connective tissue. In this case the wall of fibrin would have been sufficient to prevent the pancreatic fluid from coming in contact with the adjacent fat. The extensive necrosis of the pancreas would seem to be an important factor in the cause of death, although it has never been definitely shown how much destruction of this organ is necessary to produce death. There are experiments upon animals upon record, in which the animals seem to have died as a result of not very extensive lesions of this organ. One experiment of this nature reported by Flexner (*Journal of Experimental Medicine*, Vol. II) is of interest. The fact that concussion and slight injuries of the pancreas may be a factor in the development of necrosis, is indicated by the researches of Chiari (*Zeitschrift fuer Heilkunde*, Vol. xvii, 1896, and *Prager Med. Wochenschr.*, 1900, No. 14), who has observed (although a comparatively rare condition) extensive areas of softening and necrosis of the pancreas, especially of the posterior central portion which lies directly over the bodies of the vertebrae, where the organ is most exposed to pressure or the effects of concussion. The wound in the kidney is of slight importance, except as indicating the direction taken by the missile. The changes in the heart, as shown by the macroscopic inspection and the microscopic examination, indicate that the condition of this organ was an important factor. The extensive brown atrophy and diffuse fatty degeneration of the muscle, but especially the extent to which the pericardial fat had invaded the atrophic muscle fibers of the right ventricular wall, sufficiently explain the rapid pulse and lack of response of this organ to stimulation during life.

REPORT ON THE BACTERIOLOGIC EXAMINATION.

BY

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It is obvious that the short space of time which has elapsed since the death of the President has hardly been sufficient to prepare a complete and thorough bacteriologic report. This report contains all the observations which have been made up to this time:

On September 11, during the life of the President, cultures were made by Dr. Wasdin from the base of the abdominal wound and from dressings removed at the same time. These were submitted to me for examination, and showed the presence of the ordinary pus organisms: *Staphylococcus pyogenes aureus* and *S. cereus albus*, with a gas-forming bacillus which, in pure anaerobic culture on glucose gelatin, forms small, pearly, translucent colonies, with no liquefaction. In litmus milk it produces acid, but no coagulation. Morphologically, it is apparently a capsulated, short bacillus, which takes stains poorly, and which does not stain by Gram's method. Inoculated into the ear vein of a rabbit, which was killed immediately afterward, it produced, after 24 hours in the body of the rabbit, a marked accumulation of gas in the organs, and again grew out in pure culture. As yet the organism is not fully identified.

None of these cultures showed streptococci. A bacterium which appears to be one of the proteus group was, however, isolated, which does not stain by Gram, and appears in varying forms, sometimes small oval, and again quite rod shaped and in short chains. Sometimes it is surrounded with a slimy covering, which remains clear like a capsule when the organism is stained. On slanting agar, it produces a whitish, slimy growth, which gradually runs to the bottom of the slant and produces an odor of decomposition. On gelatin, it grows very slowly with slight and slow indication of liquefaction. In litmus milk, it produces acid and rapid coagulation.

At the time of the autopsy, September 14, inoculations were made by myself. From the base of the wound, there was again obtained a number of pus organisms, principally a white staphylococcus and the bacterium described above, but no streptococci. Cultures made from the peritoneal surface of the intestines were entirely negative. Cultures made from the under surface of the omentum near the colon, were entirely negative, both with and without oxygen. Cultures from the blood of the right auricle were likewise negative. A very careful and extensive search for micro-organisms in the contents of the necrotic cavity, behind the stomach, reveals nothing but a short stumpy bacterium, which, as far as the work has been carried at present, appears to belong to the proteus group, and is very like *Proteus hominis capsulatus*, described by Bordoni and Uffreduzzi.

Morphologically, it is not uniform, and sometimes appears almost encapsulated, being surrounded by material that does not stain; is quite refractory to Gram, and produces an odor of decomposition as it grows. It does not liquefy gelatin rapidly and grows slowly, as a glistening white elevated surface growth which slowly sinks; but on agar in the thermostat it grows very rapidly, as a moist, grayish-white, translucent mass. Colonies on gelatin plates have

a clean circumference, are granular and quite refractive. In litmus milk it produces acid and rapid coagulation. Animal experiments are still incomplete and can not be published at this time.

It must be stated that there is occasion for suspecting that this may be a contamination, either from the outer wound or elsewhere, because, quite unavoidably, the technique of obtaining the material and cultures from the necrotic cavity was not absolutely correct.

Cultures made from the small area of broken-down tissue under the chest wound at the time of the autopsy, grew what appears to be *staphylococcus epidermidis albus*, described by Dr. Welch.

