

Radical cure of the hydrocele, by means of an injection.

Contributors

Earle, James, 1755-1817.
Royal College of Surgeons of England

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R A D I C A L C U R E

O F T H E

H Y D R O C E L E ,

BY MEANS OF AN INJECTION.

by
Nash

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✂ This TRACT is inserted in Mr. EARLE's *Edition of*
Mr. POTT's *Works*,

1790.

H Y D R O C E L E.

THE inconveniences attending the usual methods of treating the hydrocele are well known to those who are engaged in the practice of surgery. The disease itself is attended with little pain and no danger; many of the remedies now in use for it are productive of considerable pain, and are not totally destitute of hazard.

The proper object of all operations for the radical cure of the hydrocele, is, to produce such an adhesion of the distended vaginal coat of the testis with the gland, or such a consolidation of the contiguous parts, as shall annihilate the cavity in which the water constituting this disease is contained. We know that this effect may be produced by a certain degree of inflammation, and are unacquainted with any other process, either natural or artificial, by which it can be brought about. Before the method by the seton was recommended by our author, the

necessary inflammation was excited by dividing the scrotum and the vaginal coat, or by destroying a part of them by the knife or caustic.

Mr. POTT took no small pains to mitigate the severity of this operation, and to raise inflammation in a more simple manner, by the introduction of a foreign body without destruction of parts. With this view he preferred the seton. This he soon discovered to be productive of more inflammation than was necessary; and, after a series of trials, he suggested many very ingenious directions for performing and conducting this operation in such a manner as to produce the least possible irritation. We must allow that he carried the process he recommends to a great degree of perfection; and if the operation be performed without deviating from the directions he has laid down, I am convinced it will be found preferable to any of the methods which have been usually practised in this country; yet it must be observed, that even this remedy goes beyond the proper intention, as the seton not only excites adhesive inflammation, but is necessarily attended with some degree of suppuration, at

least in the track of it, before it can be removed; add to this, an objection of much more practical consequence, that even in its present state the inflammation produced by the seton sometimes runs much higher than is intended, and demands the attentive administration of antiphlogistic remedies.

The late Mr. ELSE's method, by the application of a small caustic, has the same inconveniences, and is liable to a much greater objection; as it is not only attended with more inflammation than is necessary, but also unnecessarily causes a painful, offensive sore, producing a slough of part, if not the whole, of the tunica vaginalis testis.

The human frame is liable to few diseases which have more frequently exercised the ingenuity of practitioners, to find an easy and effectual cure for them than this. Among the various methods which have been proposed, an external discutient has of late been strongly recommended. It would certainly be a most desirable plan, to get rid of the disease without any operation; but we know too well how confined our powers are in dispersing collections of fluids within sacculi mucosi, and some kinds of encysted tumors,

whose integuments are comparatively thin, and therefore must conceive that much greater power would be requisite to act through the scrotum and thickened tunica vaginalis, so as to produce absorption of the fluid and cohesion of the tunics.

Hydroceles have been accidentally dispersed by various means, particularly by a blow, by a fever, and by sickness at sea. I do not entertain the smallest doubt, that the above remedy, which has been proposed by an ingenious and able practitioner, has produced the same effect; but I cannot help doubting its capability of frequently producing it, having myself tried it, and known it tried by others, several times without success.

The proportional merit, however, of different remedies, can never be exactly determined: few men have opportunities of seeing a variety of remedies repeatedly tried, and perhaps still fewer possess a sufficient share of candor, to weigh the merits and defects of each in an equal balance; consequently medical practice is never settled in any case till it be nearly perfect, or at least till some one proposed remedy bears no comparison, in point of excellence, with the rest. Thus, in

regard to the treatment of the hydrocele, though the methods of Mr. POTT and Mr. ELSE are certainly great improvements; yet, as some objections may be made to them, there are at this time surgeons who have returned to the old painful practice of incision, and cutting away a part of the scrotum and vaginal coat.

In this unsettled state of practice it will not, I hope, be thought improper to subjoin some observations of my own, on this subject, to those of Mr. POTT; which, however, I should not take the liberty of intruding into this work, had not Mr. POTT himself so far approved of the method which I am going to recommend, as to declare to me, not long before his death, his intention of giving it a fair trial.

