keeping the point on the upper wall of the urethra. The introduction of the catheter should be commenced on the third day after the operation, and it must be regularly repeated until the wound is soundly healed.

Bladder Drainage through the Perineum.—In the cases I have related to-day, the evacuation of the urine was carried on after the operation through the perineal wound, and not in the ordinary way by fastening a catheter into the bladder. The instrument is not so comfortable to the patient as the india-rubber tube, and it sometimes causes pain and irritates the wound. Perineal drainage offers the advantage also of diverting the stream of urine, and permitting the anterior part of the passage to be efficiently deodorised and kept at rest—a very important expedient for preventing the development of that form of urethral pyrexia which is intimately associated with the contact of urine with a wounded surface. Moreover, in cases of external urethrotomy for the relief of obstinate and unyielding strictures, the structures of the perineum are already infiltrated and unhealthy, the bladder is the seat of chronic cystitis, and the urine is persistently in a state of decomposition, so that under these conditions there must be a special risk of septic intoxication. Mr. Reginald Harrison has practised this method of drainage with great success after internal urethrotomy, and his patients have been remarkably free from urethral fever.³ Bladder drainage through the perineum is extremely valuable in many other operations. I have practised median cystotomy in the treatment of urethral fistulae, in plastic operations on the penis, and in cases of subcutaneous urethrotomy for strictures in the bulbous and penile portions of the canal. The incision may be regarded as a kind of safety valve in all cutting urethral operations. With reference to the danger of forming a chronic fistula from imperfect closure of the wound, it has never occurred in my practice. When no longer required, the orifice has always been very readily obliterated.

Recurrence of Stricture after Operation.—The tendency to immediate contraction after urethrotomy is always prevented by the judicious use of dilators. But what about the subsequent contraction when the patient has gone from the observation of the surgeon? It has often been affirmed that recurrence of the stricture is more likely to follow external division than any other form of surgical treatment. We must not forget, however, that much of the liability to contraction is due to the character and severity of the disease. The worst and most obstinate forms are certainly produced by accidental rupture and laceration, and recurrence in these cases appears to bear a direct relation to the amount of cicatricial tissue developed in the process of repair. There is, indeed, no form of treatment which can remove the risk of recontraction of the canal. I am willing to admit that strictures do recur after external urethrotomy; but the same tendency would be exhibited after any other possible mode of operation. Fortunately this shrinking can always be arrested by the regular introduction of an instrument into the bladder, and the patient must be instructed to assiduously continue this treatment for many years. He must be told, too, that this important matter is not wholly dependent upon mechanical dilatation, for much will rest with his own conduct and self-management. He ought to live regularly and temperately every day of his life, and in this way he can persistently labour to prevent a recurrence of his old disorder.

Perseverance and Impermeability.—We must not be hasty in concluding that a stricture is really impassable. How often very obstinate contractions are overcome with the help of an anæsthetic and general treatment! Depend upon it, the vast majority of strictures can be successfully managed by intermittent dilatation. Many obstinate cases give way when every source of irritation is removed, and strictures of great difficulty and narrowness are at length made to yield by perseverance and the skilful use of delicate instruments. The dextrous handling of a fine bougie will accomplish much, but rough and injudicious catheterism is full of danger, and will surely aggravate the trouble.

In the practice of urethral surgery we shall often find scope for the exercise of judgment in the selection of the best method of procedure, and opportunity also for patience and skill in our efforts to penetrate tight and tortuous strictures. Occasionally the severest form of the disease may fall into our hands, and then we may confidently have recourse to a precise and ingenious operation, instead of groping in the dark, and puddling in the perineum without a guide.

CASE OF PORRO-CÆSAREAN OPERATION.¹

By W. CADGE, F.R.C.S.,

Surgeon, Norfolk and Norwich Hospital.

I SUBMIT the following case for two reasons: 1, because it possesses intrinsic points of interest; and 2, because there is still much difference of opinion as to the proper course to be adopted in certain cases of obstructed labour and it is well to bring out every case bearing on the subject.

Whether Cæsarean section should wholly or in great part supplant the induction of premature labour or craniotomy; abdominal section having been done and the child extracted, should the uterus be amputated or should it be left *in situ* and stitched up; and if left in the abdomen, should the woman be sterilised by the removal of the ovaries or by ligaturing the tubes, or should she be allowed to incur the risk of repeated pregnancies? These are some of the unsettled questions which I do not intend fully to discuss, all-important as they are, seeing that they have frequently been brought before the profession during the last few years in all countries, and it seems now only to require experience, honestly recorded, to decide them.

