IMMEDIATE AND LATE RESULTS OF THE WHITEHEAD OPERATION FOR HEMORRHOIDS.

A REVIEW OF 470 CASES.

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ALMOST since the description by Whitehead of the operation for hemorrhoids which bears his name, there has been animated controversy as to the merits and demerits of the procedure. Among the acquaintances of the writer there are many men, particularly rectal specialists, who highly disapprove of the Whitehead operation. On the other hand, many general surgeons of the highest attainments, whose opinion certainly should carry much weight, employ practically no other method in the treatment of piles, maintaining that if the operation be properly performed it is not likely to be followed by unfortunate consequences. The material accumulated at the Johns Hopkins Hospital afforded excellent opportunity to study the results of the Whitehead operation, as this has been the method of choice on the surgical service, since the hospital was opened, twenty-four years ago. With the kind permission of Dr. Halsted, the writer has undertaken to follow the subsequent history of the Johns Hopkins Hospital cases from 1889, when the work began, until 1910, when this review was undertaken. In addition to these cases, those operated on by Dr. J. M. T. Finney at the Union Protestant Infirmary have been investigated and included in this report. I wish to express to Dr. Halsted and to Dr. Finney my great appreciation of this privilege.

The unique feature of this article and the one which, perhaps, best justifies its publication, is the fact that the 470 Whitehead operations which are herein reported were performed by 45 surgeons, young internes for the most part, and some of them in the first year of their hospital service. Hence

it may be assumed that the results obtained in this series of cases are not much better than might be expected at the hand of the average surgeon.

In surveying the literature I have given no consideration to the many papers describing minor modifications in the technic of applying the Whitehead principle nor to the numerous articles reporting one or two unfortunate results following attempts at the Whitehead operation. Whitehead[1] himself, in 1887, published a series of 300 cases which he had operated on by the circular method. Omitting particulars, he makes the simple statement that there were no deaths and no post-operative complications, such as hemorrhage, ulceration, abscess, stricture or incontinence. This paper was in the nature of a reply to critics and is less convincing than it might have been had the cases been reported in greater detail.

Yukelson[2] published a paper in Russian, the title of which translated is "Three Hundred and Thirteen Operations for Hemorrhoids by the Whitehead-Veresco Method." Unfortunately this article has not been accessible, and cannot be reviewed.

W. Graeme Anderson[3] in 1909, published a study of the after results of 300 hemorrhoid operations. Of these 150 were operated by the ligature, 100 by the Whitehead method, and 50 by the clamp and cautery.

By Anderson the Whitehead method was considered the most painful and the cautery the least painful; the catheter was necessary in 10 per cent. of the ligature cases, in 6 per cent. of the Whitehead cases, and in none of the clamp and cautery cases; the return of sphincter control was earliest after the cautery and latest after the Whitehead operation. There seemed to be a greater tendency to stricture after Whitehead operations than after the others, especially when the area healed by granulation was large. The statement is made that no Whitehead case healed by first intention; that skin tags were least often found after the Whitehead and most frequently after the use of the ligature. There were no recurrences within six weeks in any of the cases. Post-opera-

tive hemorrhage occurred after ligation in four cases, after the Whitehead operation in two cases, and in no case after the cautery. Very few of these cases were observed for more than a year.

In 1910, Takaki[4] reported briefly 176 cases. There were three strictures, two ulcers, and one death (from pulmonary embolus) in this series, but no note is made as to how many of the cases were observed after operation, nor for what period of time. One instance of paralysis of the sphincter is also noted, but with the statement that this condition existed before operation and was not a consequence of it.

O'Conor,[5] in the same year, describing minor variations in the technic as practised in his clinic, incidentally records 490 cases successfully operated on by the Whitehead method, but with no specific details as to post-operative study of the patients.

While the present paper was being written, Hadda[6] published a paper dealing with the same subject his material embracing 223 cases, of which 127 were seen or heard from afterward, some of them after the lapse of 7 years. Among these patients there were three post-operative hemorrhages and one death, the latter attributed to scopolamine poisoning from idiosyncrasy. 155 cases required catheterization, and in 104 of these cases it was necessary beyond the first day. Of the 27 cases examined, three had small skin tags, one a small prolapse of mucosa, and one a small ulcer of the mucosa. Among the cases replying by letter, one complained of "weakness" and pain in the rectum, one of the persistence of a sigmoiditis antedating operation, and a third of slight stenosis. The others reported themselves as satisfied with the results obtained.

Besides these articles there are several dealing with a much smaller group of cases. Martin,[7] Veron,[8] Labaume,[9] and McGlannan[10] report series of from eleven to thirty-nine cases, all with good immediate results. But very few of the patients were observed for more than a few months.

I was rather surprised to find that in my collection there

were no deaths, nor are there any notes as to the occurrence of anæsthesia disturbances, such as pneumonia and bronchitis. The absence of pulmonary complications may be due, at least in part, to the position of the patient on the operating table (head low and high buttocks), which prevented the gravitation of mucus, etc., into the respiratory tract. In many of the cases there were pre-operative complications. Thus in eight there was fistula, three were neurasthenics, and three suffered with fissure, two had rectal ulcer, two hernia and two polypi; others suffered from amœbic dysentery, chronic prostatitis, enlarged prostate, pilonidal sinus, lues, severe secondary anæmia and urethritis.

