CASE II.—*Forty-six Seedling Calculi of the Prostate, Combined with Urethro-Rectal and other Fistulae, and Strictures of the Penile and Bulbous Urethra.*

S. A., 35, Cingalese, cultivator, came into hospital on January 31st, 1914, complaining of great difficulty in micturition; he had also two urinary fistulae, one scrotal and one perineal, and a urethro-rectal fistula. There was frequency of micturition to the extent of about eight times during the day and five to six times at night. Whenever he urinated there was also an inclination to defaecate; he sometimes felt that urine dribbled through the anus. Micturition was most easily accomplished by resting on one or other buttock, especially the left, and coaxing the urine out by stroking the skin at the peno-scrotal junction. Even at the end of micturition he never felt that he had completely emptied his bladder. Whenever the inclination to micturate was strong there was some incontinence, the urine flowing out in drops at the fistulae and meatus. He states that for the last three years he has not had seminal emissions during coitus, an act which he is, however, capable of performing. He is the father of a child aged 4 years, but has had no children since.

His present illness dates from twelve years ago, when he had an attack of gonorrhoea, which lasted for about eighteen months, and was complicated by a left epididymitis, which terminated in a small focus of suppuration; this attack left him with disordered micturition, there being great frequency—at one time almost hourly—and considerable difficulty in passing water; he states there were times when each act lasted about half an hour. Some months ago there was a profuse discharge of pus through the rectum.

Operation.

On February 18th, 1914, Wheelhouse's operation was done, as the bulbous stricture was an impassable one; there was also a penile stricture and a prostatic urethro-rectal fistula. The scrotal and perineal fistulous tracks were dissected down to the urethra and removed. On inserting a Wheelhouse's probe into the bladder a sensation of grittiness was communicated to the hand; this led to the discovery of a large number of minute stones—forty-six stones were removed with a scoop; the largest were about the size of grape seeds, the majority about the size of cardamom seeds. A rubber catheter was passed from the external meatus into the bladder and tied in; the urethra was partially mobilized and the deficiencies left in it by the dissection of the fistulae were repaired with catgut. No attempt was made to dissect up and suture the recto-urethral fistula, as manipulation was difficult in the position it occupied, namely, in the prostatic region. The patient left hospital six weeks later relieved of his symptoms, but with the urethro-rectal fistula still persisting.

Description of the Calculi.

Forty-six were removed in all, a few being probably left behind. Four or five of the biggest were about the size of grape seeds; the others averaged about half the size. They were smooth and of various shapes; some were rounded, most flattened; the majority were more or less faceted. They came away in clusters, cemented together by a glutinous material. It was difficult to say whether they occupied separate pockets or were agglomerated together in a single one.

Mr. C. T. Symons's report on one of the largest of these was as follows: It consisted mostly of calcium phosphate, with a trace of another compound, probably oxalate. It contained no urates.

This was a case in which antecedent gonorrhoea seemed to play an important part. There were strictures and fistulae; there was undoubted evidence of persistent infection of the prostate, as shown by epididymitis with suppuration, and the fact that a prostatic abscess burst years later into the rectum establishing a recto-urethral fistula. In the infected prostate and the recesses left by foci of suppuration in it seedling calculi, the so-called true prostatic calculi, formed.

As to the mode of formation of these calculi and their relation to the corpora amylacea, it may not be out of place to summarize some views. Corpora amylacea are found in various organs of the body. Thompson says they are always present in the prostate after the twentieth year scattered throughout the gland, chiefly in the ducts about the verumontanum; in one prostate several thousands were present. They are microscopic as a rule. Their colour is a light yellow growing darker with age. Although like small uric acid calculi, they are not of urinary origin. Ziegler says they are due to degeneration of epithelial and connective tissue cells, others say to stagnation of gland fluid, calcified glandular epithelium, etc. Posner classes them as calculi, and English shares Posner's view, and says that a final cause of their formation is possibly a microbic invasion of the gland. The small bodies are mostly organic and the larger chiefly inorganic. According to Thompson the corpora amylacea, having attained the size of their enclosing follicle, act as foreign bodies, and in consequence of the general law that all mucous membranes