Let me then, as briefly as I can, report a case of Porro-Cæsarean operation, the only one, so far as I know, that has occurred in the Eastern Counties. I will begin at the beginning, or, rather, adopting the Spanish method of reckoning the age of a person nine months before birth, soon after the beginning, and say that while *in utero* this patient had hydrocephalus. Her birth was hard to accomplish. Mr. Gillett, of Brooke, who acted on her behalf, has told me that he applied the forceps but could not effect delivery until he had punctured the fontanelle and evacuated a very large quantity of hydrocephalic fluid. Strange to say she lived and grew up, that is, to the very limited extent of 46½ inches. With this dwarfish stature she had to a slight extent rachitic limbs, and, as a legacy from her prehistoric hydrocephalus, a large head. Her head measured 24 inches in circumference, fully one inch more than the head of any member of our medical staff.

At the age of 27 she again fell into trouble, and became pregnant—"sat down to dinner before grace was said," as Fielding expresses it. She was admitted into the hospital in March of this year, a few weeks before her expected confinement, and I found that the antero-posterior pelvic diameter was not more than an inch and a half. We consulted, and decided that abdominal section and amputation of the uterus should be done shortly before labour commenced. Accordingly, on March 25th, an incision through the abdominal wall of 4 to 5 inches was made below the umbilicus; two flat sponges were then inserted to prevent blood or liquor amnii getting into the peritoneal cavity; a small opening was made through the thin uterine wall, and extended vertically by two fingers. The liquor amnii escaped, and the foetus was easily extracted by the head, and the funis tied. The uterus contracted, threw off the placenta, and was easily drawn out through the abdominal wound. Another sponge was put in its place, and the wire of the *serre-nœud* was quickly placed round the cervix, fastened and tightened sufficiently to arrest bleeding, but not tight enough to cut the uterine tissue. A stout needle was then passed through the cervix close to the encircling wire to prevent its slipping; the uterus, with its appendages, was clipped off with scissors, and the stump trimmed up a little and covered with perchloride of iron. The external wound was carefully closed round the stump of the cervix, exactly as in the old days of clamp and ovariectomy.

The child looked blue (the patient inhaled ether), but it cried lustily, and seemed to recover. It continued blue, however, and did not breathe well, and, notwithstanding the use of warmth and restoratives, it faded off and died four hours after its birth.

The patient went on well for a few days, then symptoms indicative of pleurisy ensued, pulse and temperature rose, pains in various parts of the chest, friction sounds on both sides, settling eventually into clear signs of fluid in the lower left chest, with displacement of the heart to the right.

So far as the abdominal region was concerned, all went well; the wound healed, the clamp came or was clipped away on the tenth day; the deep depression at the lower end of the wound, caused by retraction of the uterine stump, gradually filled up and

¹ Read before the annual meeting of the East Anglian and Huntingdon and Cambridge Branches of the British Medical Association and the Norwich Medico-Chirurgical Society.

healed, so that, as far as the operation is concerned, the case is a perfect success.

But the patient is still in the hospital and is still far from well. The pleurisy above noted abated as to the acute symptoms, but she continued feverish and looked flushed; respirations were abdominal and from 35 to 45; pulse ranged between 120 and 130, and the temperature varied between normal and 102°, and once or twice reached 103.5°. Suspecting an empyema, I aspirated the chest on May 11th, about six weeks after the operation, and found pus. A few days after this the chest was opened behind in the eighth interspace, a piece of rib resected, and a large drainage tube adapted; about a pint and a half of pus was evacuated, and has gone on escaping since in moderate quantity. She is greatly improved, but it looks as if the case might settle into one of the instances of chronic discharge of pus from the pleural cavity which are sometimes so hard to bring to a complete cure.²

I need say no more about the patient; but let me ask, What explanation can be given of this attack of acute pleurisy occurring a few days after the operation? Many would say it was due to septic poisoning, but I cannot admit the correctness of that view. Had it been so, would there not have been septic peritonitis rather than pleuritis? There would have been higher fever and that peculiar facial expression and some degree of mental confusion or delirium which are so characteristic of blood poisoning. Moreover, cases of chest inflammation sometimes follow operations, such as lithotomy, where no wound is made, and when no likelihood of septic infection can be assigned as a cause. I am inclined rather to attribute it to chill and exposure during or after the operation, or in changing bedding or dressings when the patient was sweating profusely. I leave such a question as this, however, for further investigation, only suggesting that we should not yield assent too readily to the fashionable bacterial pathology of the day.

