

named, these mostly appear to be made up of spindle-shaped nucleated cells, some comparatively short and broad, others elongated, and some nearly acquiring the character of a short fibre. These fragments have been present in several cases in which tumour has been subsequently found ; a fact which, in each instance, is noted in the Table of Cases. In two or three instances I have examined the urine day after day, and found no characteristic structure, but this was before I sought, as I now invariably do, by purposely washing out the bladder. In one or two others I have found great numbers of cells like young pavement epithelium, but these are not sufficiently characteristic to offer any indication available for diagnosis.

CHAPTER IV.

OPERATIONS FOR THE REMOVAL OF TUMOUR AND
THEIR RESULTS—CASES AND TABLE.

Treatment—Styptics—Injections—Operation for their removal—
Results—Cases.

TREATMENT.—Supposing we have arrived at the conclusion that the bleeding is certainly vesical, and that in all probability it arises from the presence of an intravesical growth respecting which there is no evidence that it is cancerous in its nature :—are there any means to be employed for checking the growth, or even for destroying it, without having recourse to a surgical operation involving the use of the knife? Are there any means by which hæmorrhage may be subdued or restrained in cases considered temporarily unfit for operation through exhaustion, &c., or for cases in which operation is only partially successful in removing the tumour, and a portion is inevitably left behind ; or for those cases of malignant tumour which are not amenable to any attempt to remove them, and are therefore only susceptible of palliative treatment?

I would reply that, in my experience, I do not know one of the so-called internal styptic remedies

which is of any service in vesical hæmorrhage from any form of tumour. It is exceedingly difficult to prove a favourable result on the trial of any one of these agents. An attack of vesical hæmorrhage naturally runs a short course provided the patient ceases his usual active habits. It is in connection with this influential treatment—viz. rest and the recumbent position—that styptics are given; and when the hæmorrhage stops, as it has a natural tendency to do, the drug swallowed at the time obtains the credit of a power which almost certainly does not belong to it.

I have much more confidence in astringent injections thrown into the bladder with great gentleness, and through a small soft catheter. The two which I have used, and with some frequency, for cases in which operation is not at present decided on, and especially for those in which the tumour has been only partially removed, are perchloride of iron and nitrate of silver. These latter cases have been far more improved after incomplete operative procedure than I could have anticipated, and their recurring hæmorrhages have been readily controlled by these agents, the iron being, perhaps—certainly in two of these cases—more efficient than the other. The strength employed has been from 20 to 60 minims of the tincture of the perchloride of iron in 4 ounces of cold water; to be used daily once or twice, accord-

ing to circumstances. Of the nitrate of silver, from gr. i. to gr. vi. in 4 ounces of water; the stronger solutions being rarely tolerated or necessary.

In regard of malignant disease above alluded to, I may in this place briefly but emphatically state that if the physical characters and symptoms, especially the former, indicate the presence of a growth of this nature, any operative proceedings for its removal must be not merely futile and imperfect, but extremely dangerous, and ought not to be undertaken. It does not follow, however, that in such cases the draining of the bladder by a perineal opening may not, in certain circumstances, be a useful proceeding to relieve suffering or prolong life, &c.

Lastly, I do not propose to do more than name here the great importance of careful attention to the digestion and state of the bowels, in all cases of hæmorrhage from intrapelvic sources, but shall return at once to consider the only means of affording permanent relief to the subject of vesical tumour, namely, the operation for its removal.

OPERATION.—We now suppose that digital exploration has been made by external urethrotomy, and that the steps of the proceeding have been followed, as described in the second chapter, and further, that the operator, on introducing his left index finger, at once encountered a growth of some kind. He should first deliberately spend some two,

three, or four minutes, if necessary, in ascertaining its size, situation, and general outline.

Pressing the abdomen firmly with his right hand into the pelvic basin, he soon ascertains whether the tumour be attached to the wall of the bladder by a narrowish pedicle, or whether it is rather an outgrowth which springs from a considerable area of the coats, and is inseparable from them. He traces the surface, which may be broadly mamillated, one or many lobed, or simply polypoid, firm in contour, or soft and fleecy. Lastly he observes whether the whole is dense, compact, and immovable, or soft, more or less floating, and perhaps fragile. It is important to have a distinct idea of the situation of the tumour, as to whether it lies more to the operator's right or left, which is at once apparent in most instances; then, whether it belongs more to the side or to the floor of the bladder, or whether it springs from the opposite surface farthest from the meatus, or from the upper aspect of the cavity. The mind soon forms a distinct image of the body to be dealt with, and simultaneously arrives at a judgment as to whether it be possible to remove it entirely or partially, and if the latter, whether a sufficient portion can be safely taken away to warrant further surgical interference. If the tumour be polypoid in form, with a distinct pedicle, narrow, or even wide, there can be no doubt as to the propriety of operating.

