equally good results in experimental work; the same seems to be the case in my clinical work, although this is not so easily ascertained. I leave the reader to choose between the two, after trying them.

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ABSTRACT OF DISCUSSION

DR. WILLIAM L. RODMAN, Philadelphia: So many methods have been proposed from time to time to exclude the pylorus that we must agree that it is questionable if they do exclude. We know that the early methods which were introduced were absolute failures. Practically all methods except within recent years were looked on as failures, beneficial only for a time. So von Eiselsberg devised the radical procedure of cutting across the pylorus, sewing up the pyloric and the duodenal ends, thus making the two openings in the gastro-intestinal tract to close. I am satisfied that the method described by Dr. Bartlett is excellent and, moreover, less mortality would follow his method than that of many others, and yet, he has had two deaths. The cases are too few, the time too short to say what the ultimate results will be, but I am inclined to agree with him that when the stomach is bound down by adhesions and a resection cannot be done, it would, perhaps, be well to use his second method. There would, I think, be less mortality than after the first. I have never performed pyloric exclusion, but if I do, shall use Dr. Bartlett's method, as it appears quicker, safer and seems to accomplish all that is accomplished by von Eiselsberg's operation. The question arises, Why operate, when, by removing a little more tissue than is removed in von Eiselsberg's operation, the ulcer-bearing area may be excluded. Dr. Bartlett's operation or any method of exclusion cannot prevent subsequent hemorrhage perforation or cancer of the stomach. There are, annually, 75,000 deaths in the United States from cancer, and more than 25,000 of them are from cancer of the stomach. Why shall we leave a lesion with so great potentialities in the stomach if it can be removed with practically the same mortality as these other methods, ingenious in a way, but which do not go to the root of the trouble? It has simply been from an exaggerated fear of the mortality. Is that justified? Recently, before the American Surgical Association, I reported a large number (375) of pylorotomies and partial gastrectomies done by American surgeons with a mortality of 4 per cent. I do not think one can do the von Eiselsberg operation with a smaller mortality and yet, in that operation, you are leaving the lesion behind. The fact stated by that great pathologist, Virchow, must be constantly kept before the mind, that 35 per cent. of all cancers in the human body are in the stomach. The time to operate on cancer of the stomach is when it is an ulcer. It has been conclusively shown that a vast preponderance of gastric carcinomas are preceded by ulcers. All precancerous lesions should be attacked radically, for in this way only shall we be doing our full duty.

DR. W. D. HAGGARD, Nashville: I have not applied Dr. Bartlett's procedure to the human subject but expect to use it in suitable cases. There have been many attempts to exclude the pylorus; the old ligature has been unsatisfactory. Dr. Bartlett's operation is simple and seems worthy of trial in some cases. I would not differ with Dr. Rodman in doing partial gastrectomy in suitable cases, but the surgeons of this country ought to reserve that for the extreme case. Now it cannot be denied that an operation of that magnitude in average hands is not going to be attended by the minimum mortality of 4 per cent. that has been gathered from the great clinics of the country. This Association is to establish certain lines of procedure for the average American surgeon. While it is true that of those cases of ulcer which develop cancer, 70-odd per cent. have developed into cancer, it does not mean that all cases of ulcer will develop into cancer. Witness the very few cases that have ever been reported of a secondary malignant degeneration of an ulcer that has been operated on by gastro-enterostomy or any of the other well-recognized measures. Now, if, at the

time of operation, you are clinically or pathologically undecided as to whether or not the case is malignant, then Rodman's operation is the operation of election. It seems to me, however, that in the average case the principles laid down by Dr. Bartlett are the ones we should apply. Any measure that has just been introduced is, of course, going to have a hard voyage, but I do believe that if we practice this operation we shall find it applicable to a large number of patients who will do better than if we perform gastro-enterostomy.

DR. W. C. JONES, Chicago: What evidence does Dr. Bartlett have that his method produces complete pyloric obstruction? This point seems doubtful to me. I have been doing some experimental work with Dr. Carl Beck of Chicago, in making an artificial tube from the greater curvature of the stomach, using this tube for gastro-enterostomy instead of connecting the intestine with the unaltered stomach. In this work, the pyloric end of the stomach was narrowed as much or more than occurs in Dr. Bartlett's operation; yet we found by means of the Roentgen ray that the stomach contents passed largely through the pylorus. Passing a ligature around the pylorus did no good, as might have been expected. The most satisfactory and the simplest method we found of making the obstruction sure was complete incision of the pylorus and infolding of the cut ends. This procedure is very simple, is absolutely certain, and on the whole, leaves little to be desired.

