

A probationary essay on hydrocele : submitted, by authority of the President and his Council to the examination of the Royal College of Surgeons of Edinburgh, when candidate for admission into their body, in conformity to their regulations respecting the admission of ordinary fellows / by Archibald William Cockburn.

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*Dr. Bennett with the
author's compliments*
(14)

A
PROBATIONARY ESSAY

ON
HYDROCELE;

SUBMITTED,
BY AUTHORITY OF THE PRESIDENT AND HIS COUNCIL,
TO
THE EXAMINATION
OF THE
Royal College of Surgeons of Edinburgh,
WHEN CANDIDATE
FOR ADMISSION INTO THEIR BODY,
IN CONFORMITY TO THEIR REGULATIONS RESPECTING THE
ADMISSION OF ORDINARY FELLOWS.

BY
ARCHIBALD WILLIAM COCKBURN.

EDINBURGH:
PRINTED AT THE UNIVERSITY PRESS.
MDCCCXXXVIII.

PROBATIONARY ESSAY

OR

HYDROCELE;

AND

OF THE APPROPRIETY OF THE TREATMENT AND THE COURSE

TO

THE EXAMINATION

OF THE

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

BY

WILLIAM COCHRAN,

OF THE COLLEGE OF SURGEONS OF EDINBURGH,

AND OF THE UNIVERSITY OF EDINBURGH.

BY

WILLIAM COCHRAN,

EDINBURGH:

PRINTED AT THE UNIVERSITY PRESS

BY W. & A. LEITCH.

THIS ESSAY

IS DEDICATED,

AS A TOKEN OF RESPECT AND REGARD,

TO

ANDREW RUTHERFURD, ESQ.

SOLICITOR-GENERAL FOR SCOTLAND.

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A PROBATIONARY ESSAY

UPON

HYDROCELE.

THE term HYDROCELE is usually applied to a collection of fluid within the cavity of the tunica vaginalis. A similar collection of fluid takes place in the cord; and this species of Hydrocele is distinguished from the other by naming the situation of the fluid. The one is nominated simply Hydrocele: the other, Hydrocele of the Cord. Hydrocele is a very common disease; and we find it amongst all classes, in all professions, in all countries, and during all ages. The rich and luxurious livers are as subject to it as the poor and destitute: those who have no profession whatsoever are as frequently affected as those who earn their bread by the severest manual labour,—the inhabitants of a warm climate as often as the

dwellers in a cold one : we find it in the babe of yesterday, and in the man of advanced old age. The disease is not accompanied by much danger, but is attended with great inconvenience. The position of the scrotum, when distended by fluid, and the unyielding elasticity of the distended part, both render walking difficult, and the erect posture uneasy. The seat of Hydrocele is in the tunica vaginalis ; and various reasons have been assigned for the formation of the fluid. Surgeons are at variance whether the disease is owing to increased action of the secreting vessels, or to debility of the absorbents. The most frequent cause of Hydrocele is a blow or a bruise, followed by inflammation and enlargement of the testis, and, upon the disappearance of the inflammatory symptoms, by the collection of fluid which has been termed Hydrocele. This cause being known, and the symptoms which result from it, leave little doubt as to the disease being originally one of excited or over-action. By this excitement the healthy balance of the circulation is destroyed, and the parts subsequently remaining in a diseased and altered condition, this balance is not restored, and absorption is deficient in a ratio corresponding to the previous over-action. Over-action of the secreting vessels causes the disease, and debility of the absorbents keeps it up. Hydrocele, as was before stated, is most frequently caused by a blow or a bruise inflicted some time previous to the appearance of the disease. Any

other cause besides a blow, which tends to inflame the testis, may be said to produce Hydrocele. Gonorrhœa may give rise to inflammation of the testis, producing that absurdly named affection hernia humoralis, and a Hydrocele may ensue. Stricture, or any derangement of the urinary canal, may also give rise to Hydrocele. It has been known to follow any sudden exertion, or lifting any heavy weight; and many cases present themselves, in which the patient is unable to assign any reason at all for his complaint.

