

## AMPUTATION OF AN ARM WITH LOCAL COCAINE ANESTHESIA.

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THIS case is reported because of the successful employment of local cocaine anesthesia, rendering possible the amputation of an arm just below the shoulder-joint, in a patient whose condition would not permit of a safe administration of ether.

**CASE.** E. S., female, sixty-eight years old, has been at Long Island for the greater part of the time since 1903. She has been treated at this institution for gastritis, myocarditis and enteritis. In July, 1908, she was in the hospital for about three months suffering with infectious entero-colitis.

Patient's present illness began Feb. 13, 1909. At that time she complained of pain in both knees and on left side. No cough, no expectoration. Bowels normal. Appetite poor. Temperature was sub-normal; pulse 100, respirations 26. Diagnosis was made of myocarditis, arteriosclerosis, emphysema, chronic bronchitis, passive congestion of lungs.

March 5, 1909. Patient complained of considerable pain in left hand, which was much swollen and of a bluish color. The hand was cold, but it was evident that some degree of circulation persisted, from the return of color that followed pressing on fingers. Diagnosis: Venous thrombosis.

A simple protective dressing was applied. Lower left arm and hand uniformly blue and cold and swollen. Some tenderness on outer aspect of ulna. Hand pits slightly on pressure with change of color. No interference with sensation.

March 8, 1909. Patient's condition about the same. She complained of pain in the left groin. There was marked edema of both legs. Veins of right leg deprived of circulation.

March 15, 1909. Patient's condition has improved quite appreciably in last few days. This morning, distinct demarcation was present about 12 cm. above wrist, with a blackened, sloughing, gangrenous mass below.

Operation by Dr. Cunningham.

**Operation.**—The arm was held up so as to expose the axilla. A tourniquet was placed as high as possible. An area three inches long, beginning at the lower border of the axilla and extending along the inner edge of the biceps, was cocaineized by the injection of a 1% solution of cocaine. The incision was made through the skin and superficial fascia until the border of the biceps muscle was exposed. The skin was then cocaineized in a line extending across the anterior surface of the biceps, beginning at the lower border of the incision already made and running at right angles to it. The incision was carried down to the biceps muscle. The muscle was then injected with cocaine and divided with scissors. By retracting this triangular-shaped flap of skin and muscle, the vessels and nerves were exposed by blunt dissection. The median nerve was isolated and its surface moistened with the cocaine solution. The needle was then plunged into the nerve and a few drops of cocaine injected. The nerve was then divided in the cocaineized area. The musculo and cutaneous and ulnar nerves were exposed and treated in the same manner. There was no sensation or contraction of muscles produced during the division of these nerves. The brachial artery was isolated, ligated in two places and divided between the ligatures. The basilic vein was treated in the same

way. The division of the vein showed its lumen to be plugged with a thrombus. The vein was, therefore, dissected upward toward the axilla for a distance of about three inches in hopes of getting above the thrombus. The presence of the tourniquet made it impossible to carry the dissection higher, and the vein was, therefore, again divided, the thrombus still being present at this point. The anterior group of muscles were now divided with scissors down to the bone. The musculo-spiral nerve and superior profunda artery were exposed, the nerve injected and divided, the artery ligated in two places and divided between the ligatures. The skin on the posterior aspect of the arm and the triceps were divided by a single sweep of a long bistoury down to the bone, thus completing the circular incision around the arm. The cephalic vein was secured and tied. The muscles were peeled back from the humerus for a distance of two inches, the bone sawed through and the arm removed. The tourniquet was removed and there was no bleeding, except a slight ooze from the muscles. The muscles were gathered around the end of the bone by a purse-string catgut suture, care being taken not to include the nerve stumps. The external wound was closed by interrupted silkworm gut sutures without drainage. A dry, sterile dressing was applied to the stump and the stump fixed firmly to the chest wall. Duration of operation, forty minutes.

The patient states, and it is believed, that there was no pain connected with this operation. The only disagreeable feature was the noise produced by sawing through the bone. There was no change in the pulse as a result of the division of the nerves. About 4 dr. of a 1% solution of cocaine was used. In using the cocaine, care was taken to open up the area which was injected in about a minute after the injection was made; thus no cocaine remained in the tissues for any period of time. There was no evidence of cocaine intoxication. There was sensation in the stump at the completion of the operation.

March 24, 1909. Patient apparently better after operation. There was no evidence of shock. She did not complain of pain as before and passes a comfortable night, without sedatives.

March 25, 1909. Patient's condition has to all appearances improved since operation. Her mental state is fair, and she no longer suffers any pain. This evening, however, a tender, non-fluctuant swelling was observed above the angle of the left jaw. Diagnosis: Parotitis.

March 27, 1909. Last night patient's left thigh was found to be much reddened and swollen, with an area about 6 cm. in diameter where the skin was blackened. On removing the dressing from the amputated stump, slight yellowish staining of the gauze was visible. Upon pressing on the edges of the flaps, pus could be expressed. The four lowest stitches were removed and about an ounce of greenish-yellow pus was pressed out. The wound was washed with corrosive and a weak corrosive dressing applied.

Patient gradually failed during the afternoon and died at 8.30 P.M., three days after the operation.

### AUTOPSY MINUTES.

**Heart.**—Weight, 405 gm. Cavities are not dilated. There are quite firm, friable, mural thrombi in both auricular appendices and in apex of left ventricle; none elsewhere. The heart valves are smooth and pale. There is slight thickening of the mitral cusps. T., 12.5; P., 8.8; M., 9.5; A., 7.8; RV., 1.7; IVS., 1.6.

