

been once inflamed, the testicle appears more susceptible of the same misfortune again, so that those who have suffered from it should be as careful as possible to avoid subsequent attacks, or the evil effects will probably increase each time. Impotence not unfrequently follows orchitis.

Sometimes the inflammation ends in suppuration, the matter escaping by numerous little sinuses or openings, which eventually close and heal when all is discharged. In all these cases, however, the testicle is more or less wasted, and sometimes entirely destroyed. At other times, the pus will not discharge at first, but assumes the form of a firmish curdy mass, similar to the substance of the brain, and remains for a long time. The organ is then much more liable than before to inflammation, and its internal structure gradually undergoes a change by which its secreting powers are totally lost. In some of these instances, the testicle becomes nearly as hard as a stone, and on being dissected appears much like cartilage or bone.

In some persons acute orchitis much resembles rheumatism, being affected by the changes of the weather or by exposure, and coming and going again in a short time. Indeed, some writers speak of it then as *rheumatism of the testicle*, and treat it the same as that affection in other parts of the body. I have known some men so extremely sensitive in this organ that an attack of orchitis was sure to follow if they merely pressed the testicles on crossing the limbs, and especially if they rode on horseback. In fact, many a severe case has arisen from being thrown forward upon the pommel of the saddle.

Inflammation of the testicle sometimes appears in very young infants, not more than a few days old, and without our being able to assign any cause. I have thought sometimes that it arose from teething, and at other times from an improper mode of *carrying* the child, by which these organs were bruised. I saw one instance wherein the inflammation, which was very severe, appeared on *the day of birth*. In general, these infantile cases can be cured by simple fomentations, or cold lotions, with a dose or two of castor oil. When very severe, a leech may be applied, and three or four grains of the *powder of mercury and chalk* given. When arising from mumps, it usually subsides when the primary cause is removed, though it may remain afterward, and must then be treated as above advised.

It is somewhat disputed among medical men whether these inflammations in infants ever permanently injure the testicle or not, but I am persuaded they often do so, and, in all probability, many a man has been made impotent for life by this affection when a child. It is, therefore, of the first importance not to neglect this trouble, though it may be but slight, as the after effects may be serious.

It is proper to remark here that the mumps arise in adults as well as in children, and that they may affect the testicles, and cause impotence, as well at one period as at another. Such cases as these afford a singular proof of that remarkable sympathy which exists between distant parts of the body, but the nature of which we cannot explain.

Either of the following recipes give excellent cooling lotions, applicable to all cases:

R. Lime-water, one ounce; alcohol, seven ounces; mixed together.

R. Hydrochlorate of ammonia, one drachm; cold water, five ounces; alcohol, one ounce; mix together.

The last lotion is an excellent one to apply to the scrotum and perineum. In many persons, however, hot fomentations succeed much better than cold lotions.

It is often very beneficial, particularly when the pain is severe, to cause a little nausea or vomiting; for which purpose a quarter of a grain of *tartar emetic* may be given every three or four hours, till the effect is produced. This frequently gives great relief, and in a short time, when all other means fail.

In very obstinate cases, attended with pain, two or three grains of *calomel* should be given, at bed-time, mixed with eight or ten grains of *Dover's powders*. This may be given two or three times a week.

It is sometimes a good plan to use the *plaster of ammonia and mercury* to strap the testicle with, in the manner before described, so as to gain the advantages of *compression* and the effects of *mercury* together.

If the inflammation and tenderness all subside, but the swelling and hardness continue, the following solution may be rubbed over the scrotum every three or four days:

R. Iodine, one drachm; iodide of potassium, half a drachm; alcohol, one ounce; dissolve all together.

In many persons, particularly those of a *scrofulous* habit, acute orchitis has a tendency to assume the *chronic* form, after the first severe symptoms have subsided, and this is perhaps a worse state than the other. In chronic orchitis a deposit of yellowish matter takes place, in different parts of the testicle, at first soft but gradually becoming harder, till at last the organ feels like a stone. This matter blocks up the seminiferous tubes, and destroys their power of secretion, so that impotence ensues. It was formerly the custom to call such cases *schirrhus*, but this is improper, as it might lead to the idea that they assume a malignant form, which is not the case. Chronic orchitis may either follow from the acute form, or it may arise spontaneously, like scrofulous affections of other parts; and it also frequently follows a long course of intemperance or licentious indulgence, and may even be produced by the long-continued and injudicious use of mercury.

