urethral fistulae, partial or complete obstruction of the urethra, chronic over-distension of the bladder, avulsion of the urethra, loss of the micturition reflex and persistent infection of the urinary bladder. Haematomata around the bladder and infection in the retropubic space may also occur.

As a sling operation is done as a rule only after a previous operation has failed to cure stress incontinence, the surgeon tends to pull the sling too tight, as he dare not fail to cure the condition by allowing it to be too loose. Efforts are being made at present to devise some means of measuring the tension required in individual cases, which varies with the resistance produced when the urethra is lifted upwards and forwards.

There is little doubt that whatever method of sling operation is performed the final result is produced by fibrosis around the operation area, which keeps the urethra in its new position. In cases in which the sling has had to be removed owing to suppuration around it the ultimate result is usually as good as if the sling was still in place.

In this respect it is interesting that good results are claimed both by Mulvaney,[9] who frees the bladder base and urethra through a suprapubic extra-peritoneal incision and does nothing else, and by Everard Williams,[10] and by Marshall Marchetti and Krantz,[11] who recommend a freeing of the urethra and bladder base in the same way followed by suture of the urethra, bladder base or lateral vaginal fornices to the periosteum behind the pubic bones, thus lifting up the urethra and reconstituting the posterior urethro-vesical angle.

This brief résumé of the modern operative treatment of stress incontinence demonstrates clearly that the problem has not yet been solved and will not be so until more is known of the dysfunction of the bladder which occurs in cases of stress incontinence.

REFERENCES

1. FISHER, O. D., and FORSYTHE, W. I. (1954), *Archives o Dis. in Children*, Oct., 461.
2. JEFFCOTE, T. N. A., and ROBERTS, H. (1952), *J. Obstet. Gynaec. Brit. Emp.*, **59**, 685.
3. ARDRAN, G. M., SIMMONS, G. A., and STEWART, J. H. (1956), *Ibid.*, **63**, 26.
4. MAIPAS, P., and JEFFCOTE, T. N. A. (1949), *Ibid.*, **56**, 949.
5. YOUSSEF, A. F., and MAHFOUZ, M. M. (1956), *Ibid.*, **63**, 19.
6. KEGEL, A. H. (1951), *J. Amer. med. Ass.*, **146**, 9.
7. ALDRIDGE, H. (1942), *Amer. J. Obstet. & Gynec.*, **44**, 398.
8. MILLIN, T., and READ, C. (1948), *Postgrad. med. J.*, **24**, 268.
9. MULVANEY, J. H. (1952), *J. Obstet. Gynaec. Brit. Emp.*, **59**, 711.
10. WILLIAMS, E. (1946), *Proc. R.S.M.*, **40**, 361.
11. MARSHALL, V. F., MARCHETTI, A. A., and KRANTZ, K. E. (1949), *Surg. Gynec. Obstet.*, **88**, 509.

Testosterone is a more popular form of therapy in Great Britain, but in the main it can be only palliative in its action, for size and duration of dose must be limited by fear of unwanted side effects. It is noteworthy, however, that Macafee (1954) has caused complete resolution of a lesion in the perineum with testosterone. X-ray induction of the menopause is of value only when surgery has already been undertaken, as the diagnosis must of necessity remain presumptive until the abdomen has been explored. There are two types of case where such treatment is indicated, first in the older woman in whom complete extirpation of ovarian tissue has been impossible due to technical difficulties, and secondly in the younger woman who has a recurrence of symptoms following conservative surgical intervention, and for whom radiotherapy is preferred to a further difficult surgical venture.

The aetiology of the condition has been discussed at length by many authors and so will be mentioned but briefly here. The main theories are:

1. Cullen's direct invasion theory, which most authors agree accounts for many cases of adenomyosis uteri, although there are some who believe the myometrium capable of forming both glandular and stromal cells.

