4 dr.; (3) Powdered arsenious acid, 4 gr.; (4) Powdered cinnabar, 4 gr.; (5) Sal. ammoniac, 20 gr.; (6) Corrosive sublimate, 2 gr.; (7) Zinc chloride crystals, 4 dr.; (8) Boiling water, 1 oz. The first six ingredients are thoroughly mixed and reduced to powder. The chloride of zinc is dissolved in hot water. The chloride of zinc is now added *gradually* to the first six ingredients (already mixed), thoroughly stirring until a mass is formed of the consistency of putty, but jelly-like in its resiliency. The mixing should be done on a water bath and the paste when made should be kept in glass.

Plasters.—Resorcin plaster and salicylic plaster (made with rubber and lead plaster on muslin) may be employed in keratinous areas on the face, neck and hands, especially where these are numerous, superficial and in widespread patches. The plasters may remain on over night or for twenty-four to forty-eight hours at a time.

The definite advice should go with the use of the plasters to use soap and water freely and briskly when the plasters are removed, and before they are re-applied. Judgment must be exercised and must be acquired in determining when the plasters have been used long enough.

The *thermo-cautery*, *galvano-cautery*, and the *high frequency spark* may be considered under one head, as they serve the same general purpose, with differences in their individual application. The galvano-cautery is of service in lesions in the buccal cavity and on the tongue, on the borders of the eyelids and about the genitalia, where the heat from the actual cautery (Paquelin) or a stray spark from the high frequency current might be irksome or might do damage. In other places it has decidedly less usefulness.

In small lesions the fine platinum point of a Paquelin cautery has no succedaneum. It is surgically complete in its perfect destructiveness and in its aseptic eschar left behind, with no bleeding in the process. Even where lesions are large enough for removal first with the curette, the Paquelin cautery serves to complete the destruction and to stop the bleeding.

The high frequency spark may be used in larger areas, and especially where a rapid procedure is desirable. When a fine electrode is employed, definite areas may be quickly destroyed and the action may be as deep as may be desired. More than this the high frequency current is invaluable in preparing an area of disease for *x-ray* treatment.

X-Ray.—The *x-ray*, again, is a remedy which falls within the practice of the expert and should not be employed by the tyro. Its usefulness is large and serves in all kinds of skin cancer. It is of most service, however, in clearing up scaling, precancerous areas, in treating areas which have been operated, or which have been treated by the local measures above described with a view to preventing recurrences. Inoperable or relapsing cancers are often benefited by judicious *x-ray* treatment, and often rodent ulcers of considerable size and malignancy will yield to the intelligent use of the *x-ray*, administered by those expert in its application.

Radium is of supreme value in cancers which are inaccessible, as those in the concha of the ear and those on the lip. It is of

greatest value in the epitheliomata of the eyelid, when the conjunctiva and the sclera are involved. Its use is yet in the experimental stage, but the results reported by various observers and those obtained by the author of this paper justify the opinion that it is a valuable remedy when employed intelligently, and in skin cancers it has a certain known therapeutic efficiency.

Radium is expensive, and its use is, therefore, limited so far as its availability is concerned. It will clear up superficial skin cancers, even when ulcerative, with one application of 10 to 30 mgrm. of radium element, used for one or two hours. We are not citing cases, but dealing only with remedies and their methods of usage, so we shall proceed to the technique.

Where superficial action of radium is desired, the applicator (either in the form of a disc, covered with a hard varnish, or in the form of a container of silver carrying the radium salt) is covered with thin lead foil and held in contact with the lesion for the time necessary, varying with the case from one hour to several hours. The shorter the exposure the less likely a burn. Where penetration is desired, the application must be longer and the screening must be used to protect the skin and tissues from all but the gamma ray, which is the factor in penetrative treatment. The effects of radium are slow, sometimes requiring two or three weeks before a reaction shows. There is usually no destructive action from radium, if care is used in screening with brass, rubber, rubber plaster, aluminum, etc., in individual cases. The usual reaction is a profound erythema, sometimes with dermatitis and erosion of the skin, rapidly disappearing after it has reached a crisis in inflammation.

This review of skin cancer has been presented with considerable detail, almost primitive in places, but this method has been followed in order that those already practised in the treatment of skin cancer may overlook the crudities in the paper, while those most interested, the rank and file of practitioners, may be able to gather some points which may help to save some of the victims of cancer among the large number of those unconsciously condemned to this class and who only need the discerning judgment of the family physician to employ some simple means to prevent or cure those cases not yet ready for the surgeon or the expert.

124 Baronne Street.

Reviews

Dorland's American Pocket Medical Dictionary. Edited by W. A. NEWMAN DORLAND, M.D., editor "American Illustrated Medical Dictionary." Ninth edition, revised and enlarged. 32mo. of 691 pages. Philadelphia and London: W. B. Saunders Company, 1915. Flexible leather, gold edges, plain, \$1.00 net; thumb index, \$1.25 net. Canadian agents: The J. F. Hartz Co., Ltd., Toronto.