This form of the disease may give rise to but little inconvenience for a long time, though the swelling may be of considerable size, unless a blow or strain be experienced, when the symptoms become immediately acute, and relief is sought for. Usually in a few weeks the swelling is observed to *point* in some particular part of the scrotum, and eventually it breaks, discharging some pus, together with a fungous-looking body, which appears rough and bleeding. In a short time the opening enlarges, and more or less of the testicle itself passes through, the whole forming a granulated tumor of a yellowish white color, studded with pale red or black patches. This tumor is tightly embraced round its neck by the edges of the opening through which it passed, and which become very thick and red. A thin watery discharge flows from it, often mixed with semen, but rarely with blood.

As soon as this break occurs, and the parts pass through, great relief is felt, and the disease may remain for a long time without undergoing any further change. The tumor itself is rarely tender, but may be handled, cut, or burnt with caustic, with but little inconvenience. It is not unusual to find this singular protrusion in scrofulous children who have had inflammation of the testicle.

It was formerly the custom always to remove the whole testicle when afflicted with this fungous growth, but now the practice is seldom resorted to. The protruding part is cut off with the knife, or burnt off with caustic, and the skin of the scrotum being then brought over it, the wound is healed, and no further trouble is experienced. In many cases a cure is even effected spontaneously, or by means of a

simple wash of six grains of nitrate of silver to one ounce of water, with some internal alterative medicine.

The best medicine in chronic orchitis is *blue pill*, five grains of which should be given every night, with *one grain of opium*, till the gums feel a little sore.

In some cases a better treatment is to administer the compound extract of *sarsaparilla* internally, and sprinkle the fungus itself with equal parts of *powdered savin* and *sulphate of copper*, occasionally varying the medicine by giving a little of the *wine of iron*, particularly if the patient be weakly and sinking.

It must be admitted, however, that inflammation of the testicle is, in any form and under any mode of treatment, a disease extremely dangerous to the patient's sexual powers, though it may not compromise his life, nor interfere much with his general health.

#### OSSIFICATION OF THE TESTICLE.

In some few cases, the testicle has been known to *ossify* or become more or less converted into *bone*. The causes of this degeneration are unknown, and unfortunately we know of no remedy. I have thought, in some few cases I have seen, that it was more likely owing to excessive *continence* than anything else, but it is impossible to decide.

The ossification generally commences in the middle, and may be felt like a hard kernel, which gradually extends till the whole organ is affected. In all cases when a hardness of this kind is felt, immediate resort should be had to fomentations and poultices, because it may be but a simple induration which they will remove.

It is probable that ossification and induration most frequently arise from *orchitis*, particularly when there have been many consecutive attacks.

#### ARREST OF DEVELOPMENT AND WASTING OF THE TESTES.

The testes, like other parts of the body, are liable to be arrested in their development, from causes unknown to us, and this arrest may either be permanent or the development may be completed at some after period of life. I have known instances of men, at various ages, with testes remarkably small, and passions nearly dormant, in whom a sudden development took place from the sight of some female who excited their desires to an unusual degree. In all probability these persons would always have remained as they were, but for this occurrence, as many others similarly circumstanced do; and we have thus a proof of the decided influence that the awakened feelings may have on physical development.

In one instance where I was consulted, in a case of this kind, the left testis was about the size of a small hazel-nut, and the other still smaller, the person being about twenty-eight, and possessing the usual feelings of his sex, though in a slight degree. Many circumstances induced me to think that the organs were healthy, and that in all probability their further growth would ensue, under proper treatment, and from the new impetus given to his desires by his wish to marry. I, therefore, advised a stimulant plan of treatment, similar to that which will be directed in a subsequent article, and advised him to wait patiently. The result justified my opinion; the organs began to enlarge very soon, and in two years' time were of full average size, so that he had no misgivings whatever about marrying.

It is very often the case that persons who had scrotal hernia in childhood have

the testes small, owing to the pressure on the cord of the instrument worn to cure it, and with some who have had mumps their full growth is never attained.

