CASTRATION FOR THE CURE OF HYPERTROPHIED PROSTRATE.

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THE reception by the medical profession here and elsewhere of the suggestion made by me in June, 1893, that castration might be an effectual remedy for prostatic hypertrophy has been increasingly favourable. Up to that time no reference existed in surgical literature to the possibility of affecting the overgrowth by the removal of the testes. Since then, twelve more or less successful cases have been published. It is not too much to say that, in connection with the further corroborative evidence that has been brought forward, they serve to establish the operation as a rational and justifiable procedure. I have already reviewed[1] the history of eight of these cases.[2] The other four may be briefly summarised as follows:

Mayer and Haenel[3] operated, May 16th, 1894, on a man about 70, with a much enlarged prostate, cystitis, and ammoniacal urine, tenesmus and toxæmia, in whom catheterism was becoming impossible on account of the pain it excited. There were several ounces of residual urine. Some improvement was noted in a few days; after two weeks the tonicity of the bladder began to return; in three weeks the urine was nearly normal; and in six weeks the prostate had shrunk to its proper dimensions, the bladder emptied itself completely, no catheter being required; urination was performed only once in four hours, and the urine was limpid and of acid reaction.

These authors discuss the apparent analogy between the prostatic and the uterine fibro-myomata (which was what led me to the researches that resulted in my suggesting the operation to the profession), mention my confirmatory experiments on dogs (which gave a definite and scientific basis for the suggestion), and after quoting Ramm's cases, arrive at conclusions entirely favourable to the method on account of its comparative safety and the ease of its performance as contrasted with the other operative measures directed against the hypertrophied prostate.

Moullin[4] reported the case of a man, about 81, with complete retention due to a prostatic enlargement the size of an orange, with cystitis and failure of general health, and in whom catheterisation was impossible, the attempts being followed by hæmorrhage. Suprapubic aspiration was necessary on several occasions. After the castration the improvement was almost immediate, the prostate was appreciably smaller in ten days, and in three weeks had practically disappeared. An ordinary catheter could be readily passed. The bladder had begun to regain power. The urine was nearly normal.

J. I. Thomas[5] reports a case in which castration in a patient of 65, who had had symptoms of prostatic hypertrophy for fifteen years, had caused "considerable improvement." He adds: "Urination which was formerly very frequent, is now necessary but three times a day." This report was made very soon after the operation, and no further details are given.

B. Ricketts, of Cincinnati, reports[6] a case in which he did this operation in a patient, about 74, who left the hospital at the end of the sixth day. On the second day after the operation the patient could urinate with greater ease, and the pain was so slight that he said he had not had so much comfort for a year; he could sleep four hours at a time during the night, whereas formerly he had been getting up once every hour, and had been urinating thirty times daily. The condition continued to improve. A further report was promised later.

Launois[7] publishes an interesting memoir reviewing the whole subject and bringing forward some collateral evidence, chiefly from the works of Godard, showing that monorchidism is apt to be associated with unilateral atrophy of the prostate, and giving instances of such atrophy after gonorrheal epididymitis, and of complete atrophy in cryptorchis, after syphilis, sarcocele, etc. He too concludes that the operation is of distinct curative value.

What might be called a supplementary indication for the operation will, I think, be found in some cases in which with the usual urinary symptoms of prostatic overgrowth there are others referable to the sexual system, and often causing more serious trouble. Every genito-urinary specialist is familiar with instances of "psychopathia sexualis" in old men, but not everyone realises that they often have a physical rather than a psychic basis, and depend on the prostatic congestion and excitation incident to the early stages of hypertrophy. In one of Haynes's cases the relief experienced in this direction was as marked as that derived from the disappearance of obstruction.