**Venous system.**—Here there is extensive thrombosis, as follows: Complete thrombosis and obliteration in left brachial, subclavian and jugular veins. The

thrombus ends abruptly at the entrance of superior vena cava. The external iliac vein shows complete obliterating thrombosis, extending well down into femoral vein. Above the external iliac, the vein is clear.

*Dura mater* shows over its inner surface an extensive recent hemorrhage. Over right frontal lobe there is an extensive, deep bluish-red area of hemorrhage with irregular margins. On section this involves in a punctate way the gray substance of the cortex. A firm, white vessel courses over this hemorrhagic area. The latter measures about 7 x 9 cm. in extent, and lies in about the center of the convex surface of the frontal lobe. There is a similar small area near the anterior margin of the left frontal lobe. None elsewhere.

The superior longitudinal sinus, both lateral sinuses, the sella turcica contain old, firm, friable thrombus.

## Reports of Societies.

### ASSOCIATION OF AMERICAN PHYSICIANS.

TWENTY-FOURTH ANNUAL MEETING, HELD AT  
WASHINGTON, MAY 11-12, 1909.

THE PRESIDENT'S ADDRESS, "THE PHYSICAL BASIS  
OF LIFE."

VICTOR C. VAUGHAN, Ann Arbor. Dr. Vaughan said that Aristotle recognized that metabolism is the one characteristic of living matter; that living matter not only absorbs, but assimilates; that there is a constant relation between the living molecules and outside molecules; that apart from other matter, living matter could not exist. The living molecule must be supplied with energy, and the chief physical function of living matter is in absorbing energy and then expending it in active form. The molecules are prone to constructive as well as destructive changes. Life is a function and it is the action of the intercellular molecules that determines this function. A living thing is that which demonstrates the phenomena of life, and the molecule so long as it remains unchanged cannot be said to be alive. The lowest forms of life in which there is no trace of nerve tissue behave in a purposeful manner in securing food and in reproduction. Purposeful action is manifested by plants as well as by animals. Dr. Vaughan said there is nothing in the dualistic doctrine involving the existence of mind apart from and superior to matter. Of mind apart from the body, we know nothing. We do know that the cell molecules of the brain are the most complex and the most susceptible to external influences. We have heard much of late, he said, concerning the influence of the mind over the body. Many who speak upon this subject seem to assume that there is some entity, called mind, that controls the body, to which it is superior and apart from which it may exist. This dualistic doctrine is as old as the philosophy of Plato. It always has been, and remains to-day, a dogma without scientific support, and as a hypothesis it has led to the discovery of no scientific fact. Every attempt to apply it to the treatment of disease has led to the development of conscious or unconscious charlatanism. The term "functional disease" is being used by those who know but little concerning the functions of the body either normal or abnormal states. It seems to be inferred, or assumed, by those using this expression that a mysterious power has been given to some to set the mechanism of the disordered body aright, although those supposed to be possessed of this gift have no knowledge or but imperfect and superficial acquaint-

ance with the functions of the various organs and their inter-relations. We have no evidence of the existence of a functional disease as thus understood. In health, the several organs of the body function harmoniously, and we know of no disease but that in which there is lack of perfect harmony. We may not always be able to find where the basic fault lies, but we should not for this reason stop looking for it, shut our eyes, give over our search and ask some individuals, quite ignorant of the body and its functions, to undertake the task of inducing harmonious activities. Of the brain as one of the co-related organs, we know something, and by continued and patient research we may hope to learn much more. Medical observation and study have shown that healthy cerebral function is to be found only when the activity of the brain is properly influenced by normal function of all the co-related organs. We know equally well of the influence of the brain on the other organs of the body. We are fully aware of the fact that impulses may be started in the brain through any of the five senses that may favorably, or unfavorably, influence the activities of the co-related organs. And for centuries the medical profession has employed this physiological principle in the treatment of disease. The basis of all function must lie in the physical and chemical properties of our organs.

### THREE UNIQUE CASES OF AMAUROTIC FAMILY IDIOCY, WITH AN ANATOMICAL STUDY OF ONE.

HARLOW BROOKS and HENRY WANDLESS, New York. This paper presents a brief outline of the history, clinical course and pathology of the disease with the report of three unique cases which occurred in a family of seven children. The protocol and anatomical study of one case is presented in detail. Nutritional changes are regarded as the primary ones in the pathogenesis of the disease.

DR. B. SACHS, New York, thought the cases described represented a form of disease closely allied to amaurotic family idiocy; they were in line with the cases designated as the juvenile form. The typical form was so closely allied as to make it difficult to distinguish between the two. Changes in the macula lutea were not present in these cases and they were more rapidly progressive. Anatomical findings were very similar in the two forms. He reported a case of typical amaurotic family idiocy and exhibited photographs and drawings of this case. He considered that there was a congenital defect in the nerve functions.

### VISCERAL ANGIO-NEUROSES.

SOLOMON SOLIS COHEN, Philadelphia. The paper recalls attention to the author's previous communications on the subject of vasomotor ataxia. The condition is by no means rare and is marked in certain families, especially in those exhibiting hereditary tendency to disorders of metabolism, gout, diabetes, etc. It exists in some persons without causing inconvenience. When, however, disease of any kind or from any cause arises in such persons, their constitutional peculiarities modify the symptomatology. An incautious observer, or one who does not recognize the significance of the vasomotor phenomena, may easily be led astray. This is especially the case in maladies attended with hemorrhage, cardiac disturbance, with headache or with serious discharges. The dependence of certain asthmatic paroxysms upon what may be termed bronchial urticaria was emphasized in the author's previous communications. Less familiar are the angioneurotic edemas of the base of the tongue and larynx which cause suffocative paroxysms and may threaten death. Still rarer in literature and in practice is the recognition of angio-