Any causes that prevent the full supply of blood from going to the testes will prevent their growth, or cause them to waste, and it is in this way that many such cases arise. If the *spermatic arteries* be small, which supply them with blood, they do not receive sufficient nutriment, and, therefore, cannot grow nor secrete much semen. These arteries are very long, and exposed to several causes of injury as they proceed through the abdomen, so that they frequently become more or less injured, and the testicles suffer in consequence. Sometimes they are pressed upon by the other parts, in passing through the ring, and at other times they are affected by aneurism, or their walls thicken and partly close up the passages. In old people, the spermatic arteries are very apt to become more or less obliterated, and this is the chief cause of that wasting of the testes so often seen at that period of life. To fully prove this, the spermatic artery of a dog has been tied, leading to one of the testes, and that in a short time was completely wasted away, while the other remained perfect. It has even been proposed to perform this operation, which is comparatively simple, instead of castration, when we wish to destroy the procreative power in animals. Such facts make it evident that the power of the testes, and consequently the *amative propensity* of any man, depends materially upon *the size of the spermatic arteries*—probably much more so than upon any peculiar structure of the brain. It is certain that if these arteries be destroyed in early life, no *amativeness* can ever be felt, nor any procreative power be established. A knowledge of this fact teaches us that the extent, both of the power and the propensity, is very much, *if not entirely*, under our control, if the supply of blood admitted to the testes can be duly regulated. This is a point never before attended to in medical practice, that I am aware of, but I have satisfied myself of its correctness by repeated experiments, and I look upon it as being of the greatest value. There are many means by which the amount of blood flowing to the testes may be regulated to a great extent, some of them increasing and others decreasing it, as I have shown in many of the cases described. It is often the case that badly-fitted trusses, by pressing on the arteries, will cause the testes to *waste*, while, on the contrary, an ill-made suspensory bandage, or even tight clothing, by chafing the parts, will draw the blood to them till they are intensely excited, or even till inflammation ensues. This shows us what principle to act upon in practice, adapting the appliances to the peculiar circumstances of the case. Hot stimulant applications will bring the blood to any part, while cold astringent ones will *drive it away*, and these alone, judiciously used, will often accomplish more than all the internal medication, or mere *moral chiding* ever yet tried. Besides these, however, there are various other means, mechanical and medical, which will be described as we proceed, and sometimes *instruments* may be constructed, for special cases, that will effect almost miraculous results.

I have sometimes used a modification of the instrument called the *congester*, which will be described in a subsequent article, for the purpose of drawing blood to the testes, and of enlarging permanently the spermatic artery. In short, all the means resorted to for causing an increased flow of blood to the *penis* may be used, to a certain extent, and in a modified form, to the testes. As before remarked, I have had numerous patients, of all ages, whose testes had always been too small and inactive for the performance of their functions, and yet, by appropriate treatment, most of them have attained their proper growth and full powers.

*Wasting of the testes*, after they have been of a proper size, is a much more serious matter, as it usually results from some disease that is likely to permanently destroy them, though occasionally the causes of it are under our control, and the loss may be repaired. In addition to all the causes above enumerated that prevent development, we may also enumerate hydrocele and hæmatocele, of long standing, and also scrotal hernia, all of which may cause the testes to waste, by the continued pressure which they exert. Spermatocele will also lead to the same result, as stated in the article on that disease. Too long-continued and strict *continence* will also waste the testes in many persons, notwithstanding what is said to the contrary by some writers. These organs can no more preserve their powers when entirely unused than others can, nor is it in any way conducive to their health to leave them totally inactive. I am aware that it has been said that those who take vows of celibacy still preserve these organs, and in full development, but that has very little weight, because no one can tell what may have been the actual observance of those vows, nor how far *involuntary action* may have taken place. I am myself fully convinced, from numerous observations, that total inaction of the testes, *in every form*, is most certainly followed, in most cases, by their wasting and decay. I have known men who boasted that they were strictly continent, and had been so for years, without any apparent injury of this kind, but on proper examination I have satisfied them that the semen passed almost constantly *in the urine*. It is scarcely necessary to say that such an action was unnatural, and decidedly injurious. The assertion, made by some theorizing physiologists, that the semen, when not discharged, is absorbed into the blood and invigorates the system, is unsupported by a single fact, or even by plausible reasoning, and therefore requires no refutation. Many a man who has prided himself upon his immaculate purity, and denounced those who were unable or unwilling to totally abstain, has been himself the victim of a constant *pollution*, both unpleasant and injurious. True virtue consists in a proper *use* of those powers given to us, and not in their total abrogation.

