PART FIRST.

ORIGINAL COMMUNICATIONS.

Article I.—Surgical Cases and Observations. By James Syme, Esq., Professor of Clinical Surgery in the University of Edinburgh, and Surgeon to the Queen in Scotland.

Obstinate Stricture of the Urethra.

The simple bougie is now, in this country at least, nearly the only means employed in treating strictures of the urethra; and in the great majority of cases, the success attending its employment leaves nothing to be desired with a view to increasing the facility, safety, or efficiency of the process. But every practitioner of experience must have met with exceptions from the ordinary rule; and on such occasions, instead of finding the contraction readily yield to the progressively increased size of the instruments introduced, could not avoid remarking a peculiar obstinacy of resistance. Along with this obstinacy of disposition, there is usually associated a proportional degree of irritability, which renders the treatment still more embarrassing, and also dangerous. For the pressure that is made in endeavouring to overcome the resistance, is very apt to occasion rigors, and a febrile paroxysm, which instead of passing away like the ordinary attacks of this kind attendant upon stricture, without any local or constitutional derangement, may be followed by swelling of the testicle, abscess of the perineum, or suppuration of the large joints. In the event of these unpleasant effects neither proving fatal, nor interrupting the treatment by exhausting patience, the surgeon may at length succeed in passing a moderate or full-sized instrument, but with little credit or satisfaction, since the strong tendency to contraction exposes the patient to a speedy relapse, and renders a frequent recourse to bougies necessary for his comfort so long as he lives. In proceeding to explain a mode of procedure for easily, safely, effectually, and permanently subduing this obstinate
and irritable form of stricture, I may remark, that its ordinary seat is in the anterior part of the canal, where no difficulty attends the passing of instruments; and I think it right to add, that during the course of my hospital practice, now extending over fifteen years, I have never either in public or private found it necessary to puncture the bladder, from inability to pass the catheter, for retention of urine.

Case 1. I was requested by the late Dr Hay to take charge of a gentleman who had suffered long and severely from stricture of the urethra. He was between 40 and 50 years of age, of tall stature, and robust form. His complaint had existed twenty years, and during the earlier part of this period been partially alleviated by the introduction of bougies, but had then gradually increased, until at length the suffering occasioned by it was altogether intolerable. During both day and night, the calls to make water were extremely frequent, and excited the most violent expulsive efforts, which, aided by a milking-like manipulation of the penis, and pressure along the perineum, never produced anything more than a scanty dribbling discharge. From the bladder being thus imperfectly emptied, the urine was constantly passing away insensibly, so as to keep the clothes wet, with what discomfort to the patient, may be more easily imagined than described. He was peculiarly susceptible in regard to atmospheric changes, and especially in damp weather suffered an aggravation of the symptoms. The urine, when collected on such occasions, was found to deposit large quantities of glairy mucus, from which indeed it was never quite free.

On examination, I found a tight stricture between five and six inches from the orifice of the urethra; and at the second or third attempt, succeeded in passing the smallest sized bougie fairly through it into the bladder. I then supposed that as usual there would not be any further difficulty in treating the case, and desired the patient to call upon me twice a-week, unless when the weather or any other circumstance should render a longer delay necessary. The progress, though not rapid, at length enabled me to pass No. 5 of my scale, equal to No. 2 of that in common use, when I found it impossible to make any advance. Indeed there was little encouragement to persevere in attempting this, as, notwithstanding the degree of dilatation that had been accomplished, there was not any appearance of relief from the symptoms of the disease.

I then proposed to confine the patient to bed, and keep a succession of catheters, gradually increased in size, in the bladder. He made no objection, and was greatly pleased to find, that instead of the irritation he expected, there was at once obtained complete relief from all his previous uneasy feelings. He read and wrote, ate and slept, without the least disturbance, drawing off the urine from time to time, and observing to his great satisfaction that the mucus
had entirely disappeared. At the end of ten days I withdrew the full-sized silver catheter then employed, and before twenty-four hours had expired, found the complaint in every respect exactly as it had been before the process was commenced.

Some months after this I divided the stricture from within by means of a catheter containing a lancet blade, which was protruded from its sheath after the instrument had been passed through the seat of contraction, and kept in this expanded state while the catheter was withdrawn. A large bougie was immediately afterwards passed with perfect ease; and again hopes of success were entertained. But next day things were in precisely the same state they had been formerly.

