glancing at the table, was normal. In both these cases chloroform had been given every chance, before pushing nitro-glycerine. Since then nitro-glycerine has been used in every case, with only one death, No. 14, where the treatment was commenced very late, perhaps too late.

The value of nitro-glycerine in Bright's disease commenced to exercise the minds of professional men about 1879. Murrell⁶ had discovered that this drug caused great arterial relaxation. Ringer⁷ wrote: "Nitro-glycerine is employed in cases of contracted kidney, to lower arterial tension; it relieves the distressing headache of Bright's disease, and is said to increase the quantity of urine in chronic parenchymatous nephritis." The diuretic effect had further been verified by Dr. Fancourt Barnes in a case of epispadias. Then arose in my mind the similarity of condition existing in patients suffering from puerperal eclampsia and those suffering from uraemic convulsions, and thus I was led to try nitro-glycerine for the former class of patients.

As regards the use of other drugs, the usual routine treatment was tried. Venesection was used once, in addition to which one was a placenta praevia where the bleeding was necessarily free. This case died. The hot pack was tried with No. 7, but the result was not encouraging. Chloral and bromide of potassium were used internally and per rectum, but failed. Saline injections, per rectum, were used once, and should, perhaps, prove valuable in later stages, especially following the complication of haemorrhage. Veratrum viride, which has been highly recommended recently, was not used.

In conclusion, whilst the results quoted above necessarily produced a great impression on my mind, yet the suggestions are not offered in a dogmatic spirit, but rather for the purpose of encouraging further investigation in this complex subject.

Finally, I would suggest that the scope of the use of nitro-glycerine hypodermically might be extended into the physician's domain. It is quite possible that this series, with its results, may be only one of those remarkable coincidences which occur from time to time. But should the consideration of them in any way tend to a more successful treatment of these painful cases, in which the joy that should come with morning is often turned into the sorrow of darkest night, my object will have been fully attained.

REFERENCES.

- ¹ *Medical Annual*, 1897, p. 496. ² *BRITISH MEDICAL JOURNAL*, 1904, vol. i, p. 709. ³ *Ibid.*, 1905, vol. ii, p. 715. ⁴ *Medical Annual*, 1898, p. 448. ⁵ *Ibid.* ⁶ *Lancet*, 1879, vol. i, p. 113. ⁷ *Handbook of Therapeutics*.

ON THE CAUSES OF INVERSION OF THE UTERUS.

By LOMBE ATTHILL, M.D.,

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IN the *BRITISH MEDICAL JOURNAL* for April 11th there appeared a communication from Dr. George Hall, of Stockton-on-Tees, in which he related a case of inversion of the uterus after parturition. A few days subsequently I received a copy of the report of the Rotunda Hospital from the Master, Dr. Hastings Tweedy, in which mention is made of a similar case. The nearly simultaneous occurrence of these cases attracted my attention, as I had in bygone days paid some attention to the subject of inversion, and endeavoured to find an explanation for its occurrence and the causes tending to produce this rare accident, for did it follow on pulling on the funis or on pressure applied to the fundus, it would be very common instead of rare.

In 1881 I read before the Dublin Obstetrical Society a paper on the subject¹ founded on a case in which inversion had been produced by the action of the uterus in its efforts to expel a sessile tumour which grew from the very centre of the fundus, and I stated that I doubted the correctness of the view commonly held that inversion rarely occurs except immediately after delivery, inasmuch as out of five cases of inversion which had come under my own observation only two had occurred as a sequence of parturition. In the other three it had been due to the presence of sessile tumours which had grown from the centre of the fundus. In former days when dilatation of the uterus mechanically was little practised, indeed hardly known, I have removed quite a large number

of pedunculated tumours from the uterine cavity, some so large as to compel me to remove them in sections, others protruding through the os, the pedicle having elongated so as to permit this, but never have I met with a pedunculated tumour which caused inversion. I therefore laid it down as a rule that for an intrauterine tumour to cause inversion it must in the first instance spring from the very fundus, and next that it be sessile; I further laid it down that in cases of inversion following on parturition the placenta was invariably found to have been attached to the central portion of the fundus. Further, so far as my own experience went, I came to the conclusion that fundal attachment was not alone the predisposing but was the only cause of inversion occurring.