when sufficiently irritated throw out a deposit of calcium phosphate and carbonate, ultimately form calculi; the earthy matter they contain being from 45 to 85 per cent. They are associated with glandular hypertrophy and periacinous round cell infiltration; pressure atrophy may cause entire disappearance of the gland with the exception of the capsule. English points out that the paucity of symptoms is in striking contrast to the wide extent of disease in the gland, hence the great importance of physical examination. The complications apt to arise are abscess, fistula, incontinence or retention, and sexual disorders.

To return to the present case. On surveying the condition of things, we see that in addition to the prostatic calculi there were two strictures and several fistulae present; the symptoms, therefore, should be warily interpreted, as those caused by the calculi are almost hopelessly obscured by the other conditions. Most of the symptoms recorded were no doubt due to the strictures and fistulae rather than to the prostatic stones.

The absence of seminal emissions may have been due to:

1. Occlusion of the common ejaculatory ducts by the prostatic abscess, and stenosis of the vas and ducts of the epididymis on one side at least—the left—where an abscess is said to have formed. It is significant that there was no atonic impotence so often associated with chronic prostatitis.

2. The presence of urethral strictures and fistulae; these are of themselves sufficient to prevent any seminal fluid present from appearing at the meatus. The fact that a son was born to him about eight years after his initial attack of gonorrhoea and epididymitis is proof that the ducts from the testicle were not completely destroyed or occluded before that time. The events that occurred after this were (a) the prostatic abscess which burst into the rectum, and (b) the gradual tightening of the urethral strictures. It is therefore probable that the prostatic abscess was responsible for the absence of seminal emissions by destroying and occluding the openings of the ejaculatory ducts or by directing what little seminal fluid there was down the fistula into the rectum, the impassable bulbous stricture helping in this.

THE CAUSES AND TREATMENT OF SEVERE PRURITUS ANI.

By P. LOCKHART-MUMMERY, F.R.C.S.,

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PRURITUS ANI is a peculiar complaint in that, with the exception of pruritus vulvae, to which it is closely related, it differs from all other forms of irritation of the skin. Other forms of skin irritation, though common enough, are never so localized nor so persistent; moreover, they are generally due to some constitutional condition. Pruritus ani is seldom due to a constitutional condition, and the worst forms never are. Diabetes is always given a prominent position in the textbooks as a cause of pruritus ani, but I have never yet seen a case of bad pruritus ani due to this cause.

In this paper I do not propose to deal with those cases of pruritus ani in which the irritation is only of an intermittent character and is relieved fairly easily, although perhaps only temporarily, by some simple application, but with the really bad cases in which the irritation is almost continuous and sufficiently severe to cause insomnia and serious interference with the patient's general health. In this category one must include all the cases of "paroxysmal pruritus ani" in which itching of an intense character comes on suddenly in violent paroxysms. It falls to my lot to see a large number of such cases, and the first thing that strikes one is that they are very difficult to treat successfully. This is shown by the fact that a very large proportion of such cases have been previously treated by many other practitioners, and often for years without any permanent success.

The causation of pruritus ani is a very difficult subject, and one has only to read a few of the textbooks on rectal

