impaired, and in the remaining five the contraction was not maintained.

Cause.

Although all the reputed causes mentioned at the beginning cannot be excluded with certainty, there is no positive reason for thinking that any one of them was responsible. The most important cause to be considered is disseminated sclerosis, and in these cases careful examination failed to reveal any sign of the disease at the present time. Cases have, however, been reported where retrobulbar neuritis has been the first and only sign of the disease, and other manifestations have only come to light so long as ten years or more afterwards.

Neither tubercle nor syphilis requires serious consideration, and in this series in all but one case, which was described as doubtful, the Wassermann reaction was negative.

The controversial question in a group of cases of this sort is that of paranasal sinusitis. As already stated, many cases have been operated on by rhinologists and the sphenoidal sinus drained, with subsequent rapid improvement of sight, but that this is in most cases the normal course of events is not realized. Consequently, an improvement which may be none other than the ordinary course of progress of the disease has been attributed to the operation. As already stated, thorough examination of the air sinuses was carried out in all these cases, and no evidence of any infection was revealed.

This series of cases seems to demonstrate the existence of a group of cases of acute retrobulbar neuritis, which have no demonstrable cause, and which are certainly not due to sinusitis. There is no doubt that a considerable proportion of them will ultimately reveal themselves as cases of disseminated sclerosis.

I am indebted to Mr. Foster Moore for his assistance with these notes, and for permission to publish the cases.

REFERENCE

¹ *Medical Ophthalmology*, second edition, p. 166.

DIATHERMY IN THE TREATMENT OF PROSTATIC OBSTRUCTION.

BY

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THE idea of burrowing a channel through the prostate in cases of obstruction to the outflow of urine is probably as old as the hills. In more modern times it was recommended by John Hunter. In 1834 Guthrie invented a catheter containing a concealed blade for dividing the bar at the neck of the bladder; and in 1876 Bottini of Pavia introduced his galvano-cautery incisor with the aim of preventing haemorrhage. In spite, however, of opportunities that were only too numerous, the one method which was regarded as of any value at the end of the last century was the passage of a full size metal bougie, which was retained in the urethra for a few minutes. When the more modern methods of perurethral treatment are considered it should be remembered that a certain amount of relief was thus obtained. When more precise instruments became available "forage of the prostate" was recommended by Luys and the "punch operation" by Young. The operator, however, worked in the dark and under great difficulties; severe haemorrhage was common, and the obstructing mass was either crushed or burnt away with the cautery. The immediate results in cases that came under my observation were poor. Though I have not been able to follow up any series of cases, it would seem that scars resulting from such wounds must follow the course shown in other parts of the body and later contract and give rise to a stricture at the neck of the bladder. These methods received little support in other countries, and never came into favour in this.

In 1910 Beer first applied diathermy to growths of the bladder, which were destroyed by electro-coagulation. This

was the first practical method of treating such growths through the urethra, and had the advantage of being carried on in a water medium. Though sloughs were produced that took two weeks to separate, no infection followed and haemorrhage was never severe. The scar, unlike that resulting from open operations upon the bladder, did not contract and pucker up. This feature of the diathermy scar is well seen in the face, where, after the removal of rodent ulcers, the scar remains soft and supple, and differs very markedly from those which follow burns and granulating wounds. At that time the difficulty in applying diathermy to prostatic lesions was that, while the obstructing mass could be clearly seen, the electrode could not be applied to it through the ordinary cystoscope. About 1916 cysto-urethrosopes of the Brown-Buerger type were introduced, with which the surgeon worked from the prostatic urethra; with these not only could the parts adjacent to the neck of the bladder be seen, but the electrode could be applied to the obstructing mass under the control of the eye. Since 1918 I have by means of this instrument treated cases of prostatic obstruction by diathermy with much success; but it takes two or three weeks for the slough to separate, and during that time micturition may become more difficult and the passage of a catheter may be necessary. The diathermy punch of Mr. Kenneth Walker¹ is a great improvement, as now we have an instrument by which the obstructing mass can be seen, destroyed by diathermy, and removed at the same time. In the series of cases I have been able to follow up no stricture has formed.

