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SUCCESS IS ONE PART INSPIRATION AND NINE PARTS PERSPIRATION

Fischer's Magazine

Devoted to the advancement of the Science of Electro-Physio-Therapy and to the interests of those earnest and enlightened medical men who are practicing it.

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Physiotherapy

THE degree of success met with in the practice of physiotherapy depends upon the knowledge of themo dality used and the method of its application. Only study and experience can make the successful practitioner.

Neurotic patients are tremendously aided by physiotherapy. In neuropsychiatry the mere fact of treatment acts as a tonic and gives the patient courage to bear up until Nature gets a chance to do her work.

Fractures and dislocations are aided by the absorption of inflammatory products and the prevention of atrophy. Hastening of bony union and promotion of metabolic processes is brought about by physiotherapy and there is a more speedy restoration of function. Heliotherapy, diathermy, iodides, rest and proper food are advised. Many cases of adhesions yield readily to treatment.

In some cases of osteomylitis, copperization and ultraviolet rays with massage accomplish wonders. Tuberculosis of the bones will respond to ultraviolet treatment when all other means have failed. Ultraviolet in rickets need only be mentioned.

The different types of paralysis are more or less aided by physiotherapy. Only the most skilled operator can accomplish results here. Cerebral paralysis is the most difficult form to treat but even it is sometimes helped by rest,

massage and electrical stimulation. In spinal paralysis surgery is first called upon and physiotherapy used as an aid. Hemorrhage of the cord calls for the same treatment. Peripheral nerve paralysis can be aided to a greater degree than can any other form. In infantile paralysis the condition for regeneration is more favorable than in traumatic peripheral paralysis. Stretched muscles that have not functioned for many years but are not paralyzed may be restored by electrical stimulation.

Ulcers are much benefited by physiotherapy. In neuritis the cause must be removed by whatever means is necessary and physiotherapy then used. Sciatica, lumbago and all forms of myalgia yield readily to diathermy. Torticollis responds less readily. The progress of arthritis can sometimes be arrested though it cannot be cured. In neurocardio asthenia at least 60 per cent of patients are cured.

Dementia praecox is incurable but mental trouble of the praecox type clears up. Epilepsy *grand mal* cannot be cured but *petit mal* can be.

(*J. Indiana M. A. 335-338, October, 1923.*)

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Dr. Homer Dupuy

(In the New Orleans Medical Journal)

Dr. H. W. E. Walther demonstrated the new Fischer hospital diathermy unit and lauded its value in the treatment of certain urological conditions. Diathermy, the latest and unquestionably the most useful of the high frequency modalities, is employed in two forms—medical and surgical—both being generated in the same way, but applied differently. In medical diathermy we raise the temperature of tissues only within physiological limits; in surgical diathermy we far exceed this limit; destroying tissue. d'Arsonval current is used. Dr. Walther stated that much benefit to his patient had been noted in applying medical diathermy to cases of arthritis,

prostatitis, seminal vesiculitis and epididymitis. The pain usually disappears after the first treatment and the swelling and period of confinement to bed are most favorably influenced. Applications require twenty minutes.

In surgical diathermy (electro-coagulation), where high frequency current is applied for the destruction of tissue by heat, without sparking, we have a modality for destroying new growths that is bloodless, clean, producing little shock, and which seals all lymph channels in its wake. For treating tumors of the bladder, cervix, urethra and external genitals, it surpasses scalpel-surgery.

Dr. Walther stated that he first became interested in surgical diathermy after a visit to Dr. Gustav Kolischer at Michael Reese Hospital, Chicago, where Kolischer has done commendable work with diathermy and radium in cancer of the bladder and of the prostate. It is today conceded by all that the only scientific way of handling malignant neoplasms of the bladder or prostate is through the open bladder. Some few selected vesical papilloma, of small size, can be successfully treated by diathermy and radium through the cystoscope. But the majority of bladder growths, extending from trigone into the internal vesical spincter, are best treated through the cystotomy wound. Kolischer lays stress upon the point that, in treating tumors of the lower urinary tract by means of diathermy, one requires an apparatus that will deliver up to 4000 M. A. current. This can only be obtained in the newer type of machines.

The results obtained with diathermy in the Urological Service of the Hotel Dieu will be reported in detail later in a special article on the subject. Dr. Walther acknowledged indebtedness to his associate, Dr. C. L. Peacock, for his valuable assistance in this work.