Hydrocele is gradual in its progress, and the swelling has frequently attained a considerable size before the patient is aware that any collection of fluid has taken place. The fluid collects from the bottom of the scrotum, and extends gradually upwards to near the external inguinal aperture, forming a tumour of a pyriform shape, with a thin covering; this tumour being broadest at its lower part. The tumour is elastic, and communicates a fluctuating sensation to the hand; when grasped posteriorly with one hand, and shaded with the other, it is observed to be transparent, and the rays of day-light, or of a candle, are seen through the scrotum. The testicle changes its position, and is not now felt at the bottom of the scrotum: it is higher up, generally about the lower third, farther back, and larger than usual. The cord can be traced its whole length with the fingers: the patient complains little, if at all, of pain, but is annoyed by a heavy dragging sensa-

tion. By these symptoms Hydrocele is easily recognised in most instances; but still there are many cases where diagnosis is difficult, and errors in which would be attended with lamentable, if not with fatal, results. Hydrocele may exist conjointly with other diseases; or one or more of the symptoms enumerated may be wanting or obscure: the integuments may be thickened, the fluctuation indistinct, the position of the testicle impossible to be ascertained, the transparency invisible, the cord not felt. In such cases, an accurate knowledge of the diseases which may be mistaken for, or exist conjointly with, Hydrocele, and the minute distinguishing features of each, are the only safe guides in forming a correct diagnosis. Hernia may be mistaken for it, and the consequences of this mistake are most serious. "There is swelling of the scrotum, some appearance of obscure fluctuation, considerable pain, and a constipated state of bowels: the poor patient is taken to the ward, and with a trocar and canula a puncture is made into what was supposed to be Hydrocele, when behold, no water flows: he (the surgeon) now gets confused, agitated, and alarmed, and so he may: he has got into a herniary sac; he has dashed into the intestine, and the miserable sufferer is doomed, if not to death, to a fate more horrible — to an incurable and loathsome artificial anus."* A Hernia occupies the same situation,

* Buchanan's History of Glasgow Infirmary, page 19.

conveys the same elastic feel, and, it may be, presents the same pyriform appearance as a Hydrocele; but there is a marked difference between the two diseases, which cool attention and memory will distinguish. The principal features of difference are the following: — Hydrocele is gradual in its formation, and extends from below upwards; when, on the other hand, a Hernia appears suddenly, and comes from above downwards: In Hydrocele the cord can be traced its whole length by the fingers; whereas in Hernia it cannot be felt at all, on account of its position being posterior to the sac. In a case of Hydrocele we cannot cause the swelling to disappear; whereas in a Hernia, manipulation will return the bowel into the cavity of the abdomen: and coughing imparts no impulse to a Hydrocele, as it does to a protrusion of the bowel. Should the Hernia be a strangulated one, the history of the case, and the violent symptoms which attend that accident, will point out its existence.

Cirsocele may be confounded with Hydrocele; but instances are very rare in which the difference is not speedily apparent. By the term Cirsocele is understood a varicose condition of the spermatic veins. This disease so intimately resembles the varix of other parts, such as the leg for instance, as to be readily recognised by the sensation communicated to the fingers, a feeling best described as that of a handful of earthworms. The tumour caused by Cirsocele can be made to disappear by pressing gradually upon the tumour at its lower

part. By this pressure the blood is prevented from entering the veins, and collapse of those vessels is the consequence. Pressure applied at the upper part of the tumour increases its size, by offering an obstruction to the flow of blood. The swelling nearly disappears when the patient is made to lie down, in the same manner as the varicose swelling of the leg diminishes upon raising the heel higher than the knee. Coughing imparts an impulse to Cirsocele, which is not remarked in Hydrocele. The peculiar feeling of the swelling, its increase or decrease in size according to the direction of the pressure, the impulse on coughing, and the diminished swelling in the recumbent posture, will readily distinguish this disease from Hydrocele.