[1] BRITISH MEDICAL JOURNAL, June 23rd, 1894.
[2] Haynes, 3; Smith, 1; Ramm 2; Powell, 1; White, 1. *Cent, für die Krankheit. der Harn und Sexual-Organe*, August 23rd, 1894.
[4] *Med. Press and Cir.*, September 19th, 1894.
[5] *Pittsburgh Medical Review*, September, 1894.
[6] *Cincinnati Lancet Clinic*, December 1st, 1894.
[7] *Ann. des Mal. des Org. Gén.-Urinaires*, October, 1894.

The details of several successful operations performed here (Philadelphia) will shortly be published.

The objections to the operation met with in practice have in my experience arisen altogether from the sentimental side of the question. As Launois says, men even of advanced age, "*aimant à se faire illusion*," insist upon retaining their testicles as evidence of a "*virilité passée*." This applies of course with especial force to the cases in which dysuria is slight or catheterism easy, the general health remaining unaffected. As to the more serious cases, such as those noted above, we have now reached a point in certainty of knowledge where we can promise results at least equivalent to those obtained by oöphorectomy for uterine fibroids, and I believe that the assertion I made in my original paper was correct, and that "there will be no lack of cases willing to submit to an operation almost painless, with a low mortality, and followed by no such unpleasant conditions as accompany persistent fistulous tracts, either suprapubic or perineal, even although the operation carries with it the certainty of sacrificing whatever sexual power has survived the excessive and often intolerable suffering of such patients."

CASTRATION FOR PROSTATIC HYPERTROPHY.

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FROM the commencement of "catheter life" to the death of the patient from bladder or kidney mischief, hypertrophy of the prostate gland is associated with so much worry and pain and danger that we should gladly welcome any means which offer relief from this distressing condition.

John Hunter[1] pointed out that the prostate of the perfect bull was much larger than that of the ox, and in more recent years the observations of Griffiths, Civiale, and others have shown that in man and animals removal of the testes prevents the development or produces atrophy of the prostate gland, according to whether the castration is performed before or after puberty. Mr. Harrison[2] also divided the vasa deferentia some years ago for the purpose of producing atrophy of the prostate; but the case was not followed up, and it was reserved for Professor White,[3] of Philadelphia, to make use of these facts in suggesting that castration should be performed in order to diminish the size of an abnormally enlarged prostate, and he instituted a series of experiments on dogs in 1892, which fully confirmed his expectations of the influence of the removal of the testes in producing atrophy of the prostate. Since then these principles have been applied to prostatic hypertrophy in men, and with a considerable measure of success.

The following case, which will serve as an illustration, has recently been under my care at the Bristol Royal Infirmary:

W. M., aged 73 years, had suffered from difficulty and pain in passing his water for the past five years, and during the greater part of this period he was compelled to use a catheter to empty his bladder. On two previous occasions he had been admitted to the Infirmary for retention, and for the last two years there had been blood in his urine on various occasions. About six weeks before admission he was said to have had a "stroke," and since then all his bladder symptoms had been much worse. He got up about four times in the night to pass his water; there was considerable pain in the bladder, and the use of the catheter was constantly necessary. The day before admission he failed to pass his catheter, and he was brought to the Royal Infirmary on August 29th, 1894. A soft catheter was introduced, and the urine, which was decomposing and contained a large quantity of blood, was drawn off. By rectal examination the prostate was felt to be very hard and prominent, and about as large as an orange, and it was impossible to reach the top of it with the finger. The temperature was about 99.6° F., and the patient seemed very weak. After this it was impossible for two days to introduce a catheter, and the bladder was aspirated above the pubes.

On the third day I succeeded in passing a metallic prostatic catheter, which traversed the urethra for 9¾ inches before the urine began to flow, the considerable depression of the handle which was necessary suggesting that the middle lobe, as well as the lateral lobes, was much enlarged. For about ten days his bladder was irrigated night and morning with boracic acid lotion, and, although the urine then contained very little blood and was less fœtid, the prostate did not diminish in size, and the patient was getting gradually worse. The kidneys were presumably healthy, as the total amount of urea excreted daily was about normal. After the matter had been fully explained to the patient, I performed double castration on September 11th. In consequence of the decomposition of the urine it was necessary to continue the irrigation of the

[1] Quoted by White in *Trans. Am. Surg. Ass. Phil.*, 1893, vol. xi, p. 167.
[2] BRITISH MEDICAL JOURNAL, September 23rd, 1893.
[3] BRITISH MEDICAL JOURNAL, and *Med. News*, June 2nd, 1894, p. 601.

bladder for three weeks after the operation; but on the seventh day the patient passed a small quantity of water of his own accord, and this gradually increased in amount, so that when the washing out of the bladder was stopped he passed all his urine naturally. Coincidently with this his general condition improved, and the prostate gradually became smaller.