When the operation of prostatectomy became popularized, at the beginning of this century, it was limited to the senile or so-called adenomatous enlargement. A perfect functional result followed, provided no malignant changes were present, and a mucous membrane flap was prevented from forming over the prostatic cavity. As the technique of the operation improved and the mortality diminished, it was found that in some cases the functional result was not so good. If from these cases were eliminated those where the symptoms were due, not to lesions of the prostate, but to diseases such as tabes, and those where malignant changes were present, the remainder fell into three main classes: (1) Those in which the prostate was atrophied or there was slight thickening round the bladder neck, the so-called "prostatisme sans prostate" of Guyon, or the prostatic bar to which Guthrie² first drew attention in 1830. (2) Those in which the prostate was small and fibrous. (3) Those in which the prostate was large and fibrous. These cases were characterized by the difficulty in removing the prostate, which was torn out rather than enucleated, by the shock and the amount of bleeding that followed, and by the prolonged convalescence, during which it was often necessary to pass sounds to keep the orifice dilated. Urinary symptoms persisted after the operation, and many of the cases died after a year or two with wasting and cachexia. Some surgeons regarded this as due to malignant changes, though none was found in the part of the gland removed, nor could any signs be detected on rectal examination. Death really resulted from renal failure and an infection ascending to the kidneys, both secondary to a stricture at the neck of the bladder.

When studying the pathology of the prostate it should be borne in mind that it is a secondary sexual gland, which, like the breast, undergoes involution about the age of 45. The adenomatous enlargement has been compared to the cyst-adenoma of the breast, and, like it, can be easily shelled out from the surrounding tissues. The different conditions found in the prostate are sometimes regarded as modifications of this; that, I think, is a mistake, for if they are not distinct pathological entities, they are at any rate very definite types of the same disease. Just as in the breast there may be a hypertrophic or an atrophic mastitis, so in the prostate there may be a large or a small fibrous prostate, and even atrophy of the gland itself, quite apart from the local changes in the glands of Albarran that are situated round the bladder neck. While the adenomatous enlargement tends to become progressively larger, this is not the case with the other varieties, for they are fibrous in type, and after reaching a certain size

remain stationary, or even tend to become smaller. Whether the fibrosis is the result of an inflammatory or a degenerative change I am not prepared to say; possibly both types occur. When an attempt is made to enucleate such prostates there is a tearing through of the fibrous tissue, which later contracts to form a stricture. And it is this tearing through of a gland that is richly supplied with nerve fibres, instead of enucleating in a plane of cleavage, that is largely responsible for the operative shock.

When the adenomatous enlargement affects the lateral lobes the urethra is compressed throughout its length. Removal of the obstructing mass by diathermy is very difficult, and, as the enlargement is progressive, the relief obtained is at the most temporary. On the other hand, when the middle-lobe alone is enlarged, the obstruction is limited to the bladder neck, and if not of a very large size can be removed by the diathermy punch. But both these types of enlargement are those most suitable for enucleation, and should not be submitted to diathermy, except, perhaps, where the middle lobe is slightly enlarged and the symptoms are not sufficiently severe to justify a major operation.

With the fibrous and atrophied prostates the urethra is not compressed throughout its length, and the obstruction is at the bladder neck. When the bladder is opened in these cases it will be found that there is a narrowing of the internal meatus, but that when the finger is passed through this the prostatic urethra appears more dilated than usual. Here we have a type of prostate that does not tend to become progressively larger and where the obstruction is localized to the bladder neck; the latter can be easily destroyed and removed, and does not tend to recur. After treatment by diathermy shock and haemorrhage are never severe enough to cause any worry, the convalescence is much shorter than after prostatectomy, the functional result is better, and the mortality is less. In 20 cases done so far by me there has been one death. When it is remembered that the type of prostate which is treated by diathermy is that which is largely responsible for the mortality after prostatectomy, it is obvious that a careful selection of cases will lead to an improvement in the statistics of this operation.

Should infection of the bladder or signs of renal failure be present and no improvement follow catheterization, a preliminary cystostomy is advisable. It may appear reasonable that, as there is now an opening in the bladder, the best line of treatment at the second stage would be removal of the gland. A preliminary cystostomy, however, does not make the operation of prostatectomy easier; it makes it, if anything, more difficult, and merely improves the condition of the patient so as to diminish the operative risk. Consequently the indications for treatment by diathermy will be all the more urgent here.

There is, of course, a danger of malignant disease arising in the part of the gland left behind; this has happened in one of my cases. Surgeons with a large experience of prostatectomies will, however, have come across cases where, after the removal of an apparently simple adenomatous prostate, malignant changes have developed in the part of the gland left behind. The temporary relief I had hoped for from diathermy in malignant prostates did not ensue; and here the operation is not worth while. This is probably due to the obstruction being throughout the prostatic urethra and not localized to the neck of the bladder.