It is well known that our forefathers made use of injections for the cure of hydroceles, and this method is now not out of practice on the continent; but it is wonderful that a remedy which may be made to answer the intention of exciting inflammation to any degree, and is attended with no inconvenience, present or future, should have fallen almost into total disuse in this country: some
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of the later English writers on the hydrocele do not mention it; and if it be noticed by others, it is only to shew their disapprobation of it.

Injections introduced within the tunica vaginalis testis, into the urethra, or into any cavity of the body, natural or formed by disease, are certainly capable of doing mischief; but the mischief must arise from the nature of the injection; if it be violent and irritating, it may produce too great inflammation. It is very probable that the caustic, and highly stimulating ingredients, which have been sometimes most injudiciously injected, and confined an unreasonable and an unnecessary length of time, have done harm, and have been the cause of bringing injections in general, and for the cure of the hydrocele in particular, into discredit; but it is extremely absurd to infer, from such instances, that all kinds of injection must be pernicious: in the use of them we are not limited to any degree of stimulus. Injections may be found so bland, as not to offend the most sensible membrane or surface in the human body; on the other hand, they may be prepared so corrosive as to inflame, and even to dissolve
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the most indolent parts; and they be made to produce any intermediate effect. There is no kind of stimulus which admits of such various modifications.

Another great advantage of injections is, that they apply themselves equally and universally over the whole cavity into which they are thrown, which no solid body can do.

As I had frequently succeeded in procuring an adhesion and consolidation of parts in sinuses and other large cavities, by injections of various kinds, without causing great inflammation, and had by those means avoided the necessity of extensive divisions of the skin and integuments, which should be avoided as much as possible in every part, I conceived that the cure of hydroceles might be effected by the same gentle means, without deranging, more than is necessary, the economy of those tender and sensible organs which are the seat of the disease, and I determined to make the experiment.

The injection I employed for this purpose is wine, which I made choice of for several reasons; it had been used with success in France; I had found it answer well in procuring

curing adhesions in other parts : the strength of wine is never so great as to render it an unsafe remedy, and it may be readily lowered, according to the different sensibility of the parts. Thus a vinous injection appeared capable of producing all the good effects which could be desired, with scarce a possibility of doing harm. The success which has attended it, has more than answered my expectation ; and, from every trial I have made, I have no reason to wish for a different one : the pain which is produced by it is incomparably less than by any other operation : it does nothing more than is intended, and the curative effect, as far as my experiments have gone, is equally certain.

The following cases contain a circumstantial account of all the observations I have yet made upon it, which perhaps I have somewhat hastily drawn up, that I might take the opportunity of inserting them in this edition, without any longer delaying its publication.

C A S E I.

A man, about fifty years of age, was taken into St. Bartholomew's hospital with a large
hydrocele

hydrocele of many years standing: June 21, 1787, in the presence of Mr. PORT, I passed into it a trochar, and let out a very large quantity of fluid of the usual colour and consistence; I found the tunica vaginalis remarkably thickened and unpliant; to the feel not unlike tripe or buff leather: the testicle was much larger than the natural size. On considering every circumstance, it appeared to be a very unfavourable case for any operation except the palliative: however, as I was desirous to try the effect of injection, and there was no probability of doing mischief, I filled it with port wine diluted with water in which red rose leaves had been boiled. The man felt not the smallest pain: after retaining it a few minutes, I suffered it to be discharged: the next day a small degree of inflammation had taken place; the third day from the operation it was increased, and the whole scrotum considerably swollen: the patient continued absolutely free from pain and fever: by way of precaution, a poultice was applied, and he took an opening draught. On the sixth day the inflammation continued, the scrotum much swollen, the patient without any other complaint,

complaint. In a few days the inflammation lessened, but the scrotum was almost as large as before the operation, and, to all appearance, it now contained a fluid. It seemed extraordinary that water should be again secreted and collected in so very short a time; yet, as it was not attended with any pain or inflammation, I concluded that it was possible; and, being the first attempt which I had made, I was rather inclined to think, with every one who had seen it, that the injection had failed, and that there was a fresh accumulation of water. Accordingly it was agreed that the operation by the seton should be performed. Saturday, July 8th, he was brought into the theatre for that purpose; when, on examination, it appearing to Mr. POTT and all who were present that the size of the tumor was lessened, he was sent back to his ward. From that time the tumor continued gradually to diminish till the testicle was plainly perceptible, surrounded by the thickened tunica vaginalis: July 18, I examined with attention, and found it not only perfectly free from any fresh accumulation of fluid, but the testicle less in size than when I first let out the

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the water, and the patient being well in every respect, I discharged him.