2. Sampson's implantation spill theory, which, after a period of rejection, is now again being more widely accepted, particularly in view of the experimental evidence furnished by Scott and Te Linde to show that in monkeys menstrual endometrium can implant in the abdomen and give rise to endometriosis.

3. Iwanoff's serosal metaplasia theory has many supporters and ingenious explanations are offered to explain all the reported lesions by this one theory. However, there seems to be no convincing explanation why there is never any transitional form seen and why the metaplasia should be so focal in nature and not more generalized.

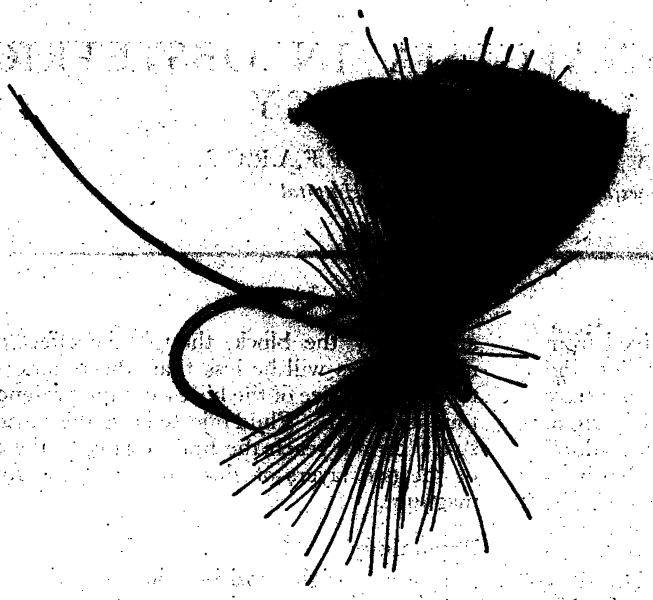
4. Halban's lymphatic theory has few adherents; although lymph nodes have been found with endometrial structures in them, they are not common.

Whilst endometriosis is not a true neoplasm, it bears many close resemblances to one and therefore it might not be unreasonable to suppose that the spread of viable endometrial cells to ectopic situations could occur in a number of different ways and that, in differing circumstances, any one or more of the above theories might account for the various lesions of endometriosis.

I wish to thank Mr. A. J. Bailey for preparing the photomicrographs from material belonging to the Department of Pathology, Chelsea Hospital for Women.

BIBLIOGRAPHY

GAINEY, H. L., KEELER, J. E., and NICOLAY, K. S. (1952), *Amer. J. Obstet. Gynec.*, **63**, 511.
GOODALL, J. R. (1944), 'A Study of Endometriosis,' 2nd edition, Lipincott, Philadelphia.
HASKINS, A. L., and WOOLF, R. B. (1955), *Amer. J. Obstet Gynec.*, **5**, 113.
KARNAKY, K. J. (1954), *Mississippi Valley med. J.*, **76**, 187.
KELLY, F. J., and SCHLADEMAN, K. R. (1949), *Surg. Gynec. Obstet.*, **88**, 230.
MACAFEE, C. H. G. (1954), *J. Obstet. Gynaec. Brit. Emp.*, **61**, 349.
MEIGS, J. V. (1949), *Surg. Gynec. Obstet.*, **89**, 317.
NOVAK, E. (1953), 'Gynecologic and Obstetric Pathology,' 3rd edition, Saunders, Philadelphia, p. 222.
NOVAK, E. (1956), *Obstet. Gynec. Survey*, **11**, 122.
PARK, W. W. (1949), *J. Obstet. Gynaec. Brit. Emp.*, **46**, 759.
PHILLIPS, R. B. (1934), *Ibid.*, **41**, 165.