I had during my long professional life—extending as it did over more than fifty years of active practice, including in it ten years' residence in the Rotunda Hospital, first as assistant and then as Master—introduced my hand very many times in cases of retained placenta, some of them very firmly adherent, and in no single case did I find the attachment anywhere except laterally, and in none of these was there the least tendency to inversion. I have often wished to have had some independent testimony on this point, but none that I am aware has been offered; therefore, on seeing the report of the two recent cases mentioned above, I wrote asking for information as to the site of the placental attachment in each case, and have received the following replies, for which I desire to thank the writers.

Dr. George Hall writes:

The placenta in my case was attached pretty nearly to the centre of the fundus uteri.

Dr. Arthur N. Holmes, late senior assistant, Rotunda Hospital, who had charge of Dr. Tweedy's case, writes:

The patient, a primipara, delivered herself normally. About fifteen minutes after the infant's birth the patient cried out, saying the pains were returning. A few minutes after, she having cried out again, the placenta was noticed bulging through the vulva. Then, placing my hand on the abdomen, I realized the absence of the fundus above the pubes, and immediately after complete inversion of the uterus took place. I then noted that the placenta had a fundal attachment, and was adherent by its centre.

Dr. A. W. Anderson (Dalbeattie, N.B.), who published particulars of a third case in the *BRITISH MEDICAL JOURNAL* for May 2nd, writes:

The placenta in my case was centrally attached, and was comparatively easily detached.

These three cases go a long way in confirming the opinion I enunciated in the paper referred to, and which was published in 1881—"that for inversion to occur immediately after parturition the placenta must be attached nearly centrally to the fundus"—but I have as yet seen no case reported confirming the remainder of the paragraph, in which I said that for it to occur under any other circumstances it must be "in consequence of the presence of a fibrous tumour springing from the fundus." I also pointed out that such never occurred except when the tumour was sessile. Perhaps some of the readers of the *BRITISH MEDICAL JOURNAL* may have seen cases bearing on this point.

The two classes of cases in which inversion occurs being analogous, so far as the site of attachment of placenta or tumour is concerned, the question to be solved is, Why does a sessile tumour springing from the very fundus, or a placenta attached there, predispose, if not actually cause, inversion of the uterus?

Any gynaecologist who uses with frequency the uterine sound must have been struck, as I often was, by the fact that, while the patients seldom feel any pain while it is being passed through the cervical canal, if that be skillfully done, they will cry out if the point of the uterus be pressed even gently against the fundus. Again, if fangle tents be used to dilate the cervical canal—and I used them very frequently during my long years of actual practice—they were borne without causing much discomfort for hours, and remained *in situ* till removed by the operator, provided they were so short as not to touch the fundus; but they would, if too long ones were used, soon induce pain and be expelled long before they had swollen sufficiently to dilate the cervix. I think from these facts it may be inferred that not alone is the centre of the fundus the portion of the uterine wall most

susceptible of irritation, but that very probably it is the centre from which the expulsive action of the uterus takes its origin, the further inference being that if a placenta be unduly adherent when it happens to be located at the fundus, or that a sessile tumour grew from the fundus, the uterus is stimulated to get rid of what has become a foreign body, and, failing to detach, this, becomes inverted in consequence of its own efforts.

Long before I retired from practice I became convinced that the late Dr. Robert Barnes, who was one of my most highly esteemed friends, was mistaken when, on the authority of Rokitsansky, he stated that the fibres of the uterus at the placental site are paralyzed and do not contract equally with the uterine fibres, and that so inversion occurs; nor can I agree with him that the "fundal zone" is the natural site for placental attachment. The number of times I have introduced my hand to remove an adherent placenta were very numerous, and in not one of these was the placenta situated at the fundus uteri.

I should be glad to think these remarks of mine may call the attention of practitioners to the subject of the causes of inversion of the uterus, and that the particulars of such cases as may be observed be published.

REFERENCE.

¹ *Dublin Journal of Medical Science*, vol. lxxii, 1881.

THE ABSORPTION OF OINTMENTS.

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In the selection of a topical application for use in cutaneous disorders the most important factors to be considered are those of protection and penetration. It is not a difficult matter to find an agent which fulfils the first requirement, but the last is a much more difficult proposition.

Until within the last few years, experiments made with the view of testing the rapidity with which substances were absorbed by the skin were confined for the most part to repeated quantitative examinations of the various excretions, especially the urine, immediately following the application of the medicament under trial. Aubert incorporated atropine in various ointments, and, after rubbing them on the surface of the skin, had his patients exercise. The perspiration from other parts of the body was then collected and examined. Another method consisted of the microscopic inspection, after sectioning, of skin which had been treated with mercurial salves for varying periods prior to excision. The minute globules of metal served as penetration indicators. Some time ago, while visiting Dr. P. G. Unna's laboratory in Hamburg, I undertook, at his suggestion, a series of experiments along this line, guinea-pigs and white rabbits being used as subjects for the tests.