There are several causes of a nervous character that will also lead to wasting of the testes, such as paralysis of the lower part of the body, or injury of the spine in the neighborhood of the nerves leading to them, and sometimes even long-continued anxiety of mind. The most frequent causes, however, are probably *inflammation* and the *mumps*, particularly in early life. Excessive indulgence not unfrequently ends in gradual wasting, and masturbation still oftener, especially if accompanied by intemperance in strong drink. I have known intense excitement followed by inflammation and subsequent wasting in a very short time, and I have known inebriates wake from their dreams of intoxication to find themselves impotent, in numerous instances.

There are some drugs which exert an influence this way occasionally, and to a very marked degree. Mercury will in some, if long continued, so will opium, and iodine still more frequently and decidedly. It is, therefore, the duty of the physician to watch well the effects of all such remedies. *Tobacco*, I am satisfied, is decidedly injurious to many men, and when used to excess, will impair the tone and energy of these organs to a great extent; in several instances, I have had good reason to attribute wasting of the testes to its influence.

Injuries of the head must also be enumerated as occasional causes of wasting of the testes, though we cannot explain why. Several instances of the kind have been noticed, particularly by army surgeons, and the fact is established beyond doubt.

Baron Larrey gives a remarkable case, which came under his own notice. It was that of a soldier, a healthy, robust man, with strong sexual propensities and endowments, who had a portion of the back part of his head cut off by a saber blow. He recovered from the wound, but lost the senses of sight and hearing on the right side. Pain was also experienced down the spine, and a peculiar creeping feeling in the testicles, which also began to waste, and *in fifteen days* were no larger than beans. He completely lost all desire for sexual enjoyment, and apparently even all remembrance of it. M. Lallemand also mentions a case, of a French soldier similarly injured in the expedition to Algiers, who speedily experienced wasting of the testes, loss of sexual desire, and all power of erection.

Bruises of the testes are nearly certain to be followed by inflammation and wasting if severe, and few injuries cause more acute physical suffering, or affect the system more generally. Sickness, vomiting, and death-like fainting generally result from bruises of these organs, and sometimes even delirium. Constant pressure, from almost any cause, even though slight, will also cause wasting, as is seen in many persons who pass much time on horseback. It was even the custom formerly, in Turkey, to *make eunuchs* by squeezing the testes instead of castrating, and some persons operate upon animals in the same way now when they wish to emasculate them, the squeezing causing them to waste away. *Cutting* these organs with *sharp* instruments, so as not to bruise them, may not be followed by any evil effects whatever. Many instances have been known of their being cut and torn considerably, both by accidents and during surgical operations, but with no detriment to their powers, unless inflammation or mortification has ensued. Fanatics and insane people have injured themselves in this way frequently.

In Lapland, those among the male reindeer which are not needed for pairing, have the testicles destroyed while young, by the old women, who chew them with their gums till they are all broken up. This is done in place of cutting them out at a later period.

All that we can do in these cases of wasting of the testes is to find out, if possible, the immediate or exciting cause, and remove it. Very frequently, however, no cause whatever can be ascertained, and often when it can be it is not under our control. Still no such case should be left unattended to, and its treatment, if any be thought advisable, should not be neglected a single day.

#### TUBERCULAR DISEASE, OR CONSUMPTION OF THE TESTICLE.

This is essentially the same disease as consumption of the lungs, being characterized by the production of *tubercles* in the substance of the organ, which eventually suppurate and break, and entirely destroy its substance. In most instances, the patients are either decidedly *scrofulous* or evidently disposed to consumption, and generally both testes are attacked, either together or consecutively.

The symptoms are usually a slight uneasiness, in some particular part of the testicle, which is soon followed by violent swelling, either in the body of the organ or in the epididymis, but with very little acute pain, if any. The swelling feels uneven, or studded with little lumps, one of which eventually projects and bursts, discharging a quantity of pus, and thick curdy matter of a yellowish color. It may, however, be a year or more after the swelling occurs before it breaks, though when one opening is formed others are apt to follow. The opening evidently communi-

cates with the interior of the organ, and after venereal excitement it is not unusual for semen to flow from it, along with the pus.