Tumours of different characters frequently attack the testicle, and may exist conjointly with Hydrocele. The latter disease is often attended with a hardened and thickened condition of the integuments, which may render diagnosis difficult. Soft tumours affect the testis more frequently than the scirrhus, and from their sensation of softness are liable to be mistaken for Hydrocele. In a public provincial hospital in Scotland, a very few weeks ago, a testicle was excised by one of the hospital surgeons for a supposed malignant tumour, when the disease was in reality a mere common Hydrocele; and in which case, no tumour, or disease of the testis, with the exception of the simple hardness accompanying the Hydro-

cele, existed. In forming a diagnosis between tumours of the testicle and Hydrocele, the history of the case must be carefully attended to, and the "tactus eruditus" is essential,—“elasticity must not be confounded with fluctuation.”* Hydrocele may exist at the same time with a malignant tumour. Mr. Liston tapped a Hydrocele, and the operation was followed by profuse bleeding. This could not be checked; and a few hours after the water had been drawn off, the hæmorrhage was so excessive, and all attempts at restraining it so unsuccessful, that castration had to be resorted to. Examination of the removed gland shewed a tumour of the testis, with a fungous growth protruding from it, which protruding growth had been wounded by the trocar. Fungus Hæmatodes attacks the testicle so frequently, in comparison with other glands, as to render accuracy of diagnosis most essential.

Hæmatocele presents many, and occasionally all, of the symptoms stated to belong to Hydrocele. Hæmatocele is an effusion of blood either into the cavity of the tunica vaginalis, or into the cellular tissue of the scrotum. The causes of this disease are a blow, a bruise, or the operation for Hydrocele. The effusion of blood resulting from external violence generally takes place into the cellular tissue of the scrotum; and the effusion resulting from the operation of Hydrocele most

* Liston, Vol. iii. p. 172.

frequently occurs in the tunica vaginalis. The reverse of this general observation may, however, be occasionally met with. The trocar may wound some cutaneous vessel, which may infiltrate the cellular tissue without bleeding internally; and the effect of a blow or bruise may be rupture of some of the vessels of the vaginal tunic, which, in many cases of Hydrocele, are dilated, tortuous, and almost varicose. When Hæmatocele of the cellular tissue takes place, we can distinguish it from Hydrocele by the peculiar doughy feeling of the swelling, and by the acuteness of the symptoms which follow this accident. The same symptoms present themselves as when the texture is broken up by the injection of wine, or any stimulating fluid; or as when urine is infiltrated into the cellular tissue of the perineum and adjacent parts. When a patient comes to us with a supposed Hydrocele, and informs us that his complaints have existed only a few days, and that they immediately followed a blow, and much pain, with other acute symptoms are present, and when examination by the fingers detects no effusion into the cellular tissue, we may readily suppose his disease to be effusion of blood into the tunica vaginalis. In such a case there will be no necessity for the insertion of a trocar, and drawing off the fluid, with a view of ascertaining by its appearance which of the diseases we are to treat (for in one kind of Hæmatocele the different colour of the fluid from that of Hydrocele is our only guide to

the presence of the former disease.) Our treatment here will be the application of leeches and poultices, so long as the acute symptoms are present, and, upon their subsidence, applications calculated to promote absorption.

These remarks upon Hæmatocele apply to those forms of the disease produced either in the cellular tissue, or in the tunica vaginalis, by external violence, and to the effusion of blood produced in the cellular tissue by the operation for Hydrocele. But sanguineous effusion into the vaginal tunic follows the operation for Hydrocele, without any wound being inflicted on the vessels by the trocar. In tapping a Hydrocele for the second time, we occasionally find the fluid, instead of being clear and of the same straw colour as it was at the first operation, of a dark and bloody appearance. Instead of a Hydrocele, we find a Hæmatocele; and at the same time we recollect that at the previous tapping the fluid which escaped was unmixed with blood, thereby showing that no vessel had been wounded: sanguineous effusion from, or spontaneous rupture of the vessels, must therefore have taken place to produce this different appearance and character of the fluid. Of these two the latter is the case. The rupture is owing to the sudden removal of pressure from the previously distended cavity. When the fluid is evacuated, the tunica vaginalis collapses, its dilated vessels give way, and blood is poured out. Fresh and speedy effusion of serous fluid, to some extent

or another, follows the first operation for Hydrocele, and the blood poured out from the ruptured vessels mingles with this newly effused fluid, and imparts to it the dark appearance seen at a future operation, and which constitutes the form of Hæmatocele most frequently witnessed. The treatment of it will be mentioned along with that of Hydrocele.