But if the growth admits of considerable portions being removed without injuring the substance of the vesical coats, which should be approached with great caution, then, also, my opinion is that such portions should be attacked, under the conditions hereafter to be named. When, on the other hand, the substance is hard, and exhibits no marked prominence of contour, characters usually found to be associated, no such attempt should be made; a small portion may be easily removed for microscopic examination, and that should be done.

But now comes an important consideration which should be carefully disposed of before any interference with the tumour takes place from the perineal opening.

When the survey of the vesical cavity has been completed, the operator has to determine the following question: Am I capable of completing my design of removing the tumour before me wholly or partially, as the case may be, through the incision made, or should I do so more efficiently through a suprapubic opening? For it may be taken for granted that a case may occasionally present itself in which the latter course may appear to be preferable, and if so there is no reason whatever for not selecting it. The perineal incision made will not add to the risks of the case, and it has afforded that most important element, the means of obtaining an exact diagnosis.

Now I may here say that my proposal to remove vesical tumours by perineal urethrotomy has met with a direct challenge in Paris from my friend Professor Guyon and his school, who say that the suprapubic operation should be invariably employed for the purpose, and the perineal operation never. I cannot refrain from suggesting that the emphasis with which this doctrine is just now enunciated by some, would be more authoritative had the writers ever tested the method I have now so often practised. There can, I suppose, be no hesitation in anyone's mind that the high operation is a much more formidable and hazardous proceeding than the simple boutonnière. Why, then, should the former be practised in any case until absolute certainty is attained, not only that tumour is present, but also that it is removable by operation? No doubt that in a considerable proportion of suspected cases, the presence of tumour may be regarded as strongly probable; but in very few can it be stated with certainty until the finger has entered the bladder. In no single case can the surgeon ascertain whether or no the tumour in question is separable from the bladder until the cavity has been opened and the physical conditions examined. Well, all these facts—first, the fact of the presence of tumour; secondly, its form and size; thirdly, the nature of its connections with the vesical structures—all the data necessary

for determining the question of operation can be attained by a slight urethral incision which involves no risk. What imprudence, then, can be greater than that of performing the high operation with all its admitted risks while the operator does not know for certain that a tumour is present; and while he knows that if he does find one the numerical chances are even that the tumour, although thus completely approached and laid bare, cannot be entirely removed without inflicting fatal injury on the patient; since one-half the cases are not completely removable.

Further, I declare that while the boutonnière enables the surgeon to ascertain all the facts which it is so necessary to obtain before operating, it also enables him to remove the tumour without difficulty, when it is polypoid in form, and therefore capable of being removed with a fair amount of ease and safety. If however he believes—and he is then in a position to determine the question—that he can attain a better result in any particular case by the high operation, there is nothing whatever to prevent his performing it. In one, or at most two, of my twenty cases, in two of the early ones perhaps I might have so operated with advantage. I should probably do so now on again encountering similar conditions, but in all the remaining cases the risk to the patient would have been greatly increased by performing the high operation, and I should have acquired no facility for

removing his tumour beyond that which external urethrotomy afforded me. On the other hand, when a tumour is discovered which it is impossible to remove, I have the satisfaction of knowing that, at all events, nothing has been done to endanger the patient's life by the simple operation which has been performed.

We shall now consider the means which it is desirable to employ in order to remove the tumour, when, having examined it fully, we have decided to make an attempt through the perineal opening. First, if we have the good fortune to encounter a single growth, polypoid in form (see diagrams, in the Table of Cases, Nos. 1 and also 13 and 15), and therefore with a pedicle of no great width, there need be no hesitation whatever in introducing a pair of forceps into the cavity of the bladder, and employing them there without any aid from the operator's finger. The forceps to be used for this purpose are to have rather wide and serrated margins where the blades meet, so as to crush, but without any power to cut the tissues seized. These forceps should be provided in different forms. The first, or simplest pattern, should be straight, resembling an ordinary lithotomy forceps (fig. 14). Others should be curved for seizing tumours which are situated laterally and near to the neck of the bladder, in which last-named position the straight forceps are powerless to grasp the tumour (figs. 15 and 17).