Dr. Dimitry: Dr. Walther's demonstration carries a message of assistance to those who handle malignant cases, for by his Diathermy demonstration he enlightens us on a

procedure that may prove valuable in preventing metastasis i. e., if malignancy is accepted as a local and not a general condition. Surgery cares for the offending condition, but by removal it adds the possible danger of dissemination. The Deep X-ray is stated to be beneficial if administered a short while before operation for it is said to constrict surrounding lymphatics and vessels.

I have often desired, in my special line, to add still further precaution by the use of the hot iron, and I had hoped to have used this diathermy procedure, but lacked a working knowledge until this night, when the doctor has so well explained its use.

I would ask further enlightment of its use when the eye is to be removed for a malignancy. After the use of the diathermy needle, should we wait for a slough before proceeding with the knife and scissors to remove the eye?

Dr. Walther: It is best to wait several days to a week for each slough to come away before attempting removal of tumor mass.

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Enlarged Gland

From a California Contributor

Case C. M. came to my office with an enlarged gland, about the size of a hen's egg, with history of over exercised shankroid of about two weeks' duration, which had previously healed.

Treatment consisted of exposure to the rays of a Deep Therapy Lamp 30 minutes at a distance of 30 inches eight times. The gland was reduced to the size of a bean, and subsequently reduced to normal size with no further treatments. No recurrence of shankroid after two weeks, and then the patient was discharged.

Out of twenty-five cases treated by this method, only two went on to suturation.

Diathermy for Malignant Disease of the Mouth, Pharynx, and Nose

On the basis of the results observed in seventeen cases, Norman Patterson (*British Medical Journal*, July 14, 1923) asserts that in cancerous growths in the larynx and mouth the ultimate results are likely to be infinitely better when the primary growth is dealt with by diathermy, rather than by a cutting operation. Complete block dissection of the glands in the anterior and posterior triangles should be carried out even when these glands are not palpable. It is generally advisable to destroy the growth in the first instance and to remove the glands subsequently. Occasionally the two operations can be carried out at the same sitting. If there is any doubt as to the ability of a thorough clearance of the neck, then the gland operation should precede that on the primary growth.

If the glands cannot be dealt with it is little use applying diathermy to the primary tumor, except as a palliative measure. It is sometimes advisable to operate on the glands in the first instance, and to deal subsequently with the primary tumor, as consent for the neck operation may be difficult to obtain after the growth itself has been destroyed. Before commencing treatment, it is well to try and obtain consent for two or three operations, and to impress upon the patient the importance of the removal of the glands. If the diathermized area approaches or invades the fascial planes of the neck, a clear interval of a fortnight or three weeks should be allowed between the destruction of the primary growth and the neck operation.

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Cataract

By way of response to an inquiry from one of our readers, Dr. B. B. Grover offers the following opinion regarding possible results obtainable by Physiotherapeutic means in the treatment of cataract:

"As far as my experience and the knowledge of the experience of others go, there is little to be said that is new in the treatment of cataract. However, here and there much good has been accomplished in recent cases by Diathermy, followed by the application of the constant current.

"It is well known that bone is the last tissue to become heated by Diathermy, and when heated will hold the heat for hours; therefore it is logical to heat the surrounding wall of bone, which will slowly give up its heat to the adjacent tissues and maintain hyperemia for a considerable period of time. This may be accomplished by passing the current from temple to temple as well as its application by means of a non-vacuum high frequency electrode over the closed lids.

"This method should be alternated with 2 to 5 milliamperes of the constant current. The treatment should be continued for many weeks. These cases are usually accompanied with hypertension which should be corrected in order that the best of results may be obtained.

—Burton Baker Grover, M. D.

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Diathermy in Gonorrhea in the Male

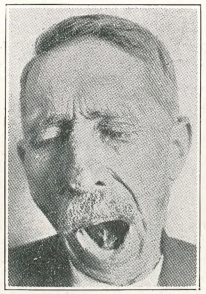
Serés is convinced that nothing is so effectual as diathermy in dislodging gonococci lurking in the tissues around the urethra, which may maintain the infection for years. His rectal electrode opens like a fan in the rectum, and thus acts on a large area, including the prostate and seminal vesicles. Even at the best, this treatment is not always successful, as some gonococci escape in the deeper tissues. But gonococcal epididymitis and gonococcal urethritis in women can always be cured with diathermy as the anatomic conditions allow a perfect electric bake. When technic is perfected to allow this throughout, gonorrhea will be conquered; it is merely a question of enough electrodes. With recent infection, the gonorrhea is cured in two or three sittings, but acute urethritis in the male once established has generally proved refractory. Only when it has subsided under the usual local measures, does diathermy help to eradicate the infection. With more and larger electrodes he is confident that every acute urethritis can be conquered.