THE MAYFLY

Deadly on the surface

Unlike the trout, which at least sees the surface agent leading to its destruction, the poor pathogen of the oro-pharynx cannot possibly be aware of the steady stream of Streptet laden saliva that so swiftly and surely destroys him. Each Streptet is a finely tied cast of the three most useful topical antibiotics—Zinc Bacitracin, Polymyxin B Sulphate, and Neomycin Sulphate. Together these antibiotics provide a safe and effective method of fishing out a wide range of oral pathogens.

STREPTETS TROCHES

Packs: Bottles of 20 troches

The word 'Streptets' is the registered trade mark of

JOHN WYETH AND BROTHER LIMITED

CLIFTON HOUSE, EUSTON ROAD, LONDON, N.W.1

Wyeth

S.1

With the patient in the left lateral position, a skin wheal with any local analgesic is made over the sacral hiatus, but it should be kept as small as possible in order not to obscure the landmarks of the sacral cornua. A 16 or 17 SWG needle is then passed through the wheal at right angles to the skin until it is felt to impinge on the anterior wall of the sacral canal. It is then slightly withdrawn and reinserted parallel to the plane of the body of the sacrum and advanced for a distance of 15 mm. A distinct snap is sometimes felt as it traverses the sacro-coccugeal ligament. A nylon catheter is then passed through the needle and the needle is withdrawn over it. The catheter is connected to a syringe or a reservoir of analgesic solution and an injection of 8 cc. is made into the caudal canal. The customary pause to rule out accidental spinal block is then made. After five minutes wait the patient is asked to move her legs. If motor power is unaffected then a further injection of 22 cc. is made and within 20 minutes labour will become pain-free. The analgesic of choice is 1½% Metycaine and this is put up in sterile flasks containing 100 cc. to which the catheter is connected by means of a syringe and a three way tap. The whole outfit with the exception of the flask can be autoclaved and connection is made to the flask by peeling off a protective cap and plunging the connecting needle through this. Further injections of 20 cc. are made every 30 - 40 minutes. Provided that the solution does not reach higher than the tenth thoracic vertebra labour will be painless and uterine contractions unaffected and there will be no harmful effect on the foetus whatever.

Effects

The course of labour will be altered by a lengthening of the second stage as the normal impulse to push out the foetal head will not be appreciated by the analgesic patient and in a primipara it will be necessary to extract the baby with forceps, but with the relaxed perineum forceps extraction is considerably easier than it would otherwise be, and if episiotomy is necessary it will be painless. In a multipara who has had a previous delivery under light general anaesthesia, forceps are rarely necessary as the mother knows what to do when she is told to bear down. The advantages of the method are summarized in the accompanying table.

Disadvantages

The somewhat complicated technique requires the services of a trained anaesthetist, and failure to achieve analgesia cannot be ruled out owing to possible abnormalities of the sacrum or even inability to locate the hiatus owing to obesity of the patient. Repeated blood pressure readings are necessary and a hand must be kept on the fundus of the uterus in order to recognise the onset of a contraction. Gross anaemia, low blood pressure, skin sepsis over the sacrum and a history of rapid delivery at a previous labour are contra-indications. Errors in technique include accidental puncture of the dura mater, insertion of the needle posterior to the sacrum (which can be recognized by keeping a finger over the sacrum during the injection and feeling the occurrence of surgical emphysema) and the injection of too great a quantity of solution with resultant paralysis of the motor nerve supply of the uterus followed by uterine inertia. The safest form of treatment of this complication for mother and child is an immediate Caesarean section.

conjunction with other methods, such as cytological study, which are available to us. The earlier the lesions being dealt with, the more difficult the diagnosis becomes, and every aid is worthy of exploitation.

The possibilities of colposcopic study of the cervix have only been outlined. It is not only possible to diagnose early squamous cell carcinoma, but also in certain circumstances to detect adenocarcinoma of the endocervix. The method is also useful in eliminating benign lesions from the field of controversy and enables many conditions to be treated in the out-patient department without the necessity of admission for biopsy. The use of the instrument is not confined to inspection of the cervix alone, but can be extended to lesions of the vagina, vulva and urethra.