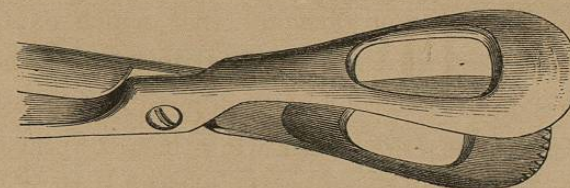


FIG. 14.—Straight forceps.

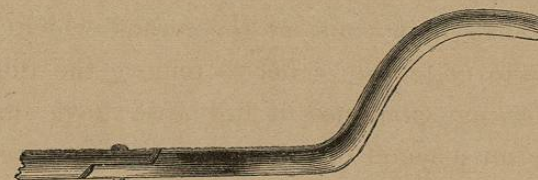


FIG. 15.—Slender, laterally curved forceps, for removing a growth close to the neck of the bladder



FIG. 16.—The same forceps looked at from the front, so as not to show the curve.

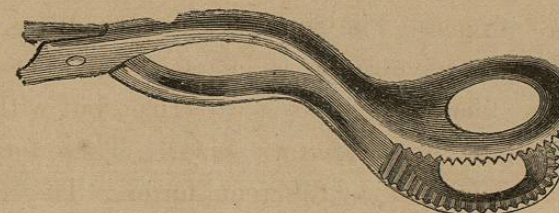


FIG. 17.—Curved forceps for tumours occupying the sides of the bladder.



FIG. 18.—The same forceps looked at from the front.

A pair of each pattern should have cutting edges for exceptional cases, when, for example, the growth is more firm and solid than usual. When the blades are free in the cavity they have merely to be opened easily and widely, and on closing them it is almost certain that they will grasp the polypus more or less completely. The proceeding thus advised is more likely to prove successful in accomplishing its object, than is the attempt to seize a stone in the bladder. But here let it be observed that no suprapubic pressure should be made during this act; nothing should be done to interfere with the natural contour of the bladder. The operator, by light and easy movements of the forceps in varied directions, ascertains that he has the growth within their grasp. My advice is that, above all things, he is not now to pull forcibly, but that he is to press firmly the blades together, biting or chewing a little, if I may use the terms, with the extremities of the blades, without changing the original situation of the bite or grasp. Then a little twisting movement may help to disengage the mass, which if accomplished, the forceps will be felt free, and may be withdrawn with their contents; after which the finger enters to feel what remains, and what more must be done in order to complete the removal. Let me remark, whenever the forceps has removed a portion, however small, the instrument should never be re-introduced until the finger

has again examined the interior, and enabled the operator to form a fresh estimate of the portion remaining, if any, to be removed. But, supposing that the tumour has not been separated by the moderate amount of forceps action described, the operator may disengage and remove them; when on introducing the finger he will probably find the part so nearly

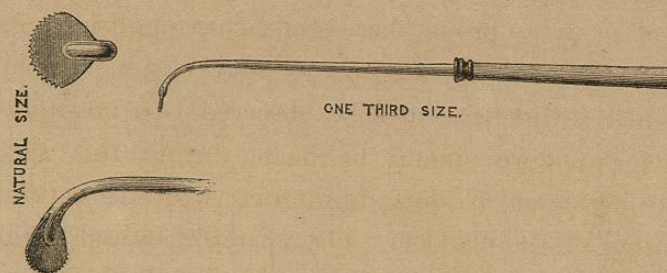


FIG. 19.—Instrument with serrated end for separating by rotatory movement a portion of tumour fixed by the index finger. Seen in profile, one-third natural size. The end is shown in two positions of the natural size.



FIG. 20.—Another serrated instrument, curved in form.

severed that the actual division may be completed with the finger nail; or with one of the little serrated instruments which I have designed for the purpose, and for the employment of which there is ample room through the urethral wound, by the side of the index finger (see figs. 19, 20). There is really no difficulty, nor is there any risk, with ordinary care, in removing

a growth or two of pedunculated form, sufficiently near to the walls of the bladder to render the operation a permanently successful one. I suppose that the ultimate result of dividing the pedicle of a tumour in the manner described is such a cicatrisation of the wound as to prevent the recurrence of outgrowth from that spot hereafter.