On considering all these circumstances, the reflections which suggested themselves were, that if the method succeeded so well in this case, in which, from the size of the tumor, the duration of it, and the thickness of the vaginal coat, I had despaired of effecting a cure, there was every thing to hope from it in more favorable and more recent ones, and that it appeared infinitely preferable, in every respect, to any other operation I had ever seen attempted for the cure of hydroceles: no pain, no violent irritation, nor fever succeeded; a gentle inflammation only took place, attended with a moderate tumefaction, just sufficient to produce an adhesion of the tunica vaginalis to the testis, without the tedious process of suppuration, which, in some degree, is always the consequence of any other operation.

C A S E II.

THE next case which occurred to me, was in June 1777, in the person of a gentleman, who shewed me a hydrocele, which
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he said had gradually been increasing during several months; the integuments were remarkably thin, and in every respect it was the reverse of the case just described: he wished to have the radical cure performed, and it appeared a very good subject for an operation. As he was a man of excellent understanding, and had applied his thoughts to surgical cases, and more particularly to this which most materially concerned himself, I described to him all the different operations which have been recommended for the cure of it, and pointed out what appeared to me their advantages and disadvantages, that he might form some judgment, and choose which he would submit to. He decided in favour of injection. After having evacuated about five ounces of yellowish fluid, the testis felt full and larger than natural, but soft; I then threw in some injection, more diluted than in the preceding case; he complained of some pain, on which account, after the injection had continued one minute, I suffered it to be discharged, and the pain soon ceased; when, lest I should not have done quite enough, I attempted to throw in some more, but air had got into the syringe, and I was rather foiled; however some went in, on
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which he again complained of pain, and I again discharged it, and withdrew the cannula; he continued to feel a small degree of uneasiness, and went to bed; I saw him again in the evening, when he told me the pain had gradually subsided, and that he was then perfectly easy: I ordered a fomentation and poultice to the part, and an opening draught. The next morning, a very gentle inflammation had taken place; the parts were moderately tumefied, and he felt very little uneasiness. The third day, being much the same, he chose to get up; the fourth day, encouraged by ease and favourable accompaniments, he very imprudently exerted himself in moving a heavy table, by which he brought on his pain again, and the scrotum looked larger and more inflamed. This fresh access was fortunately soon calmed, and the parts again gradually subsided; and, though he continued to sit up, in nine days from the operation, the gland bore to be examined as well as a sound testicle. In a few days after, the inflammation was entirely gone; and, what appeared a circumstance very much in favour of this operation, as it is contrary to what happens after, I

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believe

believe I may say every other operation for this complaint, the testicle was become perceptibly, to the patient as well as to myself, smaller than when I let out the water. Every one must allow that after operations by which a solid foreign body is suffered to remain within the tunica vaginalis, the testis for a long time remains enlarged, owing to the great and unnecessary quantity of inflammation excited, and to the duration of it. A fluid may undoubtedly be made so powerful, and retained so long, as to produce the same ill effects; I must therefore observe, that the success of the method which I am describing, will probably be found to depend on two circumstances; the mildness of the injection, and the very short space of time which I have proved to be sufficient for its retention.

Finding himself perfectly well, he went to his country-house, where he caught cold, by remaining in his garden after rain, and had a very severe attack of fever; but notwithstanding, the testis continued perfectly quiet and easy. May 20th, in the following year, I had an opportunity of seeing him again; when, on a careful examination of
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the parts, I was convinced that the testis was become of its natural size, that an adhesion had universally taken place between the tunics, and in short, that the cure was undoubtedly complete. I have had many opportunities of seeing him since, and he remains perfectly well.

C A S E III.