Infiltration of urine into the cellular tissue of the scrotum has been mistaken for Hydrocele. An elderly patient, who laboured under some medical complaint, had also a bad stricture : one night he complained of a good deal of pain, and of an inclination to make water without the power of doing so — suddenly his uneasiness subsided, and he felt not only comfortable, but enjoyed an agreeable warmth in the region of his perineum and scrotum ; shortly afterwards he felt some pain in his scrotum, and it was observed to be swollen — his medical attendant was summoned, who pronounced the swelling to be a Hydrocele, and promised him a speedy cure on the cessation of his medical complaints : early next morning he was dangerously ill, and on a surgeon's being sent for, his Hydrocele turned out to be infiltration of urine : his urethra had given way, and the urine was in the cellular tissue of the perineum and scrotum — free incisions saved his life.

Having now explained what Hydrocele is, the causes of it, the symptoms which attend it, and the different diseases for which it may be mis-

taken, or with which it may be confounded, I proceed to the treatment of Hydrocele itself. The treatment of Hydrocele is either palliative or radical: the palliative consists in simply evacuating the fluid which has collected, without taking any additional measures for preventing its re-accumulation: the radical treatment, on the other hand, aims not only at removing the fluid, which in nearly all cases is re-produced, but in endeavouring to bring about a final cure of the disease. The simple withdrawal of the contents of the tunica vaginalis is not of itself sufficient to obtain a complete cure — the fluid would collect again, and require a repetition of the operation; nor would this re-accumulation occur but once, as in many instances it is known to take place several times. Even the measures resorted to for the radical cure of Hydrocele are not infallible in procuring the result wished for, as even after they have been had recourse to, the fluid may collect again, one, if not more times. The palliative treatment has nothing to recommend it, except the wish of the patient, or his early years. It consists in introducing a trocar and canula into the scrotum, and letting the fluid escape. The scrotum is held by the left hand, being grasped from behind so as to make the integuments tense anteriorly; the trocar, held in the right hand, is pushed with a slightly rotatory motion, and in a perpendicular direction, into the cavity of the tunica vaginalis. The part of the scrotum which

is to be pierced should be midway between the neck and lower third, and care must be taken that no veins cross the part to be punctured — as soon as the trocar is fairly in the cavity, the canula is pushed gently forwards, and the trocar at the same time slowly withdrawn. During the removal of the trocar, the operator must be careful that the canula is pushed and kept fairly in the cavity, as awkward mistakes happen when it is allowed, through carelessness, to slip between the tunica vaginalis and the integument. The fluid, which will be found of a straw colour, varying in shade, is allowed to flow into a vessel held by an assistant — gentle pressure with the hand will facilitate the escape of the last few drops ; no dressing is necessary, and the wound generally heals in a few hours. In young children this proceeding is frequently sufficient to prevent the return of the disease. In persons of advanced age, this treatment requires to be repeated at intervals, according to circumstances ; but except in children, it is a practice never to be depended upon. The radical treatment of Hydrocele has for its object the restoring the lost balance between the exhalant and absorbent vessels ; and this restoration is effected by stimulants introduced into the cavity of the tunica vaginalis. Until lately, erroneous impressions prevailed as to the manner in which the stimulants perform their office. It was generally supposed that the consequence of their introduction was inflammation — causing, by

adhesion between the tunica vaginalis and the tunica albuginea, obliteration of the cavity. Inflammation does follow, to some extent or another, the operation; but dissections of people who have been cured of Hydrocele, neither show adhesion between the tunics, nor an obliterated cavity. In some cases there certainly have been marks of inflammation, and even lymph deposited between the tunics; but this appearance was unusual, and the patients had not owed their cures entirely to this irregularity. The stimulants call into speedy action the secreting vessels; effusion from them is the consequence, and the absorbents are then roused to carry this effusion off; both vessels are called to healthy action, the lost balance between the two is restored, and a mutual corresponding action ensues in consequence. The stimulants used are very various, and as they are all intended to accomplish the same object, little care is necessary in choosing one more than another. Wine, spirits, and alcohol, either plain or diluted, aqua ammoniæ, solutions of zinc, copper, or lead, or of caustics, gases of different kinds, pure water, either iced or at its natural temperature, have all been used, and extolled, and are all trustworthy. In this country, pure port wine has been generally used, and no stimulant has been found preferable to it, either for safety, or for good results. The operation is divided into two stages. The first consists in drawing off the fluid of the Hydrocele, and has been already described; the