That 70,000 copies of this pocket dictionary have been sold indicates that it fills a real need. The medical student can find no readier or handier aid in his studies. Indeed, it comes in handy on the general practitioner's desk. There is a table of doses in both apothecaries' and metric system, as well as a veterinary dose table, of practical import to country practitioners.

A Manual of Personal Hygiene: Proper Living upon a Physiologic Basis. By American Authors. Edited by WALTER L. PYLE, M.D., Philadelphia. Sixth edition, revised and enlarged. 12mo. of 543 pages, 138 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$1.50 net. Sole Canadian agents: The J. F. Hartz Co., Ltd., Toronto.

There is no better book before the public and the medical profession to-day on the subject of Personal Hygiene than that of Pyle. When it is considered that it has gone through six editions since 1900, it may be accepted as having kept closely in touch with all the advances upon the subjects it deals with. In a word, it teaches all to live upon a physiologic and hygienic basis. The new edition is copiously illustrated.

Neurographs. A Series of Neurological Studies, Cases, and Notes. By WILLIAM BROWNING, M.D.: Brooklyn, N.Y. Alfred T. Huntington.

This is a Thymus-Stammer Number. The subject dealt with is: The Etiology of Stammering, and Methods for its Treatment. As there are 120 pages of text, it may be considered the subject is dealt with in an exhaustive manner. There are several illustrations.

News Items

Queen's University Base Hospital has gone to the Dardanelles.

Dr. Edward Kidd, Trenton, Ont., has obtained a commission in the R. A. M. C.

Dr. Wm. Gunn, Clinton, Ontario, has returned from a three months' trip to the Pacific coast.

Queen's University Hospital Corps, which sailed from Montreal on the 20th of July, has arrived in England.

Dr. Howard D. Harrison, Milton, Ont., is chief surgeon in the Welsh Metropolitan War Hospital, of 900 beds, London.

Drs. Graham Chambers, J. J. Mackenzie, Gilbert Royce, and Stanley Ryerson, Toronto, have been doing hospital work in London.

Dr. Robert D. Rudolph, Toronto, who was home on short leave, has returned to his command of No. 2 Base Hospital, Boulogne, France.

Lieutenant-Colonel Andrew R. Gordon, Toronto, is home on sick leave. He went abroad with the University of Toronto Base Hospital. His many friends in the medical profession will wish him a speedy return to his accustomed good health.

Dr. R. E. McConnell, Montreal, who was doing medical work for the British Government when war was declared, was stationed in Uganda, British East Africa. He was appointed second in seniority on the Uganda staff, and will not return to Montreal this summer as he expected.

Dominion Medical Monthly

And Ontario Medical Journal

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Published on the 20th of each month for the succeeding month. Address all Communications and make all Cheques, Post Office Orders and Postal Notes payable to the Publisher, GEORGE ELLIOTT, 219 Spadina Road, Toronto, Canada.

Vol. XLV.

TORONTO, AUGUST, 1915

No. 2

COMMENT FROM MONTH TO MONTH

Cancer has occupied considerable space in most of our American exchanges during the past two or three months. There is a nation-wide campaign on in the United States, instituted and fostered by the American Society for the Control of Cancer. Many valuable papers have been contributed to medical societies and to the medical press. It is the aim of that Society to disseminate all knowledge at present existing with regard to this disease, and to utilize it in a great endeavor to stay the ravages of an ever-increasing menace to the American people. Towards that end the United States Census Bureau is to be called to aid; and a special report is in course of preparation on the mortality of the registration area for the year 1914. The deaths from cancer will be arranged under thirty titles of organs affected, on the lines of similar statistics compiled for England and Wales. Information will also be gathered by the Society in regard to geographical, regional and occupational distribution, as well as information from the hospitals. When completed the information will be placed before the public.

Up to the present time it is stated that no American clinic has published its results in cancer of the stomach, except the Mayo Clinic, until the results appeared of 184 cases of carcinoma of the stomach observed in the Surgical Pathological Laboratory of Johns Hopkins Hospital, Baltimore. The paper was prepared by Dr. Joseph Colt Bloodgood, and published in the Journal of The American Medical Association, June 19th, 1915. Mayo's inoperable cases are fewer in number—about thirty-nine per cent. as compared with the figures from Johns Hopkins—seventy-four per cent. It is manifest that while these results are deplorable, they have little to do with surgical technique, but are rather the direct result of late interference. For considerable time surgeons have been preaching the gospel of early diagnosis and early operation. Many people, however, still dread the knife in cancer operations in any situation; and the blame cannot always be left at the door of the physician who also recognizes his inability to offer a cure other than by surgical means. Clearly the people need educating if any advance is to be made in stemming the cancer tide.