The more direct question in this connection is, under what circumstances should Cæsarean section be adopted? Here, again, authorities are at issue. All, however, are agreed that it should be done in cases of pelvic deformity in which the antero-posterior diameter is less than two inches and a half; for obstructed labour, due to pelvic tumours, whether belonging to or independent of the uterus, when the tumour cannot be pushed up so as to allow the labour to proceed; for cases of rupture of the uterus, and in cases where other modes effecting delivery have failed. Also in cases of cancer of the cervix, the mother's life being doomed, she should be advised to allow abdominal section with the view of saving the life of the child. But ought it to supplant craniotomy altogether? Craniotomy is said (and it must be admitted) to be a difficult, violent, and murderous proceeding; it not infrequently leads to the death of the mother, and of necessity it sacrifices the child. I do not quote statistics on this point of craniotomy maternal mortality, for they are contradictory and unreli-

able, but it must not be forgotten that when the mother escapes with life, the rough proceeding—and it is always very rough—too often entails vesical or rectal fistulæ. Moreover, it does nothing to prevent a repetition of the danger from a subsequent pregnancy. Abdominal section—whichever method is adopted—effectually obviates this last danger; it will, in all probability, preserve the life of the child, but what about the danger to the life of the mother? I will not load this paper with statistics, but, from my own study of them, I am inclined to say that in favourable cases, such as we are likely in future to have—such as this one which I have reported—in which the operation is undertaken deliberately, with the time chosen, with full assistance, and when no exhausting attempts at forcible delivery have been made, we

may expect to reduce the mortality to 10 or 15 per cent. or less. Probably the maternal mortality of craniotomy is not much, if at all, less than this.

But, supposing that we have decided to resort to abdominal section, which method should be adopted? Should the uterus and its appendages be amputated as in the case I have related? Or should the uterus be left *in situ*, the wound of it carefully stitched up, and the ovaries removed or the tubes ligatured so as to prevent a recurrence of pregnancy? I must not detain you by a full statement of the arguments on this disputed question. I rather think that most obstetricians are in favour of leaving the uterus, and that most abdominal surgeons are in favour of removing it. The mortality of the two plans will probably be found to be nearly equal. There is, however, one great advantage in Porro's method—it is much the easier operation to do, and, therefore, when a practitioner is abruptly called on to do one or other operation, perhaps with scant assistance, in a poor and insanitary cottage, and possibly in the night, there can be no doubt that Porro's method is the best he can adopt. I do not go so far as Mr. Lawson Tait, and say that it may be done in less time than it takes to describe it, but with it there is no elaborate suturing of the uterine walls, no dealing with the ovaries or tubes; the time occupied is probably not half that required for Sænger's operation, and the saving of time is always an important element in the success of such operations.

It may be said, and said truly, that the old Cæsarean section has many a time been done under these adverse circumstances, and

with success too; but success was always the exception to a sadly fatal rule, and occasional success will not justify a doubtful practice. A case of auto-Cæsarean section was reported by Von Guggenberg in 1876, in which a woman who had been twice delivered by forceps, and had undergone craniotomy four times, opened her own body with a razor and extracted the foetus; she fainted, and the doctor on his arrival found a large coil of bowel protruding; this he washed and returned, closed the wound, and the patient recovered. There is the Scotch case, or cases, in which the abdomen and uterus were ripped open by the horn of a cow, and recovery followed. These strange cases and results are remarkable, but they do not warrant a return to the obsolete method of simple Cæsarean section and no uterine sutures.

[From a Photograph.]

² She is now (June 30) much better, and is convalescent.

I have mentioned Porro's and Säger's methods of sterilising the mother, as well as saving the child, but I can conceive it possible that, if the time should come, as come it will in the opinion of some eminent experts, when the mortality of Cæsarean section is reduced to 10 per cent., or less, a case may now and then occur in which this sterilisation should not be carried out. Let us imagine that a nobleman's wife or a person of great estate, by whom—judging by the usual motives of human conduct—much would be endured in order to provide an heir to the title or estate, the mother might elect to encounter the repeated risk of Cæsarean section until a son and heir was born.