In some few cases the tubercles will heal, and the wound close, leaving the testicle only partially wasted, but more frequently they continue to discharge till it is all completely gone, or till the whole system is so affected that death ensues. Occasionally the whole testicle will pass through the wound, and will remain protruded till it is entirely gone.

This affection occurs sometimes in children of a scrofulous habit, and completely destroys the testes in a short time.

The treatment must depend upon many circumstances, such as the patient's age, general health and habit of body, and mode of life. As a general rule, it must be constitutional, or calculated to act on the whole system, so as to induce a beneficial change in its action. The *alterative* medicines are therefore most to be relied upon, such as mercury, iodine, and sarsaparilla, and in cases of tonic debility *iron* must be administered. The diet, air, and climate, also exert much influence. Consumptive people are always more or less liable to this affection, and I am persuaded that in many it exists sufficiently to impair the power of the organ, and cause partial impotence, even when it does not proceed to the suppurative stage.

#### FOREIGN BODIES IN THE SCROTUM ALONG WITH THE TESTICLES.

Sometimes little round bodies like peas are found in the tunics, composed of firm cartilaginous matter or bone. I have seen one as large as a marble, and hard as ivory. It is seldom there are more than three of them. The origin of these bodies can only be conjectured, though they are probably only diseased secretions (like those sometimes found in the joints), which were first attached to the tunics, and then became loose.

Worms, hydatids, and other living beings are very rarely met with, though they have been occasionally.

In some instances the scrotum has contained the remains of a *fetus*, which had evidently descended from the abdomen along with the testicle, as explained in a former article.

#### NERVOUS AFFECTIONS OF THE TESTICLES.

The testes, like other parts of the body, are subject to several kinds of nervous affections, which frequently cause exquisite misery, though they may not lead to any positive injury.

*Irritable Testis.*—This is a form of nervous disease in which the testis is in a constant state of peculiar *uneasiness* and *irritation*, rather than acute pain, though sometimes it is more painful in one particular spot. It is so exceedingly sensitive that the touching of the dress, or the mere rubbing of the scrotum against the limbs, causes such distressing annoyance that the sufferer dislikes even to move. Sometimes the irritation extends up the cord, so that the movements of the bowels, or the passage of urine, become exciting causes, and the patient cannot even cough without an increase of his misery taking place.

In some cases this morbid sensibility affects both testes, and in others only one, which is usually the left. It does not appear to cause any alteration in the parts, nor swelling, except occasionally a little fullness, particularly of the cord, and some

relaxation of the scrotum. It is seldom that an attack passes off very soon, but more usually it lasts several months, during which the sufferer loses all relish for society, and almost all capability for enjoyment in any form. All his thoughts are fixed upon his sufferings, and the idea takes possession of his mind that he will never be better, or that he will be impotent, or die of cancer, and some request their physicians to castrate them, to avoid these dreaded evils.

The causes of this distressing affection are partly constitutional, it being chiefly met with in those who are naturally weak, irritable, and disinclined to physical exertion, or to be hypochondriacal and dyspeptic. It is, however, produced, in most cases, by some derangement of the genital organs themselves, more especially such as are brought on by masturbation, excessive indulgence, or involuntary emissions. Young persons of a nervous habit and strong sexual feelings, are also liable to it while unmarried, and I have been consulted in many such cases which could not be benefited by any kind of treatment till marriage took place. In a modified form it is often experienced about the period of puberty, in consequence of the great and unusual activity of the organs at that time, and much evil may result if a word of advice and caution be not then given. The young person will in all probability discover that a temporary relief can be obtained by the vicious practice of self-indulgence, and not knowing that this will really *increase* the irritation, eventually he goes on with the practice till his health is seriously impaired and his sufferings aggravated almost beyond endurance.