DR. WILLARD BARTLETT, St. Louis: I was probably not understood when I stated that I had the stomachs from two necropsies and the stomachs of 17 or 18 dogs in evidence of the fact that the obstruction produced seems to be as complete as the operation of complete transversion with folding in of the ends. I cannot explain the difference, however, between this and Dr. Jones' method, but I shall be glad to study it.

A MICROCEPHALIC IDIOT WITH MALFORMATION OF BRAIN*

REPORT OF A CASE

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The case which I report is that of a patient who has aroused considerable curiosity among those who have seen him. The parents of the patient were interviewed by myself and furnished what information they could, freely and willingly. They appeared to be working people of the average intelligence, the father being 59 years of age, healthy, a blacksmith, a steady worker and a moderate user of alcoholics, though he has never been intoxicated. His mother is still living, aged 83, while his father died at the age of 62 from rheumatism. The patient's mother is living at the age of 55 and at present is passing through the menopause; she was the mother of eight children, who, with the exception of the patient, are all living and normal. She is strictly temperate in habits; her father was killed at the age of 38 in a railroad accident and her mother died at the age of 70, the result of heat exhaustion.

There is no history of any miscarriages, tuberculosis, malignancy or mental diseases in the family, and the only explanation that the mother can offer for the condition of the patient is that when she was four or five months pregnant they moved from one house to another, and she did a lot of hard work and heavy lifting, but was not injured and nothing unusual occurred.

REPORT OF CASE

Personal History.—The patient, the third child in a family of eight, was born April 17, 1884, at full term. "Birth was

* Read before the Philadelphia Psychiatric Society, March 13, 1914.

easy"; the child weighed about 6 pounds. The family noticed that the head was quite small and had "no openings on top," but thought nothing of it. The child was breast-fed to the age of 2 years when he was weaned, but it has always been necessary to feed him with a spoon. He never made any effort to learn to talk and first began to walk at the age of 3 years. He never walked a great deal, but when he did try, it was on his toes, never placing his foot flat on the ground. His condition first attracted the special attention of his parents at about the age of 5 years when they were told that the child would never talk or be of any account in the world. As soon as he was able to sit alone he would place his feet under him and when in bed would lie with the lower extremi-

Fig. 1.—Facial expression of patient in animation.

ties, contracted. He constantly pounded with his hands on anything near him and the parents explain his large hands by this action. As he grew older he learned to know the various members of the family by sight; was usually good-natured, but at times showed a temper. When strangers came into the house he would notice the difference; would laugh and become noisy and excited.

It was always necessary to tie him to his chair, otherwise he would get into mischief by pulling things over and destroying them, and if the other children came within reach he would pull their hair with both hands, though he seemed to enjoy watching them playing about him. He was inclined to be destructive at every opportunity and if he found a small hole in his clothing would work at it until the garment was destroyed. He was never able to talk or to care for his personal wants.

Owing to illness in the family and a further inability on their part to care for him properly, he was taken to the Norristown State Hospital, Jan. 28, 1905; he was then 21 years of age. The records of the hospital at that time, while rather meager, state that he was an idiot and could not talk or walk, had to be fed, was unclean; quiet and did not make any sound. He weighed 65 pounds and was about 4 feet 2 inches in height. His chest was pterygoid in type, the lungs normal, the heart-action regular, but rapid; no murmurs were elicited; the pulse was rapid, but regular; the hands and feet were cold and cyanotic; he had abnormally long arms; the ears were quite large and head was small. He showed athetoid movements of the upper extremities. The muscles of the lower extremities were apparently paralyzed and showed contractures; the knee-reflexes were exaggerated and showed arkle-clonus; the pupils responded to light.