NOVEMBER 23, 1777, a young man shewed me a swelling of the scrotum, of a few months duration, which I perceived to be a hydrocele. After proper evacuations, I determined to attempt the cure by injection; I drew off a large tea-cup of straw-coloured water, and found the testis rather enlarged, as usual, but free from disease; I immediately filled the cavity with injection, which was kept in a couple of minutes; the patient complaining of some pain shooting up to his loins; it was discharged, and he went to bed. The next day I found him free from fever; he said he had felt some pain similar to what he had felt during the operation, but the inflammation was not

more than to be desired; the scrotum gently distended with a scarlet blush. I ordered a poultice and bag-truss, and advised him, what I always recommend, not to suffer the scrotum to fall down between the thighs, but to support it by a small pillow, or by keeping the knees close. The 26th, the inflammation was very moderate; he had no pain, nor had felt any since the second day: it continued gently to increase, and seemed about its height on the 28th, the fifth from the operation: and two days after it appeared to be gradually decreasing; the patient during the whole time being entirely free from pain. December 4, the inflammation was diminished, the tumor about half its original size. On the 10th, the seventeenth from the operation, all inflammation had left it, the adhesion of the membranes appeared complete, and the testis in a perfectly quiet state.

C A S E IV.

ON the same day that I injected the last mentioned hydrocele, another case, exactly
 similar

similar in every respect, was put under my care; the age of the man nearly equal; constitution, duration and size of his complaint, as nearly resembling the other as possible. To give a fair trial to both methods, I passed a seton in this; the complaint proceeded very well with moderate inflammation. The seton was gradually removed, thread by thread, as they became loose; in about ten days, the scrotum began to lessen and collapse; a small abscess however was formed, the matter of which emptied itself by the lower orifice. On the whole, this case gave as little trouble, and ended as happily as the mode of treating it, by introducing and retaining a foreign body, generally does. But I must most truly confess that it did not seem comparable to the injection, by which means all access to air is denied: no discharge is necessary; the inflammation is infinitely more moderate, the duration of it less, and no abscesses are formed.

C A S E V.

MARCH 12, 1788, in company with my esteemed friend, Mr. PITTS, I let out the water from the hydrocele of an elderly man, which had been tapped about five years before. It appeared large before the operation; but the quantity of water which was evacuated, and which measured considerably more than a pint, proved the cavity to have been more capacious than we had apprehended. The testicle was in a sound state, very little larger than natural: I threw in some injection; the patient felt no pain, and scarcely any extraordinary sensation, which induced me to use the remainder of the injection of a stronger quality, and to keep it in longer than usual. I had not enough to fill the cavity; however, by handling and altering the position of the parts, I caused it to be diffused over the whole cavity; and, as I have observed, I consider it the chief excellence of this method, that we are enabled to irritate and affect every part equally, but moderately. From the capacity of the cavity, and the consequent improbability of the parts lying in contact

contact with each other, after having been so largely distended for such a length of time, I formed a very unfavourable prognostic of the event. I saw him next morning; he said he had perceived a slight pain in the afternoon, for about two hours, since which he had been easy: a small degree of inflammation and tumefaction had taken possession of the part. The 14th (the second day after the operation) they were moderately increased; I began, from the appearances, to have hopes of success, as the inflammation was just as I wished: the 15th, appearances were similar to those of the day before: the 17th, the inflammation continued moderate and unattended with pain: the 20th (the eighth from the operation), the inflammation and tumefaction were less, and continued gradually subsiding: he was soon after discharged well. I have had many opportunities of seeing him since, and he remains perfectly so.

As I have mentioned, in the last case, that I threw up the injection stronger than usual, I will take this opportunity to observe, that I have commonly used about two thirds of wine to one third of water, if the parts ap-

peared insensible, and no pain at all was produced by the first quantity thrown in, I have withdrawn the syringe, and added to the proportion of wine; on the contrary, if the complaint was recent, and the parts irritable, I have increased the proportion of water; so that I have hitherto been principally guided by the degree of sensation which the patient has expressed. I have lately used pure water, and found it answer as well as when astringents were added.