Several months having elapsed without any change, it was resolved to combine the two last-mentioned modes of treatment. In the first place, I divided the stricture as before, but on both sides, by means of two lancet catheters, cutting right and left, and then introduced a full-sized catheter into the bladder, where it was retained for a week. For some time afterwards it seemed as if benefit had resulted from this procedure, and the patient, by frequently passing a bougie or catheter through the strictured part, was enabled to make water in a tolerably full stream. But this imperfect relief was of short duration, and by the end of two or three weeks, the frequent calls, laborious straining, and copious mucus, proclaimed that the stricture had regained its powers.

The patient now protesting that life was not desirable under the torment of his complaint, and entreating me to employ some efficient measure of remedy, no matter at what expense of pain or risk of danger, I resolved to divide the stricture by free external incision. With this view, a small staff, grooved on its convex side, having been introduced, I made an incision in the raphe of the perineum from the bulb to the anus, and then feeling for the stricture, which was easily recognised by its surrounding induration—ran the knife fairly through the whole extent of thickened texture. A full-sized catheter was substituted for the staff, and retained for a few days. The patient suffered little from the operation, but some uneasiness from irritation caused by the urine passing through the wound. When it closed he felt quite well, and continues to do so, though eighteen months have now elapsed. He has never required the bougie, and in every respect enjoys the most perfect health.

In this case, the obstinacy of resistance, and tendency to contract, occurred in an extreme degree. Indeed, the latter peculiarity was so strongly marked, that it suggested the idea of an adventitious elastic texture, or rather one possessing contractile properties similar to those of the middle coat of the arteries. It is plain that the most prolonged use of bougies would not have effected a cure. And the result of retaining catheters in the urethra, shows that this mode of treatment is not so effectual as it has been represented, since it only produced a temporary dilatation. But the most important les-
son is to be drawn from the results of the different trials that were made of internal incision by lancet catheters. Additional space was thus at once obtained, and the passing of bougies was greatly facilitated, without any lasting difference being effected in the contractile power of the stricture. It hence appears that this mode of treatment affords no practical advantage, since, in the ordinary condition of stricture, bougies accomplish recovery on the easiest possible terms; and in its obstinate form, an internal incision does not prove sufficient to relieve the patient. The reason of this, I believe to be, that the obstinate stricture in question requires for its complete and permanent remedy, a thorough division of the firm texture which surrounds the contracted part of the canal. The following case tends to confirm this opinion.

Case 2. James Smith, aged 28, was admitted into the hospital under my care, on the 11th of December last. He stated that, five years before he had been affected with gonorrhoea, and six months after being so, in consequence, as was supposed, of hard work, had observed his left testicle to become swelled and painful. At the same time he remarked, that he could not empty his bladder without forcible straining, and that the stream of urine was diminished in size. He applied to a surgeon in town, under whose care he continued for six weeks; during the latter part of which period, bougies were introduced into the urethra every third day. He then thought himself sufficiently well to resume his occupation as a blacksmith. But in the course of six months the symptoms of stricture having returned, he again applied to the same surgeon, who passed bougies, without affording the relief that had been formerly experienced. The stricture gradually increased, and, on the 4th of September 1840, he was admitted into the hospital under the care of one of the ordinary surgeons. At this time, from what appears in the case book, and also from the patient's own statement, he seems to have suffered extreme difficulty in making water, sometimes causing complete retention of urine, and also great pain in the perineum. Two days after admission, the smallest-sized catheter was passed, and followed, it is said, by "great irritation about the neck of the bladder, and swelling of the left testicle." A fortnight afterwards incisions were made into the scrotum. In the beginning of October the introduction of catheters was resumed, and continued until the 29th of January 1841, instruments of various sizes from No. 1 to No. 5, being retained in the bladder as long as the patient could endure them, from half-an hour to forty-four hours at a time. At this date it is stated that "water does not seem to come in a more free stream." He left the hospital soon afterwards, and placed himself under the care of his original attendant, who introduced catheters of gradually increased size up to No. 14, though the stream of urine was still far from the natural fulness, and part of the water was discharged through two fistulous openings in the scrotum. He
resumed his employment, and attempted to prevent the state of matters from getting worse, by occasionally introducing a short needle-shaped iron wire of his own construction into the urethra. Notwithstanding these efforts, the stricture contracted more and more, so that at length the urine was voided by drops, and the pain in his testicles as well as the perineum, not only rendered him unable to walk, but confined him to bed, and left no alternative except returning to the hospital.