(*abs. J. A. M. A.*)

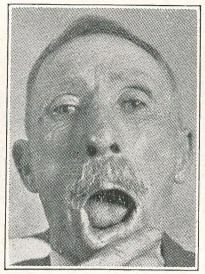
Endothermy

A Case Report of George A. Wyeth, M. D., of New York

CASE I. J. W., age 66, sailor, referred by Dr. W. B. Moodie of Valhalla, New York, reported that about 2 months previously a pimple had appeared under his tongue. He thought that the dental plate was irritating his mouth, but was assured by his dentist that this was not the case. He paid scant attention to the matter thereafter, but while he was at sea the pimple began to grow. On returning to New York he went to a hospital where "the doctor opened it and since then it has had a hole in it."



Before Treatment



After Treatment

Examination showed an indurated mass, about 3 centimeters by 2 centimeters in size, involving the right side of the floor of the mouth. It was foul and had a crater-like ulceration at right of the frenum. It was painful and tender, but no palpable, cervical glandular enlargement could be made out. On June 2, 1921, under ether narcosis the entire mass was completely surrounded or isolated by bipolar endothermy. To establish this definite wall of coagulation necrosis around the malignant area, it was necessary in this case to coagulate through the frenum, the under surface of tongue, and the inner surface of right jaw. A section for the microscope was then removed with impunity after which the whole mass was coagulated *in situ*. The dead tissue was next removed by scissors and the entire cavity seared over with the current to produce a further penetration of the heat. The lingual artery was not ligated.

Patient returned to room in good condition. Next day there was considerable swelling of tongue and a profuse flow of saliva, but he was free from pain and was able to take liquid nourish-

(*Cont'd on page 10*)

"Lobar Pneumonia is One of the Scourges of the Human Race

"LIKE Typhoid Fever it attacks the rugged as well as the weak. Unlike many diseases in which acquired immunity is developed, one attack is apt to increase the liability to subsequent seizures."

". . . Through permission received from Senior Surgeon George B. Young, then Medical Officer in Charge of U. S. Marine Hospital No. 21, N. Y., and with the co-operation of Dr. Bryan who was chief of the Medical Service, this work was undertaken by the author's department at that Hospital. It was agreed that when accepted means of treatment had proven unavailing, Diathermy should be tried in the first case in which there was otherwise apparently no hope of recovery.

"In January, 1922, such a case occurred and the treatment by direct Diathermy was started. The result in this first case was one of the most dramatic in the author's medical experience. The relief the patient received from severe pleuritic pain and dyspnea was immediate. His cyanosis disappeared in about seven minutes after the treatment was begun. The temperature began to fall immediately by lysis. He received from 2 to 4 hours of complete relief after this, and each succeeding treatment, and made an uninterrupted recovery.

"Now Diathermy has been ordered as soon as the diagnosis is made in every case of Pneumonia at the Marine Hospital. It is not too much to assume that in many critical cases this marked relief of symptoms may be the turning point in disease."

—From Dr. Harry Eaton Stewart's "Diathermy in Pneumonia"

ment. He left the hospital on the third day in fairly good condition, although toxic absorption had rendered him very cachectic in appearance, with skin of a dark, yellowish hue, both of which conditions cleared up rapidly.

Sloughing of the remaining necrotic tissues began shortly afterward and was complete in the third week, although a piece of bone sequestrated from the inner surface of the jaw in the sixth week. Wound healed completely, and patient has remained free from pain. There was early return to normal diet and a gain of 15 pounds in weight within 3 months. Both sides of patient's neck were treated with deep penetrating X-ray as a postoperative prophylactic measure.