The instrument which I commonly use, is a pipe with a stop cock, which is made to fit into the cannula of a trochar, and to receive the beak of a syringe of a moderate size, which may be applied and removed at pleasure. I have sometimes used the vegetable bottle; but it has this inconvenience, that if it be not perfectly filled with the injection, it will, by its elastic power, draw in a quantity of air, which may prove very embarrassing in the operation.

C A S E VI.

THE next case which came under my care, was a hydrocele in the person of a middle
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aged man. Averse to doing more than might be necessary, though I had succeeded so well by injection, an external wash being certainly more easily applicable, I determined to give trial to that which had been recently recommended. May 5, the tumor was wrapped in cloths, wet with a solution of sal amoniac in acet. & spt. vin.; after using it two days he complained so much of inflammation and irritation, attended with darting pains in the scrotum, that I was obliged to omit it for a day or two; after which time he used it lowered with a little water. May 27, after having continued this application nineteen days, I could find no sensible difference in the size or appearance of the tumor, except that the skin was corrugated and inflamed from the irritation of the application. May 30, no sensible alteration; he continued to use it, with now and then a small interval, till the 22d of June, when, tired at finding no benefit, he would not submit to any other operation as was proposed to him, but chose to leave the hospital.

C A S E VII.

AN intelligent gentleman, who had been in the medical line in India, shewed me a hydrocele on each side: we talked over all the usual modes of curing the complaint; but he did not seem satisfied with either of them. I mentioned the solution of the sal amon. and recommended him to give it a fair trial. He accordingly applied it, as it is directed; but, as it happened in the instance just mentioned, it produced so much inflammation, that he was obliged to desist: he afterwards used it for near three months, at the end of which period, May 31, 1789, he again shewed me the tumors; but there was no perceptible diminution in their size.

C A S E VIII.

SINCE these papers were written a gentleman was introduced to me by Dr. GRIEVE, with a hydrocele, which had been treated with the same discutient, and which he had found so painful that his surgeon was obliged to lower it: it was continued as strong as he
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could bear it during five weeks, when the water not being lessened, was let out, after which the application was again made use of during the evacuated state of the complaint; but it had not prevented the reaccumulation of the water.

I do not mean, by these relations, to give a decided opinion on this method; I simply and truly state the facts: in other cases it might be more successful.

C A S E IX.

NOVEMBER 5, 1788, I took a young man under my care, who had apparently a hydrocele; but it was one of those cases of which, on account of the tightness, with which the coats enveloped the water; and from the thickness of the scrotum, we could not positively at once determine the nature; however, as I concluded it to be a hydrocele, and, from its recent appearance, a favourable case, I immediately began to treat it with an external application of a solution of sal amon. but, after seventeen days, finding no kind of advantage, and the man being impatient and
anxious

anxious to return to his friends, I determined to use the injection. November 22, I let out about five ounces of clear fluid, found the testis in a good state, though enlarged, which, as I observed, is frequently, I might say generally, the case. I then filled the cavity with injection, in the presence of a number of gentlemen, and kept it in a few minutes; he complained of so little pain, that I was apprehensive, and I believe all who were present concluded, that what I had done was to no purpose; that is, that there would not be sufficient irritation to produce the necessary inflammation. He continued without pain the whole of that day and the next; the third day he was perfectly easy; but a gentle inflammation had taken possession of the whole scrotum, equal in every part: the 5th day the inflammation continued as before, and the swelling was so free from pain, that it had strongly the appearance of a fresh collection of fluid; but, as this deception had several times occurred to me before, I did not the less expect a cure. On the seventh day from the operation the appearances were very similar, the man void of pain, the scrotum gently tumefied, from which time the scro-

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tum began to corrugate, and the tumor gradually to decrease, till in less than three weeks it became of the size of the testicle, when the water was let out. I kept him in the house till the 21st of December, to observe if any fresh accumulation took place, when, being perfectly well, he was discharged.

C A S E X.