These various questions however, which I have opened and not attempted to decide, may well be left to time and experience to settle; there is no discredit but rather merit attaching to this avowed uncertainty, for I hold that suspense of judgment and an open mind become a duty, while evidence is conflicting and experience accumulating.

THREE LECTURES ON SOME POINTS RELATING TO INJURIES TO THE HEAD.

Delivered at the Royal College of Surgeons of England.

By WILLIAM HENRY BATTLE, F.R.C.S.,

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LECTURE III.

MR. PRESIDENT AND GENTLEMEN,—At the termination of the second lecture I was considering the injuries to cranial nerves which sometimes accompany or follow fractures of the base; the seventh nerve was under discussion when the time expired, and notes of fifteen cases had been read, which indicated, amongst other points, the improved prognosis as to the recovery from facial paralysis that can be given when it is a late manifestation after these fractures. In nearly all it was also apparent that the hearing on the same side was impaired; usually this was shown at the time of the onset of the paralysis, but in three fatal cases the patients were unconscious until death. In fourteen other patients who presented signs of fracture of the middle fossa deafness was found, and was a cause of complaint; six developed it after hæmorrhage from the ear (it was found in two who complained when they regained consciousness, in two on the sixth day, and two on the ninth day); six after hæmorrhage, followed by watery discharge of varying amount and duration; two after epistaxis, in one of which watery discharge from the nose followed (both had hissing and other noises in the ears). As a rule the prognosis, as in paralysis of the portio dura, was better with regard to recovery if the deafness was of late onset. In many instances the membrana tympani was seen to be ruptured, but the

loss of hearing did not seem at all considerable, and did not give rise to complaint either then or later.

Mr. Leonard Bidwell has collected a series of 106 cases of fractured base, published in the columns of the *Lancet* from the first number up to the present date, and in fifteen of these there was facial paralysis. Two were fatal—one from arachnitis, the paralysis appearing on the fourth day; in the other it was noticed in a few hours, but nothing is recorded further. In one case the result is not mentioned; in four it is stated that the paralysis was permanent, and it came on the second, fourth, eighth (with paralysis of the fifth nerve), and thirty-fourth days (disease of mastoid process) after the accident. In eight the paralysis had gone or was improving at the time of the last note. In one it developed at once (lasting forty-one days); in two on the second day (in one of which paralysis of the sixth nerve accompanied, and did not afterwards improve); in the others it developed on the fourth, fifth, eighth, ninth, and tenth days, lasting for a period of fifty, ninety, fourteen, fifteen, and seventeen days respectively. The condition of the hearing is not given in all, but in some permanent deafness remained, though the paralysis of the portio dura disappeared. These cases also indicate the more hopeful prognosis when the onset of the affection is delayed. I do not propose to say anything about the cranial nerves other than those mentioned, for I can give no information beyond that contained in our textbooks, and more especially that in the excellent article on Injuries to the Head, in Holmes's *System of Surgery*, now edited by Mr. Hulke.

THE TEMPERATURE FOLLOWING SOME CASES OF INJURY TO THE HEAD.

The alteration of the normal temperature which is met with in some cases after the infliction of severe injury to the head, such as fracture of the base, is, I think, worthy of our consideration. In the larger number of instances this differs but little, if at all, from that following the infliction of an injury of corresponding magnitude to other important parts of the body. There is the depression which accompanies the shock so frequently seen in such cases, followed by a rise to 100° or 101°, then a fall again often below normal, and a rise to the usual normal line. But not infrequently the remainder of the observations indicates much nervous depression, and the record keeps below the normal at 97° or thereabouts for some days. If the injury have caused a scalp wound as well as a fracture of the base, even though this be but small, there is the possibility that such a wound may take on suppuration, and the temperature will then indicate the process. Meningitis may cause a change from the usual course, and lead to a fatal termination, accompanied by those well-known symptoms that indicate its progress. Then, again, the onset of erysipelas or pyæmia must be remembered as a possibility—and I am glad to be able to say "possibility," and not "probability;" for these diseases are certainly much less frequently causes of a fatal result after an injury than used to be the case. They are not, however, as yet completely banished from our surgical wards. There is also a rise of temperature on the second day to about 100° in some cases of laceration of the brain, and by the third day it is usually 101° or 102°, even when the accompanying injury does not include

Fig. 8.—Chart of a case of fracture of the posterior fossa of the skull, with optic neuritis, illustrating continued low temperature after fracture of the base.