If we consider the technique of the treatment, we shall understand the particular advantages of endothermy. The first step in the procedure is to describe in the healthy tissue a protective ring of destruction around the malignant area. That is, before a malignant area is touched it is completely surrounded by a wall of coagulation necrosis, which shuts off and destroys the blood vessels and lymphatics to and from the affected part. After this the entire lesion is destroyed and removed. Just how much current shall be used and for how long, the operator must learn by experience. Dosage is, however, always under accurate control and conservatism demands that one overtreat rather than undertreat, for a stimulating dose is worse than no dose at all.

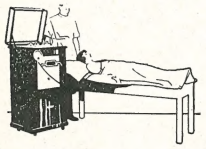
It is not difficult to understand that this line of destruction drawn about the malignant area to cut off blood vessels and lymphatics cuts off, also, the sensory nerves, and as the malignancy is removed the pain is alleviated. The value of the sterilizing effect of the heat upon a foul, discharging area is appreciated by the patient, for it renders his wound less offensive. One can scarcely overestimate the importance of these features of the method, particularly in the treatment of lesions in and about the mouth. In such cases, the small remaining slough comes away in from 2 to 3 weeks, and the area is completely healed within a few days thereafter. Patient can thus enjoy that early return to normal diet which is of the highest importance, since most of these cases are markedly cachectic, anaemic, and badly run down. Their chief postoperative need is nourishment.

(*From the New York Medical Journal*)

Albert C. Geyser, M. D.,

of Huntington, L. I.

in writing in the "American Physician" states in part,



"Diathermia is another measure which, acting in conjunction with the other two agents (the therapeutic bath and intravenous medication), is almost a specific in producing localized results in the chronic stage of disease.

"Diathermia, when applied to a joint or tissue, heats the same through and through. The local temperature of a joint or organ may be raised several degrees above the normal. When a given tissue is so heated there ensues an active arterial hyperemia.

"The capillaries become dilated, and increased leucocytosis with consequent diapedesis is a physiological result. While the effect is primarily of a local character, the general result is a far-reaching constitutional therapeutic measure. Such capillary dilatation increases the local effect of the intravenous medication, especially that of sodium iodide.

"When these three measures are employed at the same time, each one makes the other more effective; the bath and diathermia call for physiological functions, while the sodium iodide removes that which interferes with organic functions.

"After a short course of this treatment, the 'Chronic' is in a physiological condition for such specific treatment as his case may demand.

"The *anemic* requires the *intravenous use of iron and arsenic*, the *syphilitic*, *mercury* or *some form of arsenic*, the *paralytic* (peripheral) *diathermia* to the spinal segment and nerves involved. When it is of central origin the continuation of the iodides; for the pain sod. salicylate, etc., etc. Every therapeutic measure in chronic ailments especially, must aim to restore lost or perverted function according to

and in harmony with the laws of physiology. This concept seems to be understood by few, misunderstood by many and underestimated by almost everybody. *It is not the agent, but the specific reaction on the part of living cells that must be our constant aim in applied therapeutics.*"

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Electricity as a Diagnostic and Therapeutic Aid in Medicine

By ROBERT P. STURR, M. D., Philadelphia

Extract from American Physician, May, 1923

No field in medicine offers more encouragement for study and application than does electricity. Having risen from the ages of a mystic healing device, and having passed through the hands of every charlatan and "pathy" that has existed and cast itself upon the gullible public, electrotherapy has survived and established itself into modern medicine as one of its firmest foundations.

We are teaching it in our medical schools; every large hospital has its department of electrotherapy, and many large industrial organizations and rehabilitation clinics are adding this to their hospitalization departments. Our Veterans' Bureaus have this department as one of their chief aids in the restoration of the wounded soldier to his former state of health. The war played a great part in bringing physiotherapy to the front. The percentage of permanent disabilities would have been alarming had not this science been utilized in the after treatment of wounds and fractures. * * * .

The physician who specializes in electrotherapy should be able to make application and have apparatus for the following currents: Static, Galvanic, Faradic, Sinusoidal, High Frequency and Ultra-violet * * * .

The High Frequency current is one of high voltage which is interrupted thousands of times a second, making its voltage practically harmless. From this current we get * * * Electro-coagulation. This method has won its way by merits alone. No physician can help but marvel at the results obtained by Electro-coagulation especially in the destruction and diminution in size of benign and malignant growths.