On examination I found the perineum greatly swelled and hardened, the testicles much enlarged, with water in the tunica vaginalis of each, and various fistulous openings from the scrotum backwards. As it appeared that a collection of matter in the perineum had recently opened spontaneously by a small aperture, I made a free incision through the parietes of the cavity, and postponed farther investigation of the case until the effects of the free drain thus afforded might be ascertained. In the course of the following week no material improvement took place either in the state of the swelling, or the voiding of urine, which continued to escape by oozing out through the urethra and fistulous openings without the patient being conscious of its discharge. The urethra was then examined, and found to be contracted a little more than two inches from the orifice, so tightly that the smallest probe could not be passed through the stricture, which was distinctly recognised through the integuments by the induration surrounding it, and felt like a broad hard ring.

Feeling assured from the history of the case and the condition of the stricture, that the ordinary means of treatment could not lead to a satisfactory result, I resolved to divide the stricture by incision; and as the guidance of a director was not available for this purpose, I proceeded in the following manner. Standing on the right side of the patient, and seizing the stricture between the finger and thumb of my left hand, I directed the point of a sharp curved bistoury into the wide part of the urethra, immediately behind the contraction, and then pushed it forward through the dense texture. Having withdrawn the knife, I introduced a middle-sized silver catheter, merely feeling a slight resistance at the seat of stricture, and encountering no other obstruction. The bladder being emptied of a large quantity of water which it contained, a flexible catheter was substituted for the silver one, and retained for two days, to prevent any risk of extravasation. At the end of this time the puncture through the skin could hardly be detected, as it had healed by the first intention; the patient felt perfectly easy, making his water in a full stream, and a great improvement had taken place in the state of the perineum as well as neighbouring parts. A few days afterwards I tried to pass the catheter employed after the operation, but found that the stricture had so far returned, as only to admit a considerably smaller instrument. Bougies gradually increased in size were therefore employed as in
ordinary cases, with the effect of fully dilating the contraction, and completing the removal of its consequences. The fistulous openings quickly closed; the swelling of the perineum, scrotum, and testicles disappeared; the water in one tunica vaginalis was absorbed; and that of the other when drawn off, did not return. In these circumstances the patient was dismissed, with injunctions to return occasionally to have a bougie passed. This he promised, but omitted to do; and upon calling after a considerable lapse of time, was found to be again suffering from the tendency of the urethra to contract.

This case has been related at length, because it affords a good example of stricture in its obstinate form, and well illustrates the insufficiency in such cases of the ordinary remedial means, and even of incision itself, if not carried completely through the indurated textures surrounding the contraction. It is plainly impossible to regulate the plunge of a sharp-pointed knife so precisely as to ensure this being effected; and, therefore, though I have sometimes succeeded perfectly in attaining the object in this way, the method pursued in the following case seems preferable.

Case 3. John Thomson, aged 15, was brought to me on the 18th of May by his father, who stated rather paradoxically, that he could not either keep or make his water. Upon more particular inquiry it appeared, that he had received a blow in the perineum from the kick of a horse two months before; and that about a week after suffering this injury, which was so severe as to confine him to bed, he had noticed the flow of his urine to be slower than usual, and attended with pain. These symptoms had gradually increased, until the water could be voided only by drops, and at the same time could not be retained, so that it was continually escaping, and wetting his clothes. I found a stricture of the urethra opposite the scrotum, so tight that it would not admit the smallest probe, and surrounded by a mass of thickened and indurated texture, in the form of a ring, nearly half an inch broad. After trying various instruments without success, I passed an exceedingly slender catgut bougie through the stricture, and then a succession of larger ones, until at length a metallic bougie of the smallest size could be introduced.