Among the post-operative complications are the following: in one case a hæmatoma which became infected; in four cases post-operative hemorrhage; in six cases there was infection of the suture line which caused a local abscess; post-operative ischiorectal abscess was observed once; in two cases there was post-operative fecal impaction, and in one of these chloroform was required for its relief. In most cases a lead and opium pill containing 1 grain of opium was given three times a day, for the first three or four days. In addition to this most cases required one or two doses of morphia (gr. one-eighth) hypodermically. In a few cases much larger amounts were required—as much as 3 grains of morphia in one case which was complicated by an extensive infection. In not all instances was a note made as to the necessity for catheterization; but memoranda as follows were obtained: catheter not used, 36 cases; used once, 43 cases; used twice, 15 cases; used three times, 20 cases; used more than three times, 42 cases. In one case the patient had to be catheterized for twelve days after operation. As to the condition of the wound at the time of the patient's discharge from the hospital, it was noted that there was a granulating surface of greater or less extent in 116 cases. The average time of detention in the hospital after operation in the first years of this series was about fourteen days; this has been reduced to about ten days in the later years.

To obtain the subsequent history of the cases treated by

tervals before and after the water administration; in some cases serum viscosity was also followed as an index of protein content. Typical response curves are shown in Chart 5.

The results indicate that the diuretic responses of normal dogs, hypophysectomized dogs without polyuria, and diabetes insipidus dogs are similar. It is of interest to note here that, in contrast, the chronic human diabetes insipidus patient shows little or no diuretic response to 3 per cent body weight of water by mouth. For reasons not yet understood, dogs during the first 10 days after hypophysectomy also show little or no diuretic response to such a dose of water. The results do not support the view of Verney and his collaborators[29] (1933) that the lag in water output behind water load represents the time for preformed pitressin to disappear. In our diabetes insipidus dogs there was presumably little or no preformed pitressin present and still the lag was similar to that found for the normal dog.

TABLE I

AVERAGE CONCENTRATION OF URINE AFTER 24 HOURS OF WATER DEPRIVATION

	Specific Gravity	Creatinine Mg. Per Cent	Urea N. Mg. Per Cent	NaCl. Mg. Per Cent
Normal preoperative.....	1.068	190	4270	1100
Postoperative diabetes insipidus...	1.035	145	1670	860
Normal preoperative.....	1.064	220	4100	1050
Postoperative hypophysectomized..	1.040	160	2100	1020

Effect of Water Deprivation in Dogs with Diabetes Insipidus.—The effect of depriving diabetes insipidus and hypophysectomized dogs without polyuria of water for 24 hours is shown in Table I. The figures represent the averages obtained on three dogs of each type before and after operation. Diabetes insipidus dogs can concentrate to a specific gravity of about 1.030, but normal dogs can concentrate up to a specific gravity of 1.065. Neither the normal nor the hypophysectomized dogs show any greater concentration after 48 hours than after 24 hours. The diabetes insipidus animal can hardly tolerate more than 24 hours of water deprivation. After that time, gradually developing weakness becomes marked and unconsciousness supervenes. Restorative measures, in the form of intravenous normal saline, are effective if given early after the development of such symptoms.

SUMMARY AND CONCLUSIONS

Experimental evidence is presented to indicate that diabetes insipidus results only after functional or anatomic removal of all the neural hypophysis, *i.e.*, pars nervosa, stalk, and median eminence.

The anterior lobe, while not essential for the existence of the permanent state of diabetes insipidus, normally probably plays a diuretic rôle.

The diuretic effect of the anterior lobe is not exerted solely through its

a narrow wire-like ring of fibrous tissue of wide calibre which easily admitted the index finger and caused no symptoms. In 14 cases a recurrence in some measure had taken place. One of these patients wrote that for 19 years he had had a perfect result, and then developed a thrombotic external pile. Another states that he had two small skin tags remaining from the operation. A third that he has a small external pile. Another merely says that there is still "some bleeding." Four others have what they describe as a "little return" of the piles. One patient, in response to letters, returned to the hospital, was re-admitted, and operated upon for an isolated hemorrhoidal polyp, which had developed since his original operation. In five cases there was more or less extensive recurrence of the hemorrhoids and of these, three were operated upon the second time. Upon one of the three a third operation was made, each of the operations being performed by a different surgeon and by a different method. This patient states that he still suffers from hemorrhoids.

Conclusion.—The Whitehead operation should not be considered a formidable procedure nor one which results "commonly in incontinence and stricture," as is frequently stated. It does not absolutely and forever preclude the return of varicosities, as some of its advocates claim that it does. A definite indication for its employment is the existence of a rosette or complete circle of varicosities. The simple cases presenting one or several isolated hemorrhoids may not require the Whitehead operation for their relief, but the minor procedures are not so thorough and seem less likely to result in a radical cure.

REFERENCES.

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