A review of his physical condition a short time before his death, Dec. 20, 1913, showed the following cranial measurements: biparietal, 12 cm.; occipitobregmatic, 13 cm.; occipitofrontal, 20 cm., and cranial index 923. The head was covered by a loose thick scalp. The ears were quite large; palate arch high; the arms were rather long and the hands large and coarse. The fingers were heavily calloused from being continually bitten. The musculature of the lower extremities

was poorly developed and showed marked contractures; extremities were cold and cyanotic. The patient's actions were rather jerky. The chest was round with the sternum quite prominent; the left apex showed a cavity formation. The abdomen was apparently normal, while the genitalia were unusually well developed.

In appearance he resembled more closely a monkey than a human being and this led to his being called "the monk"; he might easily have been used as a specimen to carry out the Darwinian theory.

The ward notes as to his mental condition varied but little during his time in the hospital, the substance of them being that he was entirely helpless, unclean in his habits, usually dull, but at times appeared to observe what was going on about him, took no special interest in any one thing, would watch people going about and could be attracted by strange noises such as the dangling of keys, etc., when he would look toward the source of the noise. He was always more or less destructive and would tear his clothing, using both hands in doing so. Frequently would hold the cloth with one hand and tear with the other.

About April, 1913, the ward physician was able to interest several of the other inmates in this patient's condition in an effort to observe just what effect constant personal effort in the patient would bring out. These inmates devoted most of their time to him and would perform all sorts of antics for his amusement. Gradually he appeared to watch them, and would become excited, jump in his chair and laugh at their actions; at times would grunt as if in an effort to speak; he also seemed to know these particular men, for when they would approach him he would become excited, but when a stranger approached he paid no attention and hung his head.

These men would also throw a handkerchief to him and he gradually learned to watch for it, catch it and then throw it back, but without any definite direction; at times they would cover his head with it and he would pull it off and throw it at times with one hand, and again the other, and seemed to wait for them to replace it, apparently enjoying its performance. He would only do these things, however, with the persons with whom he was acquainted. Generally, he became much brighter and watched any moving object and at times would become quite noisy, and this state continued until his final breakdown and death.

Fig. 2.—Lateral view of brain.

Post-mortem Findings.—The head is covered by short thick brown hair. The scalp is thick, average 8 mm., contains much fat, and shows many transverse folds. The epicranium is thick, white and tough. The skull is hard and contains a fair proportion of diploe. It measures 5 mm. in thickness in the frontal region, 2 mm. in the parietal region, 9 mm. in the occipital region. All the sutures are indistinct, in places entirely obliterated. The dura is generally a little thick, but strips from the calvarium readily. The internal measurements of the skull, at level of section, are 10.5 cm. anteroposteriorly, and 8 cm. transversely at the parietal eminences. The anterior basal fossa measures 3 cm. anteroposteriorly, 3 cm. transversely at the widest portion, and is perfectly flat. The

middle fossa measures 5 cm. anteroposteriorly, 3 cm. transversely, 1.5 cm. in depth. The posterior basal fossa measures 3 cm. anteroposteriorly, 4 cm. transversely, and 2 cm. in depth. The pia-arachnoid is slightly opaque over the sulci, and here the subarachnoid space contains an excess of fluid. The brain is extremely small. The posterior lobes do not cover the cerebellum and the latter protrudes 1 cm. behind the occipital pole on the left side and 1.5 cm. on the right side. The cerebral hemispheres measure 9 cm. from frontal to occipital pole and 4 cm. in width. The convolutions are rounded and extremely elementary and vary considerably in width. The fissure of Sylvius is well defined. The posterior limb extends upward and backward, reaching the neighborhood of the great longitudinal fissure just behind the middle of the superior edge of cerebrum. Its course closely resembles that of the normal fissure of Rolando. There is depression at the site of the ascending limb of this fissure. A well-defined fissure lies anterior to the posterior limb of the sylvian fissure on the left side, which probably corresponds to the rolandic fissure. From this, two short fissures run at right angles, probably corresponding roughly to the upper and lower frontal fissures. The right frontal lobe is similarly marked, but less distinctly. The orbital surfaces of the frontal lobes show two short, shallow anteroposterior sulci, separating

Fig. 3.—Looking down in hemispheres. Note absence of corpus callosum.