MR. PITTS tapped a large hydrocele of a middle aged man; the testicle was found larger and harder than usual: he permitted me to throw in an injection, which, on account of the size and thickness of the parts, I had made rather stronger than usual, there was not quite enough to fill it; but I pressed it so as to make it find its way over the whole cavity, and suffered it to remain in six minutes. I did not see him again till the fifth day; the scrotum was considerably inflamed, and tender to the touch. I directed him to remain in bed, and to apply a poultice made with extr. saturn. the next day the inflammation was lessened, and he was free from pain, and the tumor began to subside. There

is so great similitude in the progress of these cases, that I have only to say the inflammation continued gradually to lessen, and in less than a month the testis was of its natural size, and the man was discharged. He has since been in the hospital for another complaint, and we have had opportunities of examining the part; the adhesion appears to have universally taken place, and consequently there is not the least vestige of the hydrocele.

C A S E XI.

FEBRUARY 7, 1789, I tapped a hydrocele in the person of a young man, let out a moderate size tea-cup of fluid, threw in the same quantity of injection, and kept it in three minutes; the patient complained of some pain shooting toward his back: the 9th, he had no pain; the inflammation very moderate; the 10th, no great alteration, but I observed, what indeed I had often before remarked, that the scrotum appeared distended, as if again filling with water. The inflammation continued to proceed moderately, and gradually

dually to subside. The patient was so free from pain and every complaint, that he chose to leave the house in less than three weeks; and, indeed, before the swelling was quite gone, to follow his occupation of a tide-waiter. I have since had many opportunities of seeing him and examining the part; the adhesion appears perfect, and the disease completely cured.

C A S E XII.

MARCH 6th, 1789, I went with Mr. R. Croft, to see a young man, who had a hydrocele on each side. Mr. C. had once performed the palliative cure on the left, which was now filled again, and was much larger than the other. I let out a large quantity of fluid, and found the testis in a good state, though larger than natural. I introduced sufficient injection to distend the bag, and kept it in four minutes; the man complained of some pain when it was first thrown in, but was perfectly easy before the four minutes were expired. I then proceeded to evacuate the other; but, as the
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quantity of water was small, and I could not safely introduce the instrument which I generally use for the purpose of injecting, I contented myself with emptying it by means of a small trochar, and found the testis large in proportion to the size of the tumor; I withdrew the cannula, and left it to take the chance of what might follow from partaking of the neighbouring inflammation which I expected to take place. Mr. C. saw him the next day, and gave me an account that he had risen, and was walking about the room, and that the parts were beginning to swell. As this was greater liberty than I had yet given, I begged he might immediately go to bed and have a poultice applied. I visited him next day, and found more inflammation than I had ever seen after this operation: and, what appeared extraordinary and fortunate, the side which had not been injected was almost as much inflamed as the other; but he complained not of the smallest pain in either. The 14th, I saw him again; he continued free from pain, and the inflammation was very much abated. The side which had not been injected appeared less likely to diminish than the other; and
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the apparent feel of fluid which I observed often follows, was more than usually perceptible. On the 20th, (a fortnight from the operation) the side on which the injection had been used, was perfectly well; in the other, the water was evidently collecting very fast; which demonstrates how little effect external inflammation may have when it is to act through the scrotum and tunica vaginalis, and points out the greater certainty which follows the application of the stimulus to the inside of the cavity; in this case, notwithstanding the water was evacuated, and a much more considerable inflammation was raised on the scrotum than could have been caused by almost any external application, no internal effect was produced. I took leave of him, recommending him to do nothing farther till it was sufficiently full to be treated in the same manner.

C A S E XIII.

MR. CROFT continued to see him from time to time, and gave me an account that the side which had been injected, remained perfectly well, but that the other was large,

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and he wished me to perform the same operation on it. May the 2d, I examined it, and found the left side perfectly well, and free from water; the right distended, but not very large. I plainly, through the water, discovered that the testis was larger than it ought to be; and it was not without great care that I was able to pass in the trocar without injuring it: I let out about five ounces of fluid, and treated it like the other. I saw him two days after; he said he had passed a restless night, and the part was more inflamed and tumefied than usual; on inquiry, I found he had eaten a dinner of roast beef and drank porter, which readily accounted for it. By taking a little opening medicine and using a lower regimen, in two days the tumor was less, the inflammation more moderate. In about the usual time he got well; and, I have been informed, he continues perfectly free from any complaint on either side.

C A S E XIV.