The treatment of irritable testis depends in a great measure upon the peculiar condition of the patient, and the state of his general health. In many cases it is so entirely of a *nervous* character that we need merely advise a change of air and scene, or cheerful company, or some interesting mental occupation, in short, anything that will arouse the sufferer to activity, and turn his thoughts away from his affliction. If he be dyspeptic, it is essential that his digestive organs should be attended to, and if he be costive, which is often the case, the bowels must be brought to a more regular state before improvement can even be hoped for. In cases where there is great debility, tonics must be used, such as the *steel drops*, or *Peruvian bark*, and a generous diet must be advised, with a little wine. The use of *cold water* externally is of the very first importance, as it gives tone to the parts, and removes the morbid sensibility, more perhaps than anything else. The parts should be freely bathed with it two or three times a day if possible, or at least night and morning. In obstinate cases, a plaster of *belladonna ointment* may be placed over the whole scrotum, or laudanum may be used as a lotion. A good suspensory bandage is also very frequently of great service.

In addition to any treatment, however, *and still more essential*, is a knowledge of the cause of the trouble. If any of the above-named practices are persisted in, or if the patient's situation in life is unsuited to his temperament, no great good can possibly result from medical treatment alone. These things must therefore be spoken of, either to the patient himself or to his guardians.

It is not necessary to perform castration for this disease, as it is for some others, because it is not a serious one, and generally either subsides of itself in time, or can be relieved by appropriate treatment.

In one instance, a gentleman was affected with this morbid irritability, in one of his testes, just before the time appointed for his marriage, and was so convinced that it was but the beginning of a greater evil, that in spite of all advice to the contrary,

he insisted upon having the organ removed, which was done. Directly after, however, the other began to be as irritable as the lost one had been, but this of course he was not so desirous of parting with, and therefore bore with the trouble. He was married and had no further trouble afterward. The removed testicle was perfectly healthy and sound.

*Neuralgia of the Testes.*—This is a nervous disease of a much more serious character than the one already described, and more difficult to treat. It is characterized by acute pains, sometimes lancinating and at others dragging or pricking, which are usually accompanied by spasms of the cremaster muscles by which the testes are drawn forcibly up to the groin. In general these pains come on periodically, as in other cases of neuralgia, and between the paroxysms the testes are often perfectly free from pain, even when handled, though there is occasionally a little morbid sensibility in them, with perhaps a little soreness on the edge of the hip-bone. The attack may last only a few minutes or many hours, and is usually confined to only one testis; some patients have it come on twice a day, others once a day, and some again only once in several days. Some are affected with sickness and vomiting, and others with shiverings and cold perspirations, while others again experience such intense agony that they roll upon the ground and groan, or perhaps faint away.

In nearly every instance when examinations have been made of the testes so affected, after their removal, no alteration whatever has been detected in their structure, nor any indication of disease to which the neuralgia could be ascribed. In some long-continued cases, where the pain has been great, there has been a little swelling and inflammation, but this is rare.

The causes of neuralgia of the testes are but little known, or rather, perhaps, not known at all. It is met with at all ages, and in almost every variety of constitution, though most frequently attacking those who are subject to derangements of the digestive organs. It very often appears to result from some disease of the testes, particularly orchitis, and from varicocele, or disease of the kidneys. Many persons experience it from gravel, and still more from the passage of a stone from the kidneys to the bladder. Gouty subjects are liable to it, and so are those affected with enlargement of the prostate gland.

In the treatment of neuralgia of the testes, the first thing is to ascertain if there exists any other disease, which may possibly cause it. The digestive organs must be attended to, and the patient must be advised to avoid all causes of mental disquiet, or nervous agitation. Internal medication is seldom of much use, though in some cases relief is obtained by taking *iron*, in various forms, particularly the *pills of the carbonate of iron*, and if the attacks be regularly periodical, *quinine* may be of service, in doses of *five grains*, three or four times a day. Turpentine is occasionally very efficacious, in the following form:

R. The yolk of one egg; oil of turpentine, three drachms; syrup of orange-peel, and syrup of tolu, of each two ounces; laudanum, one drachm.

These are all to be well mixed together, and three table-spoonfuls to be taken daily.