The slimy, gray, necrotic material from the cavity above the transverse mesocolon behind the stomach, was carefully examined microscopically, with the result that very few micro-organisms were found in the fresh state, and no recognizable tissue elements of any kind, no leucocytes or pus-corpuscles, but an abundance of crystals which appeared more like fatty acid than fat crystals. It contained no free hydrochloric acid, and was alkaline in reaction. Experiments as to its digestive power were negative. About 2 cc. of this material were injected into the space behind the stomach of a dog (still living), with no result except quite an elevated temperature for 3 or 4 days. Other animal experiments are also still incomplete.

It might be well to state here that the bacteriologic examination of the chambers and barrel of the weapon used, as well as the empty shells and cartridges, ordered by the District Attorney, was entirely negative, except that from a loaded cartridge there was grown an ordinary *staphylococcus* and a mould. The chemical examination of the balance of the loaded cartridges, made by Dr. Hill, chemist, was also negative.

The absence of known pathogenic bacteria, particularly in the necrotic cavity, warrants the conclusion that bacterial infection was not a factor in the production of the conditions found at the autopsy.

This report has received the approval of the consulting staff of the late President, and is issued with our consent.

P. M. RIXEY.

MATTHEW D. MANN.

HERMAN MYNTER.

ROSSELL PARK.

EUGENE WASDIN.

CHARLES MCBURNIEY.

CHARLES G. STOCKTON.

Clinical Report.

TRACHEOTOMY IN BREECH PRESENTATION.

AN OLD OPERATION BUT A NEW APPLICATION.

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CHICAGO.

Mrs. E. M. C., German, aged 31, was taken in labor with her second child at 12:30 p. m., Sept. 1, 1901. I was summoned at 10 o'clock on the evening of the same day. Upon my arrival at the house, I found a nervous and delicate woman in the second stage of labor. I diagnosed a breech presentation, S. D. A.; the breech being high up and not engaged. The membranes had ruptured early, and the birth canal was poorly prepared for fetal passage. The fetal heart tones were regular, but numbered 160 beats per minute. The fetus was unusually active. The pains were weak and of short duration. By reason of the danger of fetal asphyxia, I proceeded to extract.

It was impossible to bring down a foot, but I succeeded in placing a finger in the anterior groin and made pressure downward and backward in the usual manner until the posterior groin was within reach. After this point, the first act of extraction was easy and was quickly completed. No further difficulty was experienced until after the arms had been delivered. The head had become fixed in the transverse diameter of the inlet and remained so in spite of the Smellie-Veit's, or, more correctly speaking, the Mauriceau method combined with strong suprapubic pressure in the Walcher posture. After working a short time, however, the head was felt to descend slightly into the pelvis, while the occiput partially rotated anteriorly, but successful extraction of a living child seemed impossible at the time.

Convinced, therefore, that the child's life was practically lost, the writer decided to perform tracheotomy as an experimental operation. The body of the child was lifted up by an assistant, the neck hastily washed with a one-half per cent. lysol solution, and the field of operation rendered as aseptic as the limited amount of time would permit. The perineum was pressed backward and the larynx was then steadied with a tenaculum and a linear incision made through the cricoid cartilage, and two or three rings of the trachea. The thick, venous blood which escaped from the incision gave positive evidence of the grave state of asphyxia present. The tissues were then retracted and a soft rubber, aseptic, tracheal catheter was introduced far enough to snugly fit the trachea and pure air gently forced into the lungs by an air-bag. The lungs immediately expanded and the chest was then compressed by the hands. These movements, alternating, were continued until the respiratory rhythm was voluntarily inaugurated and maintained and the body became pink in color. The hemorrhage now ceased and forceps were applied to the after-coming head; stationary, intermittent tractions were made and every effort taken to preserve the perineum as far as possible. In fourteen and one-half minutes after the delivery of the arms, the head was extracted and the child born without any sign of the asphyxia which was so threatening a short time before. The child's body was wrapped in a warm, moist towel to prevent premature respiration during extraction.

The cord was left uncut until the funic circulation ceased and the loss of blood from the neck was in a measure compensated for. The mouth and throat were cleansed and the blood in the trachea carefully removed. Respiration took place through the laryngeal opening only. The child uttered a few weak cries when slapped, but otherwise appeared healthy. A stitch was taken on each side of the incision and the long end of the threads tied behind the neck. This kept the incision patulous and allowed free access of air when the catheter was withdrawn.

Five hours later, there being no dyspnea when the wound edges were coaptated, sutures of fine catgut were introduced and tied, and thus normal respiration was established for the first time. The wound healed by first intention and the child made an excellent recovery. The temperature was at no time over 102 F. The mother recovered with an intact perineum.

The fetal measurements were as follows: Diameter, biparietal, 8 cm.; biparietal, 8.5 cm.; suboccipital-bregmatic, 9.5 cm.; occipital-frontal, 11 cm.; occipito-mental, 12 cm.; bis-acromial, 10.5 cm.; bis-iliac, 8.5 cm. The cephalic bones were hard and ossified; the fontanelles small; the sutures closed.