it into three convolutions. The olfactory bulb and tract are small. The trigonum olfactorium is larger and more distinctly formed than normally. The temporal lobe is rather well defined. Three horizontal fissures run roughly parallel to the sylvian fissure. The superior temporal fissure is well defined. There is a distinct supramarginal and angular gyrus. A small depression probably corresponds to the intraparietal fissure. On the mesial sur-

face of each hemisphere, one irregular sulcus is seen, corresponding to the callosomarginal fissure, which approaches the superior edge of the hemisphere behind the position of the sylvian fissure. No distinct parieto-occipital, calcarine or parallel fissures are found, so that it is impossible to define the mesial and lower aspects of the parietal and occipital lobes. The hippocampal convolution is also poorly defined, but wide. There is one depression in the lower surface of the temporal lobe near the temporal pole. If this marks the width of the uncus, this convolution measures 1.5 cm. in width and is the widest convolution of the brain. Elsewhere the convolutions measure 0.5 to 1 cm. in width.

No corpus callosum connects the hemispheres, the pia-arachnoid of which was slightly adherent. The pia-arachnoid is reflected from one hemisphere to the other, and beneath this a thin membrane, apparently the tela choroidea, is seen. When this is incised the third ventricle is exposed. The fornix is not fused and can be seen over each thalamus, running anteriorly and downward as the descending pillars. The cortex lies close to the fornix above. No anterior horn of the lateral ventricle is apparent and the head of the caudate nucleus is not seen. At the normal position for the foramen of Monro, beneath the descending pillars of the fornix, fringes of the choroidal plexus are found, likewise on the under surface of the velum interpositum, in the midline. The thalami are seen, also the anterior, middle and posterior commissures, the region of the habenular nuclei, a small pineal body, and corpora quadragemina.

Sections of the right hemisphere show the absence of the anterior horn of the lateral ventricle. The caudate and lenticular nuclei, internal and external capsule, claustrum and optic thalamus are in normal relations. The lenticular nucleus is relatively large. The posterior and inferior horns of the lateral ventricle form one large horn extending from the level of the surface of the optic thalamus. The shelving fornix and the choroidal plexus extend downward into the temporal lobe. A distinct small cornu ammonis is present. The cerebral cortex varies from 2 to 4 mm. in width.

The cerebral peduncles and pons are small, but the whole medulla is relatively large, approaching the normal adult size. The cranial nerves appear at their normal positions and are small, except the third and fifth, which are relatively thick. The pituitary body is relatively large, and of normal size. The circle of Willis and vascular supply are normal.

The cerebellar hemispheres measure 45 cm. anteroposteriorly by 4 cm. transversely. In gross appearance, both the vermis and hemispheres are normally marked and small, but not in proportion to the cerebral hemispheres. The brain weighs 220 gm.

The preceding description is based on a comparison with the normal adult brain. The scale of development, compared to the brain of the monkey and ape has not been sufficiently studied. Dr. E. A. Spitzka states that the brain is as small and elementary in cortical development as he has seen in a human brain. He believes that it has no distinct occipital lobe and agrees that it is incallosal. The cortical development is much below that of the higher apes. A more complete comparative and pathologic study of the brain will be undertaken and reported.

For the preceding report of the necropsy I wish to express my appreciation to Dr. Charles J. Swalm, Pathologist to the State Hospital.

FUNDAMENTAL INTRAPELVIC PERINEORRHAPHY *

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CHICAGO

Friedrich Schatz¹ in 1883, standing chiefly on the work of Luschka,² it appears, was the first gynecologist to point out in detail the anatomy of the female pelvic floor in general and that of the levator ani in particular, to define its functions and to describe the injuries which it receives, chiefly during parturition, in its posterior, lateral and anterior sections. He makes it clear that injury of the levator ani may occur independently of the perineum (submucous tears), but more usually with tears in the latter, and that truly intrapelvic work is needed to accomplish the best that can practically be done with them. The next most notable promotion of the subject occurred in 1889 by R. L. Dickinson,³ who corrects some misconceptions of the anatomy and presents the results of tests of the contractile power and lifting capacity of the levator ani. The results of these tests I regard as necessarily due partly to the concurrent actions of the bulbocaver-

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

* This article has been abbreviated by the omission of some of the illustrations. The article will appear in full in the Transactions of the Section and the author's reprints.

1. Schatz, Friedrich: Arch. f. Gynäk., xxii.

2. Luschka: Das Becken.

3. Dickinson, R. L.: Am. Jour. Obst., September, 1889.