Warm fomentations of hops, or poppy heads will sometimes benefit, but at other times *ice-water* will be still better. A blister may be put upon the scrotum, if all other means fail, and a quarter of a grain of morphia placed on the raw surface. A belladonna plaster will sometimes relieve, or an ointment composed of *one grain of aconite* to one drachm of lard, rubbed over the parts twice a day. The *tincture of*

*aconite* is sometimes still more efficacious when rubbed on the scrotum with a sponge, and will often so benumb the parts that no pain will be felt for hours. Twenty or thirty drops of laudanum are sometimes beneficial, internally, and the following preparation still oftener:

R. Extract of hyoseyamus, five grains; acetate of morphia, half a grain; to be taken twice a day.

Neither bleeding nor mercury appears to be of any use in this disease, but *galvanism*, properly applied, is frequently of great service.

When the disease is too severe to be borne, or seriously affects the patient's health, if all other means fail, *castration* may be performed. It should not be done prematurely, however, nor without due consideration, for sometimes the disease will subside spontaneously, after enduring a long time; and even when the operation has been performed the neuralgia has often remained in the cord as severe as ever. I have known the disease remain for two years, causing the most agonizing suffering nearly the whole time, and then go off and never return.

Several cases of this singular disease have lately come under my care, and in no two of them has the same treatment been beneficial. Each one has had to be studied and prescribed for separately, but in none was an operation necessary.

In all cases of severe pain, the *hypodermic injection* of morphia is the best mode of giving relief. It is applicable in swelled testicle, and all other diseases here described. The operation is simple, and once instructed, the patient can perform it himself.

#### SPERMATOCELE, OR SWELLING OF THE TESTES FROM ENGORGEMENT OF SEMEN.

It is very seldom that this affection is met with, though it sometimes occurs from obstructions in the vas deferens and urethra. It may also arise in falling of the cord, from its becoming twisted or knotted, and from swelling of the prostate gland, causing pressure on the ejaculatory ducts. The symptoms are swelling and heat in the testes, with a distinct sense of fullness in them, and aching pain. There is also usually considerable *priapism* and intensity of sexual desire, but not always.

The treatment consists first in removing all causes of obstruction, if any exist, and then in cold lotions and rest, with purgatives. Sometimes spermatocele is met with as the simple result of *undue continence*, but this is rare. The effects of it, if long continued, may be inflammation of the testicle, with hydrocele, and ultimately complete impotence. If the means above directed do not give relief, leeches may be applied to the perineum, or general bleeding may be practiced from the arm. The diet should also be very spare and simple, and the drink cold water. The mind must not be allowed to be idle, nor the imagination too much excited, and the body must be inured to regular and brisk exercise in the open air. If, notwithstanding all these, the trouble still continues and threatens to be serious, nature indicates but one more mode of relief, which is sure to succeed. In very obstinate cases of spermatocele, the pressure of the semen has been known to *burst* the seminiferous tubes, and I am persuaded from what I have seen that it frequently injures the structure of the testicle. I once saw the testicles of a young man dissected, who died in an epileptic fit brought on by an intense struggle to suppress all sexual desire. They presented the most confirmed case of spermatocele perhaps ever seen, being engorged with semen till much larger than the natural size, and evidently in a state of chronic

inflammation. The tubes were blocked up with *hardened semen*, almost of the consistence of *cheese*, and many of them were broken and run together. In a short time the structure of the organs would have been completely destroyed. The vas deferens and epididymis were also engorged in the same manner, and in many parts were beginning to change their structure.

To mitigate the severe pain, the hypodermic injection of morphia will be found especially serviceable.

#### SCROTOCELE, OR RUPTURE OF THE INTESTINES OR OMENTUM INTO THE SCROTUM.

To understand the nature of this affection, it is necessary to refer back to what has already been stated. During foetal life the testes are contained in the abdomen, from which they descend into the scrotum about the ninth month, by an opening called the abdominal ring. After they have descended this opening usually closes, and no further direct communication then exists between the two cavities. In some cases, however, this closing up is not accomplished before birth, and then there is a liability for the intestines, or their covering, the *omentum*, or both, to descend after the testes into the scrotum, forming the *scrotal hernia*. In most cases this takes place very early, but it may be delayed some months or years, and has taken place as late as the thirtieth year. The symptoms are much the same as those of other ruptures, excepting that the tumor is found in the scrotum. If the bowel is compressed in the ring till the passage in it is obstructed, great suffering results, with inflammation and nearly certain death if relief is not obtained. I have known infants suffer severely from this trouble, and in fact be almost lost from it, without any idea on the part of their parents as to what ailed them. I have also known boys become subject to it suddenly from leaping, or from straining of the bowels, and suffer the most dreadful tortures before they told how they suffered, or before any one found out what was wrong.