second consists in injecting the stimulant employed. For this purpose, an India rubber bag, provided with a stopcock adapted to fit into the canula, is filled with port wine; and after all the serous fluid has escaped, the nozzle of the stopcock is applied to the canula, which has not been removed from the scrotum, and the contents of the bag pressed gradually into the tunica vaginalis: a few ounces will in general suffice, but circumstances must regulate the quantity. The introduction of the wine is at first unattended by any uneasiness, except a slight sensation of cold; but in a short while, pain is complained of, shooting upwards in the direction of the cord. When this pain is complained of, the wine should be withdrawn; if no pain be felt, the wine should also be withdrawn, and a fresh quantity, or some stronger stimulant, introduced. The patient is then put to bed, and his scrotum supported by a cushion. In a few hours he complains of pain, and his scrotum becomes swollen. This is to be expected, and is desirable: it is owing, along with some general inflammation, to a fresh effusion of serous fluid; and if it does not occur, the irritation produced has not been sufficient, and the patient should be desired to walk about the room until he complains of some uneasiness. This healthy inflammation requires no remedies but a poultice or hot cloth, and support by a cushion. Should it run too high, or continue too long, it must of course be treated in the usual manner.

The patient has to be kept in bed for four or five days, by which time the inflammation will have subsided, and the newly effused fluid will have been absorbed. This operation is easily performed, but still requires care and steadiness. Instances are numerous where inattention and stupidity have caused lamentable consequences. The incautious or bungling surgeon, anxious for a display of his operating talents, sits down with the smiling confidence imparted by total ignorance of his danger. The trocar is inserted with easy elegance of motion, with the graceful "*tour de maitre*," and the fluid flows through the canula to his perfect satisfaction. The wine is injected, and the patient asked if he feels any pain : his speedy answer is in the affirmative, and the stopcock is turned to withdraw the injected fluid. None escapes — not a drop is seen ; — trocars, bistouries, directors, probes, and pins, are all in requisition to clear a passage for the exit of the fluid ; but the labour is in vain — the wine is in the cellular tissue of the scrotum — the patient's life in danger. Then comes the story of the dust-obstructed canula — of the useless stopcock : the tools are to blame, not the operator ; and to the assistant is transferred the entire responsibility of the mistake. It was to avoid this serious accident that directions were given, in the account of the operation, to attend carefully to the insertion and position of the canula during the withdrawal of the trocar ; and it is only by attending to this apparently trivial

step of the operation, that the safety of the patient is secure, and the ability of the operator unquestioned.*

There are two auxiliaries in the treatment of Hydrocele, which, although seldom observed, and still more seldom had recourse to, are not the less entitled to the surgeon's notice, and to his warm commendation: these are the employment of fumigations, and the use of the bougie. Hydrocele is almost invariably attended by enlargement and hardness of the testicle, and very frequently co-exists with stricture, or some other irritation of the urinary canal: the fumigation removes the one, and the bougie cures the other. In aiming at the radical cure of Hydrocele, we add to our prospect of success if, in addition to restoring the lost balance between the exhalants and absorbents, we succeed in bringing back the gland to its natural condition, both in regard to size and hardness; and in permanently restoring the gland to its natural condition, no means are more effectual than the fumigations with camphor and mercury. They are employed alternately, with an interval of two or three days between each fumigation. A square