The major drawback to the use of the colposcope is the time taken in learning its capabilities. It is not an instrument for occasional or random use. Enough has been said, however, to indicate that the method is of real value and that effective trial should be given to this instrument in centres in this country where its usefulness can be properly studied.

Acknowledgment

I would like to acknowledge my debt to St. Bartholomew's Hospital, where the facilities to undertake this study were provided.

BIBLIOGRAPHY

GANSE, R. (1953), 'Kolpophotogramme zur Einfurhung in die Kolposkopie,' 2 vols., Akademie, Berlin.
HINSELMAN, H. (1954), 'Colposcopy,' W. Girardet, Wuppertal-Elbertfield.
MESTWERDT, G. (1953), 'Atlas der Kolposkopi,' Gustav Fischer Verlag., Jena.

Bibliography continued from page 553—R. C. Percival, F.R.C.S., F.R.C.O.G.

BIBLIOGRAPHY

BEST, P. W. (1931), *J. Amer. med. Ass.*, **97**, 1521.
CHARLWOOD, G. P., and CULINER, A. (1955), *J. Obstet. Gynaec. Brit. Emp.*, **62**, 555.
CUMMIN, R. C. (1955), *Lancet*, July 9, p. 68.
CURTIS, A. H. (1946), 'Textbook of Gynaecology,' 5th edition, Philadelphia, p. 560.
HIRST, B. C., and KNIPE, N. (1908), *Surg. Gynaec. & Obst.*, **7**, 456.
JEFFCOATE, T. N. A. (1955), *J. Obstet. Gynaec. Brit. Emp.*, **62**, 214.
LAWSON, J. G., and CHOULER, F. J. G. (1955), *Ibid.*, **62**, 951.
LUND, J. (1955), *Ibid.*, **62**, 170.
McINROY, R. A., and KELSEY, H. A. (1955), *Ibid.*, **62**, 428.
MURLEY, A. H. G. (1956), *Lancet*, June 23, p.994.
NOVAK, E. (1947), *Gynaec. & Obstet. Path.*, 2nd edition, Philadelphia, p. 437.
PEARSON, A. C. (1950), *Proc. Roy. Soc. Med.*, **43**, 443.

2 p.m. ' The Coronary Circulation.'
Dr. C. S. Beck, Cleveland (Chairman).
Dr. D. E. Gregg, Washington.
Dr. Geoffrey Dawes.

4 p.m. Round table discussion with questions.

June 5: *Wednesday*

10 a.m. ' The Pulmonary Circulation.'
Professor J. McMichael (Chairman).
Dr. Andre Cournand, New York.
Professor C. V. Harrison (Pathology)
Dr. Stig Radner, Sweden (Radiology)

2 p.m. Occasional papers.

June 6: *Thursday*

10 a.m. ' Cerebral Circulation.'
Dr. MacDonald Critchley (Chairman).
Professor S. Kety, Philadelphia.
Professor Alajouanine, Paris.
A Neuro-surgeon.

2 p.m. ' Splanchnic Circulation.'
Professor Sir James Learmouth (Chairman).
Dr. Stanley Bradley, New York.
Dr. S. Sherlock.
Professor R. Milnes Walker.

June 7: *Friday*

10 a.m. ' The Peripheral Circulation.'
' Circulation through the limbs,' Professor Barcroft.
' Vascular Innervation,' Professor Paton.
' Pathology of vessels,' Professor Dible.
Professor C. Rob.

2 p.m. Participants may visit various hospitals or travel to Folkestone.

June 8: *Saturday*—At Folkestone

10.30 a.m. Sir Geoffrey Keynes (Chairman).
Harvey's birthplace, Professor T. Hare.
Harvey at Cambridge, Sir Lionel Whitby.
Harvey at Padua, Professor A. Cawadias.
Harvey the Scientist, Dr. W. R. Bett.