There was a perceptible diminution in the size of the prostate at the end of the first week after operation, but in the third, fourth, and fifth weeks the increasing atrophy appeared to progress more rapidly. In three weeks after operation the patient began to get about, and in five weeks he was discharged. At this time his general condition had much improved; his urine was normal, he sometimes passed half a pint at a time, but he could not hold his water for more than four or five hours in the daytime. There was no "residual urine" in the bladder; the prostate was comparatively soft and about the size of a large horse chestnut. If a catheter was introduced, it passed easily, and urine began to flow along it when a distance of 8 inches from the orifice of the urethra had been reached without any more depression of the handle than is usual.

I saw the patient on December 11th—thirteen weeks after operation—and found that since his discharge he has not once had to use a catheter or to get up at night to pass water, and is now free from any difficulty in emptying his bladder, and the urine is normal in appearance and has no bad odour. On rectal examination, the prostate was felt to be rather smaller and firmer than at the last examination.

I do no propose to discuss the reason why castration is followed by disappearance of the prostate, as this question has been recently brought forward in the current medical literature, but it is well to note that in this case each testicle, with its coverings, when removed, weighed about 9 drachms, and on microscopical examination appeared normal; and that the secretion in the vasa deferentia was full of living spermatozoa. Other observers have not mentioned such facts, but I think they are important, and should be recorded, as we do not yet know whether atrophy of the prostate is caused by the removal of the functionally active testicles only, or not.

The method of operation I adopted was to make a median cut with scissors along the lowest portion of the raphé of the scrotum, when the testicles were easily turned out from either side; and I can strongly recommend this procedure for the rapidity and facility with which it is accomplished, and for the small amount of incision and suture required.

The operation we are considering has been performed nine times in various parts of the world, in addition to the case I have just narrated, and in each instance, so far as I can ascertain, atrophy of the prostate has ensued, and the local and general condition of the patient improved.

In all these cases the shrinkage appears to have taken place to such an extent that it is impossible to ascribe it to the mere relief of local congestion which may occur under certain conditions.

Here, then, we have a series of cases which strongly support the claims of castration for prostatic hypertrophy. It is not enough, however, to show that an operation succeeds, but it must be shown, also, that it compares favourably with other procedures before it can be allowed to supersede them.

It is not proposed that this operation should be done until "catheter life" has become more and more irksome or inefficient, or until the urine shows fermentative changes, and symptoms of cystitis have supervened. In other words, when we ought to think of drainage of the bladder and prostatectomy, then we ought to think of castration as another, and perhaps better, means of relief.

The permanent retention of a cannula or tube over the pubes or in the perineum is, no doubt, sometimes an effective and safe procedure, and would in many cases be preferred to castration; but even here I think the patient should be allowed the choice of the loss of his testicles as against the disagreeableness of a permanent trickling of urine from his bladder. Much the same argument might be urged against perineal prostatotomy which, however, has a mortality of 4.5 per cent.[4]

It is rather with prostatectomy that we should compare it, for this is the chief radical operation which has hitherto been relied upon as curative rather than palliative.

Perineal prostatectomy has a mortality of 14.3 per cent.. and suprapubic prostatectomy a mortality of 14.9 per cent.[5] If we compare these figures with the low death-rate of castration, and bear in mind the greater ease in performing, and the small amount of shock attending the operation of castration as compared with prostatectomy, it needs little conjecture to say which is the operation of the future, if the present successful results of castration for prostatic hypertrophy continue.