* The operation may be rendered dangerous by any unusual position of the testis—especially where its situation is at the anterior part of the scrotum. This unusual position of the gland has been remarked by some surgeons, although it occurs rarely. In the cases where it has been met with, the testis seemed adherent to the anterior part of the tunica vaginalis—a circumstance not easily accounted for. It will be difficult to ascertain this position of the testicle in any case where there is much tension and thickening of the integuments. The knowledge of this rare occurrence, and of the dangers certain to ensue if it be unnoticed, will put the surgeon on his guard in the examination of the case, and during the insertion of the trocar.

piece of iron, hollow in the centre, is brought to a white heat, and into this hollow part the camphor is put ; its fumes are made to pass through a tin tube, placed over the iron, to the upper end of which an oil-skin bag is attached : the scrotum is inserted into this bag, and allowed to remain there exposed to the fumes of the camphor until they are all dissipated. The fumigation with mercury is conducted in the same manner. The quantity of camphor used for one fumigation should be two drachms, while one drachm of mercury will be sufficient. Four or five fumigations will in general restore the gland to its natural condition ; but the use of them must in some cases be persevered in for a longer period. Should any circumstances exist to contra-indicate the use of mercury, the camphor may be employed alone. The intimate connection between the urethra and the testicle readily accounts for the irritation of the one affecting the condition of the other. One of the most remarkable features of stricture is the total ignorance under which the patient sometimes labours with regard to the presence of the disease, until the bougie reveals its actual existence. So, in many cases of Hydrocele, we find irritation of the gland kept up by some unsuspected derangement of the urinary organs, and most frequently by stricture ; and in all cases of Hydrocele, the urethra should be examined with a bougie ; and the insertion of one every third or fourth day, allowing it to remain a few minutes, will prove of

essential benefit, not only in curing the disease for the present, but also in preventing its return; even though no stricture should exist, it will allay all irritation, and tend to make the cure permanently effectual. But fumigations and bougies are not to be used in all cases indiscriminately: we have one guide which points out when they are to be employed, and when they are not; viz. the presence or the absence of pain in the testicle. It is a simple guide, and one which may be depended on. If no pain is complained of, they are valuable auxiliaries in our treatment; but if pain is present, they will do much harm.

These remarks upon the treatment of, and the operation for, Hydrocele, apply to the generality of cases met with. Our practice must in this, as well as in many other operations, be regulated by existing circumstances. Patients frequently apply for assistance who have come from a distance, or who have occupations which prevent their putting themselves under treatment for the necessary time. In such cases, we must be contented with giving them relief by simply evacuating the fluid, however favourable the case may appear for the radical treatment by injection. Some cases occur, in which, after the puncture has been made, a very small quantity of fluid escapes; the swelling remains hardly diminished at all in size, and fluctuation is still perceptible. Where, the surgeon asks, is the rest of the fluid? why does it not flow? Because the cavity is divided by

septa; because the fluid is contained in different cysts. In such a case, the lancet is to be used, and punctures are to be made in different parts, which will evacuate most of the fluid. Injections need not be attempted.

Cases occur in which the injection of stimulants is inadmissible. In a case of Hydrocele co-existing with hernia, the inflammation produced by the means taken to insure a cure would be apt to extend to, and attack the herniary sac, the consequences of which would be of vital danger.

Where, on the escape of the fluid from the scrotum, it presents the dark appearance described as belonging to Hæmatocele, and as being the distinguishing mark between this disease and Hydrocele, injection is not to be had recourse to. In such a case, the fluid is to be drawn off, and allowed to re-accumulate. When it has done so, and has been a second time evacuated, it will in all probability be found of a lighter appearance. This treatment of simply tapping from time to time, until the fluid is of the same straw colour as a genuine Hydrocele, and then treating it as such, will be found most advisable; and though it should be tedious, it will be found safe.

Many operations, as cruel as unnecessary, have been proposed, and carried into effect, for the cure of Hydrocele. In older days, castration was not unusual; and in more modern days, operations nearly as bad have been performed: incision, excision, setons, tents, and caustics, have all been

had recourse to; and many names of eminence have, by their writings and their practice, shown their approbation of one or other of those proposed means of cure. At the present day, they are nearly all abandoned, in this country at least, although a surgeon who has failed of success by the employment of ordinary mild measures, is occasionally seen treating Hydrocele by the seton; and although an author still writes in favour of the supposed possibility of excising the tunica vaginalis for the cure of Hæmatocele, fortunately the practice followed by the one, and the treatment recommended by the other, are likely to meet with few admirers, and with still fewer followers.