MAY 16, 1789, I let out about five ounces of a straw-coloured fluid from the hydrocele
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of a young man, and threw in an injection; he complained of pain during the first three minutes, when he grew easy; in five minutes the injection was discharged. This proceeded, in every respect, like those I have related, with a very moderate inflammation, which decreased gradually.

He has since applied to me, with a venereal swelling in both his testes; which, by means of mercurial frictions in the internal parts of his thighs, are both decreasing, but there is not the smallest sign of his ever having had water in either.

C A S E XV.

IN the autumn of the same year, a gentleman came from Barbadoes on purpose to be cured of a large hydrocele. With his consent, I intended to use the method by injection; but, at the instant when I had passed in the trocar, with a violent involuntary motion of his body, he forced it out with the cannula, by which accident a small quantity of water only followed through the external orifice, but a considerable portion escaped

from the tunica vaginalis, and insinuated itself into the cellular membrane of the scrotum, making a large swelling, which put a total stop to the intended operation. As his time was limited, and he was anxious to return, he pressed me to perform immediately the operation by incision, or by any other method; however I persuaded him to wait a fortnight, by which time the extravasated fluid was nearly absorbed; but, as the quantity which remained in the tunica vaginalis was small, and consequently the cavity was become less capacious; and as he was so particularly circumstanced with regard to leaving this country, I did not chuse to try the injection, but there being just sufficient room for the instrument to pass safely, I performed the operation by the seton.

This case terminated well, and the gentleman is returned perfectly cured, but it was attended in its progress with an abscess, the consequence of a much greater degree of inflammation than I have ever experienced from the use of injection, and indeed abundantly more than was necessary for the cure.

The accident by which the instrument was forced out, may serve as a caution, and
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point out the propriety of placing the patient against a table, or upon a couch, or in any situation in which it will not be in his power to recede,

C A S E XVI.

ABOUT the same time I injected the hydrocele of an Irish gentleman, aged 30: he felt little pain while the injection was in; the next day, the inflammation was moderate, and proceeded in a gentle manner, with scarcely any variation from most of those cases in which I had used injection, and whose progress I have described; it is therefore unnecessary to take up more of the reader's time in particularizing the symptoms.

It is probable, that this method, like others, may sometimes prove defective; but I can truly assert, that it has not yet failed in any case in which I have tried it; further experiments will give the standard of its value: however there is one merit which I may venture to say it possesses, superior to any other; that the inflammation which is
excited

excited, is so gentle, if it should not succeed, it can do no harm; and if a fresh accumulation of fluid should take place, we are not prevented from another trial by injection, by the seton, by the caustic, or by any other method which may be recommended, equally, and to all intents and purposes, as if nothing had been attempted.

I have only to remark, that though in the course of these observations I have spoken of the adhesion between the tunics, as an established fact, no opportunity has occurred to me of examining, by dissection, the testes which have been thus cured; I do not, therefore, conceive the adhesion to be, as yet, fully ascertained, though extremely probable: it would be satisfactory to determine this point, though the utility of the remedy does not in the least depend on it, and appears to be sufficiently proved by the above cases; for whether the absorbing powers are only stimulated to act so as to reduce the abundant secretion to its natural quantity, or whether an actual adhesion takes place, the cure of the complaint is equally effected,

In the foregoing CASES II. and III. (on p. 13 and 17) for 1777 should be read 1787.

THE correction of this error of the press gives me an opportunity to observe that since these sheets were printed I have used the injection in other cases; but as their progress, and the success which has attended them, as far as the time of probation permits us to judge, were in every respect similar to those which I have related, I shall not enter into a detail of them; only I will remark, that having used it February 26 on the gentleman mentioned in CASE VIII, the inflammation which was produced was so moderate that he would not submit to be confined, but in two or three days after the operation, notwithstanding the testis was evidently inflamed and larger than natural, went out and took his usual exercise. This brought on so much swelling as made
him

him content to stay at home a fortnight, during which time it increased in size and gradually lessened, but at no time was at all painful, unless it was handled. Though, from the little attention paid to it at first, the tumefaction in this case had been rather obstinate, it was, March 18th, so nearly subsided, that he went out of town, with every appearance of the accomplishment of a perfect cure. I may now add, April 9th, that I have seen him since his return, and there is no appearance of his ever having had a hydrocele.