In order to get more direct results, various tissue stains, in the form of aniline dyes, were employed. These were thoroughly mixed with diverse vehicles and applied to the bare skin, the hair having been carefully clipped off. In some instances friction was used, in others the fluid or ointment was simply painted or smeared on. After the lapse of a certain period, varying from fifteen minutes to several hours, the patch was excised under anaesthesia.

The pieces of tissue were at once blocked, frozen, and out, the sectioning being done in a direction parallel with the hair shafts and from below upward, in order to prevent the stain from being carried further into the tissues by the microtome blade. For the same reason the knife was cleaned with ether after each stroke. The sections were immediately placed in a filtered mixture of honey (10 0), glycerine (20 0), and water (70 0), later being mounted and examined in the same media. The use of vaselined rings on the slides prevented evaporation if the specimens could not be examined at once. Of the great number of different methods tried the one here given has proved the most satisfactory.

Only a few of the aniline dyes answered the required purpose. For oily and ethereal vehicles I have found scarlet (scharlach) best, and for spirituous ones, fuchsin.

The accompanying table represents the comparative

values in penetrative power of the substances most commonly employed.

Substance.	Stain.	Duration of Application.	Penetration.
Acid. carbolic. ...	Fuchsin	12 hours	Slight.
Alcohol	"	3 hours	Very slight.
Ol. olivae	Scarlet	4 hours	Considerable. Glands well tinted.
Ol. santali	"	4 hours	Fairly good.
Lanolin	"	5 hours	Slight.
Lanolin 1.0 } Ol. olivae 1.0 }	"	3½ hours	{ Good. Glands quite pink.
Ol. lini	"	4 hours	Slight.
Goose grease	"	3 hours	Excellent. Gland deeply stained.
Cetaceum	"	4 hours	Very slight.
Lanolin 9.0 } Cedar-wood oil 1.0 }	"	3 hours	Quite good.
Petrolatum	"	4 hours	Very slight.
Petrolatum, with friction	"	4 hours	Considerable.
Petrolatum 9.0 } Cedar-wood oil 1.0 }	"	3 hours	Fair only.
Adeps	"	3 hours	Excellent.
Adeps benzoïnatus ..	"	4 hours	Very good.
Adeps 9.0 } Cedar-wood oil 0.1 }	"	3 hours	{ Excellent. Gland well stained.
Ichthyol	"	4 hours	Fair only.
Ichthyol 2.0 } Ol. olivae 8.0 }	"	4 hours	{ Good. Glands well tinted.
Suet	"	3½ hours	Fair.
Ung. aquae rosae ...	"	5 hours	Fair only.
Ung. aquae rosae 9.0 } Cedar-wood oil 1.0 }	"	4 hours	{ Much better than ointment alone.
Ol. terebinthinae ...	"	3 hours	Considerable.

CONCLUSIONS.

Lard, simple or benzoïnated, and pure goose grease are the most quickly absorbed of all the substances tested. Petrolatum is a poor penetrant unless applied with friction. Lanolin, alone, is absorbed very slowly; mixed with a more fluid material, as olive oil, it readily enters the skin. The addition of a small amount of cedar-wood oil to an ointment considerably increases the rapidity of absorption.

ON RECENT ADVANCES IN THE SURGICAL TREATMENT OF SYPHILIS.*

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It is useful to review our knowledge from time to time, though it would seem difficult at first sight to tell anything new about syphilis. Its history has been studied for a longer time and with greater care than that of any other disease, because its sudden appearance in Europe occurred at a time when printing was becoming general and was coincident with a general revival of learning. The earliest records of the disease, therefore, were made by observant men capable of giving a detailed account of a condition which appeared to them to be new, whilst its occurrence as a pandemic drew immediate popular attention to the affection and called forth many references to it from the pens of non-medical writers. The interest thus aroused led surgeons to devote a special portion of their treatises to the subject of venereal disease, and when other subjects of equal importance were dismissed in the textbooks in a few paragraphs, venereal disease was often treated of at inordinate length. An enormous mass of literature has thus grown up around the subject, a mass which it is impossible now for any one to master, merely

* Abstract of a paper read at the annual meeting of the Medical Society of London, May 11th, 1908.