Within the last few years the attention of surgeons has been directed to a proposal of treating Hydrocele by acupuncture. Numerous instances proved that infiltration of serous fluid into cellular tissue was not only unaccompanied by any bad results, but that, on the contrary, the effused fluid was absorbed with great rapidity. The observation of this fact gave some surgeons the hint, that if the situation of the fluid in a Hydrocele was changed from the confined bag of the tunica vaginalis to the loose cellular tissue of the scrotum, the consequences of the infiltration would be attended by the same happy result, viz. speedy absorption; and practice soon proved, not merely the perfect possibility of accomplishing this object, but also the great simplicity with

which its accomplishment was effected. The operation is simple, and easy of performance, but is not to be depended upon for a permanent cure of the disease: it belongs to the palliative, not the radical course of treatment. It consists in introducing a needle through the scrotum, and making a puncture in the tunica vaginalis. The needle which will be found best adapted for the purpose, is the one commonly used for acupuncture in a case of rheumatism. It is introduced at the lower part of the scrotum, and carried forwards. When it is so far in as to have pierced the tunica vaginalis, it is turned with a gentle rotatory motion for a few seconds, and then withdrawn. On its withdrawal, a drop or two of serous fluid will escape at the external puncture. The rotatory motion is given to the needle to ensure the punctured aperture of the tunica vaginalis remaining open for the oozing out of the fluid. Some surgeons make three or four punctures in different parts of the scrotum; but one will be found sufficient, if it be properly made. The patient is kept in bed, and in a few hours his scrotum becomes swollen, red, and a little painful. The pain and redness soon go off; and in a few days the swelling has subsided, and the scrotum shrunk in size. The fluid collects again in a very few weeks. That form of Hæmatocele, resulting from the removal of pressure from the distended vessels, is as liable to follow this operation as that of tapping; and when had recourse to a second time, it is impossible to as-

certain whether the fluid is that of Hæmatocele or Hydrocele. Were it the former, it might perhaps cause some mischief in the cellular tissue.

It is not to be depended on even as a palliative mode of treatment in preference to puncturing with a trocar. An aged man laboured under double Hydrocele, conjoined with double Hernia. The Hydrocele of one side was a good deal larger than that of the other. As the Hernia rendered injection unsafe, puncturing was had recourse to. The largest Hydrocele was punctured with a trocar, and the other by a needle. Both succeeded so far, and the man went home: in about six weeks he returned with the fluid re-accumulated on both sides; but their relative size was different, the one punctured with the needle being a good deal larger than the other one. The needle may be used in young people, and in timid patients who dread the trocar; but except in them, no advantage can be gained by its employment.

Hydrocele of the Cord is generally met with in children, and is mostly always encysted. The cyst containing the serous fluid may either be an unobliterated part of the congenital spermatic process, or may be formed by condensation of the loose cellular membrane between the cord and the cremaster muscle. The tumour is generally small, situated midway between the testicle and the groin, of an oblong appearance, tense, and circumscribed. It is slow and gradual in its for-

mation, and unattended by pain, but proves inconvenient from its position or its size. Hernia is liable to be mistaken for it, through the similarity of position or shape; but with the exception of these, the symptoms of the two diseases are widely different. They differ in Hydrocele of the Cord being circumscribed, in the cord being felt above and below its tumour, in the absence of pain or acute symptoms, in the impossibility of reduction, in the want of impulse on coughing, in the evacuations per anum being free and natural, and in the gradual increase of its growth. Hydrocele of the Cord is but seldom met with, and our treatment of it is simple: it consists in evacuating, by means of a trocar and canula, the fluid contained in the cyst. There is in general no necessity for the injection of stimulants; but some cases occur in adults, where the operation of tapping has not prevented a return of the fluid, in which cases, injection of wine, as in a common Hydrocele of the tunica vaginalis, will be advisable and efficacious.