surgery to realize that we do not yet know very much about the pathology of the condition. A great number of different causes are given by different authors, and there is little agreement. Thus one writer states that he believes the cause to be a small internal fistula beneath the mucous membrane. Another is equally convinced that the cause is hypertrophy of the anal papillae. Others put the cause down as constitutional, and so on. I have always believed that pruritus ani is a condition set up by a local cause, and increased experience has only tended to confirm me in this view. The obvious deduction from this is that the pruritus can be cured if the local cause is discovered and removed. Unfortunately, however, this is not the case, and any one who has had a large experience in the treatment of these cases must have been struck by the fact that in quite a large number the removal of an obvious local cause entirely fails permanently to relieve the irritation. What one finds is that in cases in which the pruritus has been in existence only a short time, say a matter of months, the removal of the local cause, such as, for instance, a fissure, polypus pile, or submucous fistula, will, if accompanied by suitable local treatment, lead to a complete and permanent cure of the irritation. On the other hand, where the pruritus has been severe and continuous for a long time, and is, in fact, a matter of years, the removal of even a quite obvious local cause usually fails to give any permanent relief. In the typical paroxysmal type, in which frequently no local cause can be discovered, treatment generally fails to give any permanent relief.

Many patients have in the course of time discovered some local application, often an ointment, which if applied frequently gives temporary relief, but they are helpless without this application, and there are times when it fails, with the result that they have sleepless nights and get bad attacks of eczema from the constant scratching. I have often seen patients who had become so desperate from constant irritation that they had seriously contemplated suicide, and one often finds that they have applied such things as pure carbolic, or almost boiling water, to the parts in order to try and get some temporary cessation of the itching. It is obvious, then, that we have to deal in these cases of old-standing pruritus with a different condition from that which is present in slighter and more recent cases, and that some change has taken place in the skin as the result of prolonged irritation, which is interfering with recovery. I believe that this change is of the nature of a fibrosis in the terminations of the nerves, or possibly the end plates supplying the affected area of skin. It seems probable that this has been set up by the constant scratching, but in any case it certainly takes a long time to occur, and is not present until the irritation has persisted over a long period. It is obvious that such a condition ought to be capable of proof by pathological evidence. There are, however, practical difficulties in the way of obtaining such evidence, and it is not at present forthcoming. It has for a long time been recognized that some definite pathological lesion of the affected skin is present in old-standing cases of pruritus ani, and various theories have been propounded as to the nature of this change. Thus, Unna suggested that it was due to a difference in the osmotic pressures of the different layers of the skin. It seems much more probable, however, that it is in the nerve extremities themselves that we have to look for the lesion.

The earliest treatment which was based on this assumption was cauterization or excision of the skin in the affected area, as sometimes carried out by the Allinghams. The operation originally described by Sir Charles Ball in the *BRITISH MEDICAL JOURNAL* (January 21st, 1905) was designed on this assumption. I shall not go into the details of the operation here, as a full description will be found in my book on *Diseases of the Rectum and Anus*, and also in Sir Charles Ball's original paper. The object of the operation is to divide all the nerves passing to the affected area of skin just before they reach the skin. I have for the last ten years frequently performed this operation, or some modification of it, and the results obtained have convinced me that the lesion lies in the nerve endings; and I have become so convinced from my own experience of the value of this operation that I always advise its performance in cases where I have reason to believe that this change in the nerve endings has already occurred, and careful non-

operative treatment has been given a good and sufficient trial.

There are several modifications of the original operation, but all have the same object—namely, division of the nerves before they reach the skin. One modification consists in making radiating incisions from the anus, through which the nerves can be cut. Other surgeons, again, advise the subcutaneous division with a tenotome. Personally I prefer the original incision described by Sir Charles Ball, or a modification of it which I have recently adopted, in which a narrow bridge of skin is left on each side to prevent retraction of the flaps. Several surgeons have, I know, discarded this operation owing to frequent failures to cure the patient. I believe, however, that the cause of the failure has been that the nerves have not been completely divided. It is obvious that if the operation is to be a success all the nerves to the irritable area must be cut. As an immediate result there will be complete anaesthesia of the whole of the affected area. The operation has not been successfully performed unless it is found on examining the patient the day after that there is absolute anaesthesia over the whole of this area. I am convinced that the cause of non-success with this operation is the failure to divide the nerves sufficiently. It is essential for success that the anaesthesia should be total. Many of the sensory nerves passing to the edge of the anus come down from between the sphincters and pass parallel to the bowel wall and just beneath the mucous membrane. These nerves are easily missed unless the operation is performed very carefully. The operation looks very easy and simple on paper, but in practice it is far more difficult than it appears, for one has to be certain to divide all the nerves, and at the same time to avoid buttonholing the skin or seriously damaging the blood supply. In a large experience with this operation I have never seen any serious sloughing of the flaps, or any stricture or other serious inconvenience result from it. The anaesthesia prevents pain after the operation, and the relief from the irritation is immediate. The anaesthesia is total for about ten to fourteen days. After this slight sensation begins rapidly to reappear in the skin, and sensation is generally normal in the affected area of skin within three or four weeks.