Then, again, we must consider the fact that prostatectomy owes its success very largely to the atrophy of the gland which follows surgical interference, and if this same result can be brought about by the procedure we are now advocating, with less danger and equal certainty, most surgeons and patients would prefer the operation of castration.

Of all methods of prostatectomy, the "combined method" of Dr. Nicoll[6] is, perhaps, open to the least objection, but in this it is admitted that subsequent atrophy of the testes may ensue in consequence of injury inflicted on the vasa deferentia during operation. Dr. Nicoll does not think this is of much importance to elderly men, nor is it; but if such results follow a somewhat severe surgical procedure, we may ask why it is necessary to perform the major operation if the act of castration alone is capable of bringing about the desired result?—the testes being virtually or really lost in either case.

[4] Moullin, BRITISH MEDICAL JOURNAL, 1892, vol. i, p. 1250; and White, *Annals of Surg.*, 1893, vol. 17, p. 72.

[5] Moullin, BRITISH MEDICAL JOURNAL, 1892, vol. i, p. 1294. See also statistics quoted by the author in the *Bristol Med.-Chirurg. Journ.*, 1892, vol. x, p. 297.

THE COOL BATH TREATMENT OF ENTERIC FEVER.[7]

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AFTER some preliminary observations, in which he referred to the widespread prejudice on the part of the public against the mode of treatment by cool baths, the author observed that though more generally identified with the name of Brand of Stettin, the bath treatment was undoubtedly English in origin, having been first suggested and practised by Dr. Currie, of Liverpool, in 1787. After his death, however, it soon lapsed into desuetude, and it was not until the year 1861 that it was revived by Brand. Since then it had gradually risen in favour until it had become the established practice of the German school. In England the bath treatment was still regarded as heroic, although many authorities, including Sir William Broadbent, Dr. Frederick Taylor, Dr. Cayley, Dr. Sidney Coupland, and Dr. F. J. Hare, had written strongly in its favour.

As to the indications for the bath, the author held that with a temperature of 102° F., to 104° F., maintained for a few days with marked evening rise, and no local lesion such as pneumonia to account for it, enteric fever might reasonably be suspected, and the patient placed in a bath for ten or fifteen minutes. The temperature should be taken half an hour after the bath, and regularly every three hours; the bath should be repeated at a higher or lower temperature, whenever the temperature in the rectum rose to 102.2° F. In some instances a tepid bath at 87° F., or 90° F., for thirty minutes was better borne; in others again a temperate bath at 78° F., or a cool one at 66° F. for ten or fifteen minutes. The author preferred as a rule the tepid bath at 87° F. After the temperature had ceased to rise to 102.2° F. but still remained above normal, a warm or tepid bath for fifteen, twenty, or thirty minutes night and morning, was beneficial and grateful to the patient. The author related four cases in the management of which he had rigidly adhered to the following code of rules compiled from various sources:—

1. A temperature of 102 2° in the rectum calls for a bath, and it must not, as a rule, be permitted to rise higher without giving the bath unless the patient is in a sound sleep.
2. The bath, long enough for the patient to be at full length in, is brought close to the bedside, and the patient carefully lifted in and out in the horizontal posture.
3. Half an ounce or 1 ounce of old pale brandy in 2 or 3 ounces of soda or aërated lime water to be given first (in case of adult).
4. The patient always must pass water before being put in the bath.
5. The patient to be immersed up to the neck; the head to be constantly sponged; and the chest and extremities, not abdomen, to be gently rubbed by an attendant.
6. The first bath to be given at 90° F. or 85°, and cooled down by adding cold water to 75° or 70°. If the patient bears it well subsequent baths may be given at 80° and cooled down to 70°. The cold water is poured over the patient's head and chest.

[6] *Lancet*, April 14th, 1894.

[7] An Abstract of a paper communicated to the Section of Medicine at the Annual Meeting of the British Medical Association, 1893.