At the end of two months' patient treatment it was found that no more ground had been gained, and that though the patient had ceased to suffer from incontinence of urine, the symptoms in other respects remained without alleviation—the hard ring at the seat of stricture having suffered no diminution, and micturition being still painful, as well as frequent. On the 19th of July I introduced a small grooved director into the urethra, and, while it was steadily held by an assistant, compressing the indurated part of the canal between the fore-finger and thumb of my left hand—punctured the integuments with a narrow-bladed knife—directed its point into the groove immediately above the stricture—and then
pushed the edge forward, until I distinctly felt the whole dense texture give way to it. A full-sized catheter was then passed without encountering the slightest impediment. The loss of blood did not exceed a drop or two, and the wound healed like the prick of a needle, so as to leave no trace of its existence; and at the end of two days, when the catheter was withdrawn, the patient felt in every respect perfectly well. Some days afterwards I examined the state of the canal, and found, that not only the catheter passed at the time of the operation, but even a larger one could be introduced without the smallest feeling of contraction. The boy was dismissed on the 29th, with instructions to return occasionally.

In conclusion, I beg it may be understood, that nothing can be farther from my intention, than to propose division of strictures by a cutting instrument, as in general preferable to the treatment by bougies. It is strictly to those cases which are found to resist a careful trial of the latter method that the operation should be limited. I feel quite sure, that not only much discomfort has been left unrelieved, but that many lives have been lost, from regarding all strictures of the urethra as equally amenable to the effect of dilatation, and may sum up my views of the subject by stating the following principles:—

1. Stricture of the urethra does not always yield to the use of bougies.
2. Attempts to overcome the resistance of obstinate strictures by the bougie, are apt to occasion serious disturbance, local as well as general.
3. Strictures of this obstinate nature are generally seated in the anterior part of the urethra, but may occur at any part of the canal liable to contraction, and are usually surrounded by a thickened mass of indurated texture.
4. Partial division of this ring, either from within or without, affords temporary facility in passing instruments, but no permanent relief from the complaint.
5. Complete division of the indurated and contracted part is the only effectual remedy.
6. The best way of effecting complete division, is to divide the contracted portion upon a director, by subcutaneous incision if the anterior part of the canal is concerned; and by free incision if the stricture be seated behind the scrotum.

POPLITEAL ANEURISM IN A CHILD.

David Dand, a stout healthy-looking boy, 9 years of age, was admitted on the 19th of February, recommended by Dr Lumgair of Largo, to undergo the operation for popliteal aneurism. The tumour extended from the lower part of the popliteal space under the bellies of the gastrocnemii muscles, so as to distend the calf of the leg. When examined by the hand, it was felt quite circumscribed, and pulsated distinctly. Under moderate compression,
the swelling disappeared entirely, and quickly returned when the pressure was withdrawn. The same effects resulted from temporary compression of the femoral artery. It was stated that the disease had been first noticed about two years before, soon after the boy had completed his seventh year, and that it had occasioned little uneasiness, but that the swelling had latterly enlarged with increasing rapidity, so as to excite alarm for the consequences of its progress if allowed to proceed unchecked.

I tied the femoral artery on the 24th; no unpleasant symptom was caused by the operation, immediately after which the pulsation ceased, and the swelling could no longer be felt. In its place, however, there was soon to be perceived a solid tumour of coagulum, which gradually increased in firmness, and diminished in size. The ligature came away on the 4th of March, (the 14th day), and the patient was dismissed on the 21st.

The age of this patient at first led my colleagues and myself to entertain doubts as to the disease being truly an aneurism, similar to what is met with in adults. But the diagnostic characters were so well marked, that we decided on tying the artery; and the effects of the operation most satisfactorily demonstrated that the nature of the case was really no other than it had appeared to be. Sir A. Cooper has stated, that the earliest age at which he had met with aneurism was eleven years, the patient being a boy in St Thomas's Hospital, and the artery affected the anterior tibial. A gentleman who attended my lectures last winter, (Dr Peach), told me that he had witnessed the amputation of a child's thigh for popliteal aneurism of very large size; and another gentleman whom I had the pleasure of regarding as a pupil at the same time, (Dr Croft), mentioned that he had seen in the museum of an English provincial hospital the preparation of a carotid aneurism, for which the artery had been tied without success in a child of seven or eight years of age. But I am not acquainted with any instance of aneurism being remedied by the modern operation at so early a period of life as in the case just related.