The only failures I have had with this operation have been cases in which the division of the nerves has not been sufficient, or in which the irritation has occurred in some area the nerves to which were not cut. The skin around the anus returns to a perfectly normal condition in a very short time, even though it may have been thickened and horny for years.

The explanation of this operation seems to be that new nerve endings grow into the skin to take the place of the original ones which have degenerated as the result of the division. It is inconceivable that the nerves should be able to find their original nerve endings, and one must assume that new nerve endings are formed.

I have never seen a case in which sensation was not normal at the end of a month or five weeks. This operation is the only method of treatment upon which one can at all rely to give complete and permanent relief in old-standing cases of pruritus ani and in severe cases of paroxysmal pruritus. I feel convinced that failure to achieve success by this operation is to be attributed to incomplete division of the nerves to the affected area. If, on the day after the operation, the affected area is found to be completely anaesthetic I do not think failure will result.

This method of treatment may easily be adapted to treatment of pruritus vulvae, and I have frequently used it in such cases with success. As already stated, the operation is by no means as easy as it looks, and requires to be carried out with great care. The after-treatment, too, must be carefully supervised in order to prevent sepsis beneath the flaps.

If properly performed, however, the operation gives wonderful results. The pruritus is immediately cured, and does not return. I have operated upon patients whose lives for ten or fifteen years have been rendered miserable by irritation, and they have never had any return of the trouble. One such patient went directly after the operation to reside in a tropical climate for two years, and never had the slightest reminder of the pruritus which had previously been a constant torture to her. I am convinced that division of the cutaneous nerves to the affected area

is the only treatment which affords any real chance of a permanent cure to sufferers from this condition when it has been in existence for more than a short time.

A cure has sometimes been effected by x-ray applications in large doses, but I have been very much disappointed with x-ray treatment in pruritus, most of my cases in which it has been tried having been complete failures. I have several times operated with success after x rays had entirely failed.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

FOREIGN BODY IN THE STOMACH.

AN idiot, M. E. J., was admitted on September 13th, 1906, at the age of 6 years. It was expressly stated by his parents that he had never suffered from epilepsy or convulsions of any kind.

In August, 1907, however, he was sent to the institution infirmary suffering from a succession of convulsions with severe collapse. The ordinary treatment for collapse was resorted to, and in addition the patient was ordered an enema, which resulted in the evacuation of a large quantity of such rubbish as hair, bits of bootlace, string, etc. He continued to pass this stuff for some days, but eventually recovered completely.

He was never a strong boy, and constantly suffered from lung trouble, colds, and diarrhoea, but there is no further

note of his having had another fit until May 6th, 1915, while in the infirmary with general debility and persistent diarrhoea. On this date he was very much collapsed, everything having failed to relieve the very persistent and offensive diarrhoea. Just before death he had an epileptic seizure, from which he never rallied.

On post-mortem examination, the stomach and beginning of the duodenum were distended and very hard. I removed the lower part of the oesophagus, the whole of the stomach, and the duodenum.

On opening these I found a hard, solid, and compact mass of hair, tape, bootlace, etc., as shown in the illustration, forming a complete cast of the stomach, and weighing 14½ oz. The stomach was slightly dilated, but showed no sign of ulceration; the remainder of the intestines were normal.