But other means may be used according to the judgment of the surgeon. A very small *écraseur*, with violin-string ligature, may be manipulated by the side of the index finger, and used in polypoid forms of tumour. In the cases of women, such a tumour may sometimes be slowly and carefully brought into view by traction on the forceps, and then the pedicle may be ligatured. I have succeeded in doing this in one case; so has Mr. Bryant. In another I drew a polypoid mass within view, and found it was a completely encysted calculus; I then opened the mass, when the calculus escaped.

But in the male it has occasionally happened that the tumour can be drawn through the wound, as happened with Mr. Davies Colley, and also with Mr. Morris, in whose case the growth seemed to have been extruded by natural vesical efforts on the day after operation (having been left untouched on the first), and was then removed, the patient making a good recovery.

But when the growth takes a more complex form

—as when several lobes spring from a wider base, for examples see diagrams Nos. 4, 7, 13, 16, in Table of Cases, pp. 97–111—the forceps must be depended upon for removing them by repetitions of the same process which is employed for the single growth. But when the base is wider still and the growth is less prominent, as that represented in diagrams Nos. 5, 12, 17, 18, 19, it is doubtful whether complete extirpation is possible by any proceeding, either through a perineal or through a suprapubic opening. The wide base involves such intimate continuity of tissue between the coats of the bladder and the structures of the growth, that I believe separation to be mostly impossible; and that ablation of the prominent portions of the growth, when feasible, should be undertaken only with the view of retarding its progress, but with no prospect of effecting complete separation of the disease from the body.

These portions are to be seized and destroyed, partly by removal on the plan just described, and partly by crushing, and thus inducing sphacelus and sloughing of the growth. The question of applying some chemical astringent arises in such cases, and its utility may be regarded, perhaps, as twofold. A solution of the perchloride of iron may tend to check the hæmorrhage, which is almost invariably very free for a few hours after the removal of wide-based growths, and it may partially destroy the portion

which remains after the forceps have done their work. For this purpose I have contrived a straight and also a curved glass syringe containing a small sponge, saturated with solution; the sponge being pressed by the piston permits the escape through small perforations at the extremity of from 30 to 60 minims of the solution, at the precise spot where it is desired to make the application.

There is one circumstance important to be noted, especially in dealing with the less prominent growths; and that is, the effect of strong suprapubic pressure made by an assistant in relation to their apparent situation, and their mode of presentation to the finger of the operator engaged in exploring the bladder, and in estimating their size and form. If that pressure is considerable it forces the upper wall of the bladder into its own cavity, and thus gives to the growths a larger contour than they possess, and makes them apparently salient to a much greater extent than they really are. Thus an eager or inexperienced operator, unaware of the effect of strong suprapubic pressure, might be led to seize the mass offered to the forceps, through the influence of this pressure, and under the belief that it was a large growth, he might inflict a fatal wound by crushing a double fold of the coats of the bladder, and so making an opening in the peritoneum. To avoid such a catastrophe it is only necessary, first, to decline the attempt to

destroy any growth which is clearly not sufficiently salient to admit of complete or nearly complete removal; and, secondly, never to employ the forceps while forcible suprapubic pressure is made; at least, no more pressure than is desirable just to steady and support the bladder and the parts adjacent.

RESULTS.—We have now, finally, only to consider what are the results which have been attained by the perineal operation in relation to vesical tumours.

Of the twenty cases of tumour, two were in women: one of these died in three days of total suppression of urine; autopsy showing advanced disease of kidneys (one contained a large calculus), and that no injury was inflicted upon the bladder. The other is now in excellent health, having entirely lost her painful symptoms; observing a few drops of blood, occasionally, after more exercise than usual: more than two years have elapsed since the operation.

Of the eighteen male cases, five died within three weeks after the operation; three others died at periods of some months after, two of them from malignant disease developed elsewhere. The other nine are living; one of these, from whom I removed a tumour in the autumn of 1882, I operated on again, removing a larger growth than the original one last February, and he has again recovered. In four cases no attempt was made to remove the tumour, it being manifestly impossible to do so, but only to diminish it as far as