On a recent previous occasion we called the attention of our readers to the marked increase in cancer in Ontario as set forth in the statistics of the Registrar-General for the Province. The figures will bear repeating. In 1904 the deaths from cancer were 1,253. These gradually increased each year until in 1913 they stood at 1,806. Altogether in the decade there were 14,935 deaths from cancer in the Province. Much has been done in that time to restrict typhoid fever—the deaths in that decade were 5,942. Tuberculosis had 25,064.

In 1913 the Registrar-General classified the deaths from cancer as follows:

| | |
|-----------------------------------------------------------------------------------------|-------------|
| Cancer and other malignant tumors of the buccal cavity . . . | 94 |
| Cancer and other malignant tumors of the stomach, liver . . . | 631 |
| Cancer and other malignant tumors of the peritoneum, intestines, rectum | 263 |
| Cancer and other malignant tumors of the female genital organs | 177 |
| Cancer and other malignant tumors of the breast | 126 |
| Cancer and other malignant tumors of the skin | 26 |
| Cancer and other malignant tumors of other organs and of organs not specified | 489 |
| Total | <hr/> 1,806 |

To show the geographical distribution in Ontario the deaths are arranged by counties :

| | | | |
|---------------------------|-----|----------------------------|-------|
| Algoma | 11 | Northumberland and Durham | 40 |
| Brant | 26 | Ontario | 31 |
| Bruce | 33 | Oxford | 46 |
| Carleton | 100 | Parry Sound | 12 |
| Dufferin | 16 | Peel | 14 |
| Elgin | 33 | Perth | 34 |
| Essex | 48 | Peterborough | 25 |
| Frontenac | 34 | Prescott and Russell..... | 19 |
| Grey | 47 | Prince Edward | 16 |
| Haldimand | 9 | Rainy River | 2 |
| Haliburton | 1 | Renfrew | 33 |
| Halton | 9 | Simcoe | 59 |
| Hastings | 39 | Stormont, Dundas and Glen- | |
| Huron | 42 | garry | 42 |
| Kenora | 5 | Sudbury | 2 |
| Kent | 39 | Temiskaming | 5 |
| Lambton | 29 | Thunder Bay | 16 |
| Lanark | 18 | Victoria | 22 |
| Leeds and Grenville..... | 41 | Waterloo | 48 |
| Lennox and Addington..... | 13 | Welland | 31 |
| Lincoln | 40 | Wellington | 45 |
| Manitoulin | 2 | Wentworth | 94 |
| Middlesex | 104 | York | 385 |
| Muskoka | 11 | | |
| Nipissing | 7 | | |
| Norfolk | 28 | Total | 1,806 |

Whilst we would not advocate the formation of any new society to take up cancer work and prevention, there does seem to be good ground for advocating some initiation by the Ontario Medical Association, the Health Officers' Association, or the Provincial Board of Health. Each Province of the Dominion will most likely show a large and ever-increasing death rate from cancerous diseases. With the established societies already in existence something is hoped for in each Province. The movement in the direction of prevention of cancer cannot much longer be delayed.

Editorial Notes

TEACHING OF OTO-LARYNGOLOGY

A joint Committee upon the Teaching of Oto-Laryngology in the Medical Course and upon the Training to be Required of the Specialist, has recently been appointed, to represent the American Otological Society, the American Laryngological Society, the American Academy of Ophthalmology and Oto-Laryngology, the American Medical Association, and the American Laryngological, Rhinological and Otological Society. This Committee includes in its membership Dr. D. J. Gibb Wishart, Toronto, Chairman; Dr. T. J. Harris, New York, Secretary; Drs. Ballenger and Ingals, of Chicago, Dr. Levy of Danver, Dr. Dean of Iowa City, Drs. McCuen Smith, Reber, Randall and Makuen of Philadelphia, Dr. Richards of Fall River, Dr. Chas. Richardson, Washington, and Dr. Birkett of Montreal. The Committee organized in Chicago last week during the meeting of the Trilogical Society.

"ARTICLES OF FAITH" CONCERNING CANCER*

A PLATFORM UPON WHICH TO UNITE IN THE CAMPAIGN OF EDUCATION.

(1) That the hereditary and congenital acquirement of cancer are subjects which require much more study before any definite conclusions can be formed concerning them, and that, in the light of our present knowledge, they hold no special element of alarm.

(2) That the contagiousness or infectiousness of cancer is far from proved, the evidence to support this theory being so incomplete and inconclusive that the public need have no concern regarding it.

(3) That the communication of cancer from man to man is so rare, if it really occurs at all, that it may be practically disregarded.

* During the four-day Cancer Educational Campaign, held under the auspices of the Vermont State Medical Society, June 8-11, 1915, Dr. William Seaman Bainbridge, of New York City, presented the accompanying twenty-one "Articles of Faith" at several sessions. They form the conclusion of a paper entitled "The Cancer Patient's Dilemma. A Plea for the Standardization of What the Public Should be Taught in the Campaign of Education Concerning Cancer," which Dr. Bainbridge read at one of the sessions, and which appears in full in the Cancer Number of the *New York Medical Journal*, July 3, 1915.