It may here be not improper to notice the attempt which has lately been made to introduce compression of the femoral artery instead of its ligature for the treatment of aneurism. In the early part of the present century, before the principles on which arteries may be tied with safety had been established, while ligatures of reserve, rolls of plaster, and broad tapes were employed for the purpose, and no harm was anticipated from extensively detaching the vessel to be tied from its neighbouring connections, various instruments were contrived for pressing upon the femoral artery without impeding circulation through the limb, and repeatedly employed with success in cases of popliteal aneurism. But the suffering endured by the

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1 Lectures on Surgery, vol. ii. p. 41.
2 Boyer, Traité de Malad. Chirurg., vol. ii. p. 234.
patients was so severe and prolonged, during the tedious process of recovery thus accomplished, that we find surgeons in whose hands this method had proved successful, preferring to it the Hunterian process, with all its early imperfections, or even encountering the horrors of the old operation, rather than inflict the permanent agony of the screw. The sensation caused by continued pressure over the vessel, however carefully applied, if sufficiently forcible to prove effectual, is of a peculiarly intolerable kind, and must be endured for a space of time, not to be reckoned by minutes, or even hours, but by days, weeks, or months. Ugly consequences also occasionally occur, in the shape of ulcerations, and sloughs, or swelling of the limb, and there can be little doubt, that if the method in question were generally adopted, so as to bring under its influence the variety of constitutions which are prone to resent such treatment, there would not be wanting even fatal results to strengthen the objections that might be urged against its adoption. It should be kept in view, that the field for resorting to the use of pressure is limited to the femoral artery, as the superior extremity is liable only to traumatic aneurisms, which are best treated by double ligature of the wounded vessel, while the carotid, subclavian, and iliac arteries, are placed beyond the reach of compression. But the femoral artery may be tied with so much ease, so little suffering, and such perfect safety, that the laborious, distressing, and tedious procedure, which has lately been brought again into notice by a surgeon of Dublin, will probably soon return to the obscurity in which it has very properly been allowed to slumber. For my own part, having tied the femoral artery thirteen times for aneurism, and never met with the slightest symptom of an unpleasant nature from the operation, I shall certainly not deviate from the line of practice hitherto pursued.

BURSAL SWELLING OF THE WRIST AND PALM OF THE HAND.

There are few subjects of surgical practice that have occasioned more trouble and disappointment than morbid distension of the bursa, which accompanies the flexor tendons of the fore-arm, in their course under the annular ligament of the wrist, towards the fingers. The resistance of the ligament prevents any enlargement of the bursa where lying under it; but the wrist and palm become distended, so as to occasion an unseemly swelling, and weakness of the hand. The fluid effused into the cavity is generally associated with numerous small cartilaginous-looking bodies, of a lozenge or lenticular figure.

In treating this form of ganglion, the means generally employed prove very unsatisfactory in their effect. Blisters and pressure are altogether unavailing. Punctures either heal without producing any improvement, or remain open, so as to occasion obstinate sinuses. Incisions of larger extent, caustics, and setons, have all been carefully employed with very uncertain benefit, and frequently
great suffering; indeed I have known the continued irritation so induced prove fatal. As the treatment of similar derangements in other parts of the body is not attended with such troublesome consequences, the question naturally presents itself, what local peculiarity is concerned in causing the obstinacy of this particular case? The reply suggested by what has fallen within my observation is, that the constriction caused by the annular ligament produces the effect in question, by preventing the portion of bursal sac corresponding to it and the subjacent tendons from undergoing the healing process. Impressed with this conviction, I tried the following experiment, the complete success of which encourages me to hope that the method pursued will be found to afford an effectual remedy for a complaint which has hitherto proved so troublesome.

Janet Preston, aged 20, was admitted on the 13th of February, complaining of pain and weakness in her left hand. The wrist and palm of the hand were much swelled, but not discoloured, and pressure on these parts caused distinct fluctuation, with the jarring sensation that characterises effusion into the bursal sheaths. She stated that pain had been first felt about two years before, and that for the last twelve months she had had hardly any use of the hand, in consequence of the swelling, and weakness attending it.

I made a free incision from the wrist into the palm of the hand, dividing the annular ligament. This gave vent to a quantity of glairy fluid, with many small flat cartilaginous-looking bodies, and exposed to view the flexor tendons, separated and surrounded by thickened bursal membrane. The cavity was filled with dry lint, supported by a bandage moderately compressing the hand and wrist. In the subsequent treatment care was taken to prevent protrusion of the tendons, by drawing the edges of the wound together, and applying a compress over the seat of the annular ligament. Not the slightest disagreeable symptom followed the operation, and three days after it the patient was able to sew, which she had been prevented from doing for many months previously. In the course of a few weeks the wound healed, and the limb was in every respect perfectly sound.

(To be continued.)