The mother's diameters were: Interspinal, 25 cm.; inter-cristous, 27.5 cm.; Baudelocque, 18 cm.; bitrochanteric, 31 cm.; circumference, 92 cm.; conjugata vera, 9 cm.

It has long been an established rule in obstetric practice to extract the fetal head as quickly as possible in head last cases. The fetus at this stage of the operation is deprived of its supply of oxygen by the cord being caught between the head and the maternal pelvis, or, as is claimed by some writers, a partial separation of the placenta from the uterine wall. The amount of oxygen already in the body is only sufficient to retain fetal life for four or five minutes, although cases are recorded where children have been resuscitated after fifteen minutes of delay. These cases, however, are exceptional, and their accuracy is sometimes questioned. Time is the greatest element in the safe delivery of the fetus after the cord has come into view. If the head is not delivered within four to six minutes after the extraction of the arms the child will probably be still-born or else deeply asphyxiated.

Attempts have been made to prevent asphyxia by supplying the child with oxygen artificially during extraction. Pugh recommended the method of passing two fingers into the mouth and allowing air to enter along the hollow of the hand. Weidmann conveyed air to the mouth by means of a catheter or a special tube prepared for the purpose called the "vectis aerophorus." When the head is low in the pelvis, the perineum can frequently be pushed behind the mouth and air admitted to the oral cavity directly.

Where, however, the mouth is beyond the reach of the fingers and the catheter becomes useless on account of the difficulty of entering the mouth and the inevitable kink at the bend of the tube, the only chance of saving the child's life has, heretofore, been in a rapid forceps operation with a large fetal mortality resulting. Should the forceps operation prove negative, the child immediately dies, or craniotomy, with a mortality of 100 per cent., follows. Should the forceps deliver the child, it is deeply asphyxiated and frequently, because of premature respiratory efforts, becomes a victim of aspiration pneumonia.

In a given case where the estimated diameters of the fetal head and the determined diameters of the pelvis are such that the accoucheur may expect cephalic impaction; where the usual methods by hand and position have proven fruitless the operation of tracheotomy as described above is recommended. When the child's body is raised to a perpendicular plane, the blood and mucus are prevented from clogging up the bronchi. In a majority of the cases the proximal end of the trachea will be found free of obstruction as the mucus collects principally in the pharynx and upper larynx. The use of an air-bag, such as the Politzer inflation bag, is preferable to blowing in air from the lungs, as expired air is always deficient in oxygen. If one were able to introduce nearly pure oxygen gas, the child would stand the best chance for recovery. The body should be enveloped by a warm, moist towel, to reduce to a minimum the difference between the internal and external atmospheres.

If the labor has been conducted according to established rules of asepsis and antisepsis, little or no time need be lost in cleansing the neck as the fetus is already sterile unless infected from external sources.

With the imminent danger of asphyxia forestalled, the forceps may be applied to the after-coming head and traction be slowly made, giving time for the head to mold and adapt itself to the pelvic canal as well as protecting the perineum as far as possible. This method is to be preferred to the common one of applying forceps, extracting hastily and in 28 to 30 per cent. of cases delivering a dead child, besides in many cases lacerating the perineum. Should the perineum be found to overlap the neck to a moderate extent, an episiotomy may be done immediately, and the tissues retracted sufficiently to expose the field of operation.

The after-treatment is carried out in the usual manner. The obstruction to respiration being removed at birth, the tracheotomy wound may be closed in a few hours.

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Diet in Nephritis.—A nephritic must be well nourished, and the old theories of the harmfulness of this or that food are not sustained by actual experience. It may even prove possible that creatin and similar substances may be directly beneficial, on the same principle as we treat heart diseases with heart poisons. O. Reichel publishes in the *Cbl. f. d. Ges. Ther.*, January, a study of the subject, concluding that the nephritic patient should not be restricted in diet, but should be allowed to eat whatever he best digests and assimilates, without regard to theory. He urges closer study of the mild, ambulant cases of albuminuria, partial nephritis and post-nephritic inflammation of the kidneys—regarding them all as actual nephritis and better suited than severer cases for research on the effect of diet on the progress or retrogression of the morbid processes. He also denounces sweat baths as another purely theoretical measure, which in reality fails to accomplish the anticipated results. He has never known a nephritic to be benefited by them in his experience. He attributes the symptoms in nephritis to a toxin in the blood, retained by the insufficiency of the kidneys, and causing the edema and hypertrophy of the heart by the changes it induces in the kidneys, which diminish their power of resorption. Insufficient absorption is a factor in the delay in the test-elimination of methylene blue, as well as the insufficiency of the kidneys. The changes in the walls of the vessels cause increased resistance, and, secondarily, increased blood pressure with consequent hypertrophy of the heart.