If the rupture exists from birth, the testes cannot be felt while it is down, because they are covered by it, but when the rupture occurs in after-life the testes can be felt behind, in the lower part of the scrotum. In some cases the hernia is small, and descends only a small distance, so that no great inconvenience is experienced, and it may exist in this way for years, or even for life, but there is always danger of its becoming worse. Occasionally a quantity of fluid descends from the abdomen, either with a rupture or without, constituting a true hydrocele, but differing from that occurring in after-life by the fluid returning into the abdomen when pressed upward. Children are sometimes born with a large accumulation of fluid in this way, and in others it appears a few days after birth. In these cases the fluid also usually disappears into the abdomen when the patient lies down, and may be kept there when erect by pressing the finger on the abdominal ring, but immediately the finger is taken away it reappears.

The treatment of scrotal hernia is much the same as that of other ruptures, and when properly conducted usually produces a cure, unless there is some malformation of the parts that cannot be corrected. The protruded parts are first pushed back into the abdomen, leaving the testes in their place, and then a properly-constructed truss is worn that presses on the abdominal ring, to prevent their return. If this be worn regularly, and the parts never allowed to fall again, the passage will generally close up, and the cure be thus made complete in a few weeks. The older the patient

is, however, the longer time it will require to effect a cure, and the greater chance there is that it may not take place at all, in which case a truss must be constantly worn.

Great care is required in applying the truss that it does not press on the intestine, or on the testes, for if it does so, great pain and perhaps inflammation may result. It must also be carefully ascertained that the testes are in the scrotum, because if they are not the truss will be improper, as it will prevent their descent.

In congenital hydrocele the fluid may be kept back, more or less completely, in the same way as the intestines, and in young persons it usually absorbs in the course of time. In very bad cases of scrotal hernia, when the intestine is strangulated, and cannot be replaced by external manipulation, an operation is needed, which consists in cutting the neck of the sac, or the ring, a little larger, so as to allow of its return. This, however, must always be performed by an experienced surgeon, and in such hands is perfectly safe and comparatively easy.

Parents cannot be too careful in observing their children, so as to detect any trouble of this kind at the earliest moment. From want of attention this way a scrotal hernia may take place, and produce serious effects, before anything of the kind is suspected, and the proper treatment may thus be too long neglected. A severe fit of crying is very likely to bring this on, in infants who are disposed to it, and hard coughing may do the same in after years. It is very seldom cured, so as to do without a truss, after puberty.

#### VARICOCELE AND CIRCOCELE, OR SWELLING OF THE VEINS OF THE SCROTUM AND SPERMATIC CORD.

*Varicocele* is simply a swelling of the veins on the surface of the scrotum, and is never of a serious nature, unless caused by other diseases. It appears to arise spontaneously in many cases, but more frequently follows severe fatigue, long standing, or debilitating diseases. All that is required is for the patient to wear a suspensory bandage, use the cold astringent lotions directed in hydrocele, and rest. If he be of a full habit of body, it may also be requisite to order a low diet for a time, and the strict use of cold water as a drink.

*Circocele* is a swelling of the primary veins of the spermatic cord, within the scrotum, and may become much more troublesome than varicocele, though it is but seldom serious. The swelling is felt in the scrotum like a firm knotty tumor, on one side of the testicle, and becomes larger when the patient coughs or strains, but subsides when he lies down. It is on this account that circocele has sometimes been mistaken for a rupture of the omentum into the scrotum. It only needs a proper examination, however, to show the truth. When the patient lies down, push the tumor up into the abdomen, and press the finger firmly on the abdominal ring, then let him rise, and if it be a rupture the tumor cannot descend again while the finger is held there, but if it be a circocele it reappears immediately.

It is seldom that anything more is experienced than a sense of weight and uneasiness in the parts, except in severe cases, and then there may be pains in the back and loins, with weakness in the thighs, and eventually a wasting of the testicle.

The treatment must be almost precisely the same as given for other swellings. Cold astringent lotions, the suspensory bandage, purgatives, and rest, by lying upon the back, is all that can be generally advised, though there may be particular