This is not a Cautery as many think, but a coagulation of the tissue and a rupture of the cellular walls. To show that this is not a Cautery, we can pass the current through paper to tissue beneath and not burn the paper, yet coagulate the tissue. * * * Any part of the body will stand the application of this current, from a growth on the cornea to a massive tumor of the breast, or a tumor within the body such as the bladder.

This method has taken a gigantic place in surgical realms. Daily we are called upon to use this method as an aid to the surgeon.

THE TECHNIC

All parts are cleansed as in a surgical operation, and all precautions of asepsis are taken. Either local or general anesthesia may be used. The tumor mass is encircled, taking in some normal tissue, and then divided into areas and all parts destroyed, curetted and destroyed again, until sound and normal tissue is found.

Bleeding is controlled automatically by the application of the needle to the part, as it seals up the blood vessels. The part is left with a dry black coagulated surface, which remains so in most cases for a week; then this becomes moist and a slough forms with much exudate, which in the average case heals within two or three weeks by granulation, and the average final result is very little scar formation which is very pliable and non-contracting. In the majority of cases, this work is done at one operation, but where the area is too large or some has been left, it is perfectly correct

to repeat the procedure several times. But in malignancy it is best to destroy all affected tissue at once, as too little often acts as a stimulation to any remaining tumor cells.

PRECAUTIONS

How far one should go is a matter of great importance, as the current effect is beyond vision and extends down into the tissue; thus great caution must be used when working around the eye, etc., or in cartilage. I recall a case we did several years ago of a wart on a colored man's ear; we coagulated and removed the wart, but we also removed a nice round area of cartilage under the wart and left a perfect hole, which was an early lesson. Also, when working near a blood vessel, if one go too far the slough might involve it, and secondary hemorrhages result.

When ether is being given, it should always be taken away from the mouth as an explosion may result, but the ether in a patient's breath does not matter even when working in the throat. Secondary hemorrhage is apt to occur when the slough is interfered with or it is torn away too soon, or a blood vessel damaged.

ADVANTAGES OF THIS METHOD

The advantages of this method are many. There is little danger of infection, as the lymph spaces and blood vessels are sealed up, and the high heat kills all organisms. Each blood vessel is sealed while working. There is less danger of metastasis, as blood and lymph channels are sealed. Very little shock is present, as no blood is lost and the patient is not under ether long. Scar tissue, formed as a result of this treatment, does not contract, and therefore we can work around the eyelids without danger of entropion or ectropion following, or we may treat the flexor joint surfaces with no fear of the after-contraction which is usual in surgically treated cases. One hundred per cent cure is gotten from epithelioma of the face above the lower lip.

Those cancers of the prickle-cell type should be followed by radium and X-ray to the glands, and over the coagulated areas.

At the Polyclinic Hospital we are following each electro-coagulation with a two-third erythema dose of X-ray, heavily filtered—no matter what the type of malignancy.

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Diathermy in Surgery

Bianchini extols the advantages of diathermy in certain surgical cases, the absence of hemorrhage, the brief time required for the electro coagulation, in comparison with operative measures, and the ease with which the procedure can be repeated in inoperable cases. The drawbacks are the danger of secondary hemorrhage as the eschar drops off, and the danger of injury of bone, with sequestrum formation. A complete cure was realized in nearly all the twenty cases of tumors, angiomas, keloids or adenoids he describes, but he emphasizes that diathermy is merely an aid to surgery, and cannot take its place.

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A PAGE OF FUN

"Ma, can I go out to play?"
"What, Willie? With those holes in your trousers?"
"Naw, with the kids across the street."

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Teacher: "What is the shape of the earth"?
Willie: "Pop says it's in a helluva shape."

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A class of boys had been studying physiology, and one day the teacher told them to write a composition on "The Spine."
Among the many papers sent in was the following:
"The spine is a bunch of bones that runs up and down the back and holds the ribs. The skull sits on one end, and I sit on the other."

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"Do you play Mah Jongg?"
"No. I haven't touched a piano in years."

Doctor: "You have appendicitis. I must operate."
She: "Oh, Doctor, will the scar show?"
Doctor: "Well, it shouldn't."

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Candid Hostess: "My dear, I should never have known you, from your photographs. Reggie told me you were so pretty."
Genevieve: "No, I'm not pretty, so I have to be nice, and it's such a bore. Did you ever try it?"

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"The boss offered me an interest in the business today."
"He did?"
"Yes. He said that if I didn't take an interest pretty soon he'd fire me."