So far as the clinical selection of cases suitable for diathermy is concerned, little difficulty will be experienced in the small fibrous and the atrophied prostates. When a rectal examination is performed in the latter the finger comes up against the posterior wall of the pubis, the hardness of which may lead to the impression that one is dealing with a malignant prostate. The examination carried out with a metal bougie in the urethra enables this error to be avoided. With the large fibrous prostate a careful cystoscopic and rectal examination is essential, and sometimes the differentiation between this and the adenomatous enlargement is by no means easy. The fibrous prostate is somewhat firmer, and on rectal examination there is not that projection backwards into the rectum, nor on cystoscopic examination that projection into the bladder, which

is found with the adenomatous prostate. The following cases are typical of my series.

1. W. C., aged 50, was sent to me by Dr. Bowen-Jones with a history of difficult micturition for five years. In August, 1922, the symptoms became worse, and were not relieved by the passage of metal sounds. In December, 1922, attacks of retention occurred, and in January, 1923, he was admitted under the surgical unit. Rectal examination showed atrophy of the prostate, and cystoscopy a bar over the internal meatus. The bar was destroyed by diathermy applied through the cysto-urethroscope, and he was discharged from hospital with a good stream and no difficulty. In August, 1923, obstruction to micturition again developed. Cystoscopy showed a tag of mucous membrane attached to the posterior lip of the internal meatus, which was destroyed by diathermy. Since that time he has been able to micturate without difficulty and has now no urinary symptoms.

2. W. R., aged 66, was sent to me by Dr. Jeffrey Jones with a history of frequent micturition since 1918 and difficulty for three months. In November, 1924, there was a diffuse enlargement of the prostate to be felt on rectal examination, and the bladder was midway between the pubis and umbilicus. In December, 1924, he was admitted under the surgical unit. There were marked signs of renal failure, and the blood urea was 80 mg. No improvement followed the tying in of a catheter, and a preliminary cystostomy was done on December 18th; during the next two days the tongue became dry and the blood urea rose to 120 mg. The general condition then improved, and as cystoscopy showed no large intravesical projection, diathermy was applied to the region of the internal meatus on January 7th, 1925, and again on January 26th. Following each of these applications there was no shock and no signs of uraemia, the blood area not rising above 60 mg. The suprapubic tube was later removed and the fistula closed. When seen one month ago he had a good stream, there was no undue frequency of micturition, and no residual urine.

Summary.

1. The application of diathermy is useful in certain cases of prostatic obstruction.
2. It should not be employed in the adenomatous prostate where such good results follow enucleation.
3. It should be reserved for the large and small fibrous prostates and the atrophied prostate.
4. Its application in these cases leads to a better functional result and a lower mortality than after prostatectomy.

In conclusion, I wish to express my indebtedness to Professor A. W. Sheen, director of the surgical unit, for the facilities he has placed at my disposal and for many useful suggestions.

REFERENCES.

- 1 Walker, Kenneth: BRITISH MEDICAL JOURNAL, January 31st, 1925, p. 201.
- 2 Guthrie, G. J.: *On the Anatomy and Diseases of the Neck of the Bladder and of the Urethra.*

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ERYSIPELAS TREATED BY FOREIGN BLOOD INJECTION.

THE note by Dr. Pines (December 5th, 1925, p. 1062) on the value of haemotherapy in erysipelas leads me to record the following case treated last May.

A Moroccan Jewess, aged 49, on whom I performed a submucous resection of the septum, was discharged from hospital after the usual forty-eight hours' stay. When she returned for inspection on the fifth day after operation a patch of erysipelas the size of half a crown involved the left ala nasi and extended towards the left lower eyelid. She had not used the nasal wash provided. In spite of nasal washes, followed by careful drying and dusting of the site and the usual methods adopted in such cases, the erysipelas spread rapidly, the left eye becoming involved.

On the seventh day, with the patient lying on her right side, 20 c.cm. of blood was removed by a cold non-citrated syringe from a vein in her right arm, and without delay injected intramuscularly into the left buttock, which had been previously prepared. The whole procedure was a matter of seconds, and so much was her attention concentrated on the withdrawal that she was quite unconscious of the buttock injection, for before leaving she asked how long the blood analysis would take, and would not believe that the blood had been injected. The effect was dramatic, for in the course of the next two or three days the erysipelas rapidly faded away.

When a wound is complicated by erysipelas the subsidence of the latter is usually followed by rapid healing or cleaning of the former, and so it was in this case, for with the clearing of the eruption the infection of the nasal mucosa rapidly diminished.