This case is of interest in two ways:

First, was the gastric irritation set up by the presence of this foreign body the cause of the boy's epilepsy?

Secondly, so much controversy has been raised lately regarding the shape of the stomach that I think the accompanying photograph is interesting as showing the shape, at least, of the contracted stomach.

The Royal Earlswood Institution,
Redhill, Surrey.

J. M. GAGE.

It is reported that in Hungary several doctors have been arrested on the charge of improperly giving medical certificates to persons who sought to avoid military duties.

D

Reviews.

ARTERIAL DISEASE AND ANGINA PECTORIS.

THE unstinted admiration of the profession will be accorded to Sir THOMAS CLIFFORD ALLBUTT for the untiring energy which he has displayed in the devotion of the later years of his busy life to the advancement of medical knowledge and to the promulgation of new lines of thought on many of the obscure phases of medical science.

Many as have been the subjects to which he has devoted his remarkable powers of clinical investigation, there are few to which he has given more earnest thought than to the problems associated with arterial pressure and the conditions under which it may be modified.

The depth and wide range of his study of this subject may be judged by the two weighty volumes on *Arterial Disease and Angina Pectoris*,¹ which have recently been made public. Nearly a quarter of a century has passed since he made his own views on these points known to the profession, and on several occasions in recent years he has pressed some of them home in addresses and lectures, but the difficulties and intricacies of the research have been made increasingly manifest as time has gone on, and the literature of the subject has reached huge proportions. In order to deal fairly with the observations and conclusions of others, Professor Allbutt has expended a vast amount of energy in the attempt to bring them into some sort of line and order. His readers will readily concede the claim, laid down in the introductory chapter, that such labour has been honest labour, undertaken with the sole desire to unravel a very tangled skein. Although described as the winter fruitage of an old tree, they will also find it to possess the soundness of maturity, delightfully blended with the mellowness of age. The perusal of a work such as this is indeed a delight to the clinical reader.

Careful observation, checked by critical acumen; reasonable deduction tempered by common sense and well-balanced conclusions enunciated after judicial summary; are the distinguishing features of the methods adopted throughout this important work. No one, and least of all the author himself, would claim that finality has been reached. There is far more yet to learn than has hitherto been achieved, but a definite classification is possible which, if accepted, may go far towards a better understanding of the disease and its treatment in time to come.

Arterio-Sclerosis and "Hyperpiesia."

Degeneration of arteries, localized or diffuse, producing visible lesions, has been recognized since the earliest days of medicine, but it was not until the middle period of the last century that the microscopic changes in vascular walls began to be noted and described. The condition known as arterio-capillary fibrosis was gradually demonstrated and its close association with renal disease was generally accepted. With it also was associated the condition of increased tension within the pulsating vessels, and this high tension was directly attributed to the altered condition, with loss of elasticity in the vascular wall, coupled with the hypertrophy of the left ventricle of the heart, which was, in itself, the consequence of the obstructed circulation. About the year 1875 the late Dr. Mahomed of Guy's Hospital brought forward some striking evidence to prove that the condition of high tension was not always the consequence but might be the forerunner of the renal and vascular changes of a later stage. Although it was afterwards abundantly proved that such cases of high vascular tension might continue for long periods without producing the more obvious lesions either in the renal or other organs, still the work done by Mahomed definitely established the fact that high tension might be present without any recognizable cause for it.

It is to this form of high arterial tension unassociated with renal disease that Sir Clifford Allbutt has devoted his best powers of study and investigation during the last twenty years; the outcome is embodied in the work under review. While others have been content to follow their leaders in maintaining that high tension is produced by

¹ *Diseases of the Arteries, including Angina Pectoris*. By Sir T. Clifford Allbutt, K.C.B., M.A., F.R.C.P., F.R.S., Hon. M.D. Dub., LL.D., D.Sc. In two volumes. London: Macmillan and Co. 1915. (Med. 8vo. pp. 546 and 565. 30s. net the two volumes.)