

Contraceptive Devices and Endometrium

Intrauterine contraceptive devices do not require any co-operation from the patient, there is no repetitive expense, and they do not interfere with the sexual act. The risk of side-effects such as bleeding, spotting, abdominal cramps or pain, and expulsion of the device is being steadily reduced by improvements in the design of these devices and the materials from which they are made. The mechanism by which they prevent gestation is still not clearly understood. It is known that they have no effect on the migration of spermatozoa or on ovulation, and they do not cause an appreciable inflammatory reaction in the endometrium. Theories that have been put forward to explain the action of intrauterine devices include interference with normal motility of the Fallopian tubes or the uterus¹ and failure of implantation of the fertilized ovum as a result of stimulation of the endometrial glands.² H. H. Hall and M. L. Stone³ suggest that the fertilized egg does not nidate as a result of the mechanical action of the device, which presses against the walls of the uterus and separates them. Support for this theory is provided by reports of the occurrence of ectopic pregnancies in women fitted with contraceptive appliances.⁴ D. A. Jessen and his co-workers⁵ suggest that the rings act as foreign bodies which cause local inflammation or prevent implantation by mechanical action. R. R. Chaudhury and T. K. Tarak⁶ have shown in experiments on rats that intrauterine sutures prevent implantation in the treated horn of the uterus, whereas gestation occurs in the contralateral horn. These sutures had no effect on the secretion of pituitary or ovarian hormones.

J. R. Willson and his colleagues⁷ have described histological changes in the endometrium, and in particular in the endometrial stroma, in women wearing polyethylene Margulies spirals. These changes include an increase in tissue fluid and striking alterations in the vascular pattern—namely, proliferation of delicate thin-walled blood or possibly lymph vessels in the superficial layers with formation of thin-walled sinuses. There was no marked inflammatory reaction. Similar changes in the endometrium of women wearing Gräfenberg rings have been described by Robert Meyer.⁸ Willson and his associates suggest that these tissue changes are the result of the pressure the device exerts on the wall of the uterus. The contraceptive action cannot, however, be explained by these variations in vascular pattern. Another finding in this study was that the histological dating of the endometrium in women fitted with spirals lagged considerably behind the normal cycle. It is tempting to assume that the fertilized ovum fails to implant because it reaches the uterus before the endometrium is ready to receive it. But it is equally possible that the extent to which the stromal development is altered makes it unsuitable for nidation.

Unfavourable long-term effects are not likely to result from the use of these devices. Polyethylene and other plastic

materials are inert when in contact with healthy mucous membranes. The cyclical shedding of the endometrium precludes changes due to prolonged pressure and irritation. Cellular changes suggestive of malignant degeneration have so far not been described, but J. E. Ayre⁹ has warned against the use of radio-opaque markers, as these may be potential carcinogenic agents.

Training of Doctors

Future generations may come to regard the past two years as one of the most influential periods in the whole history of medical education in Britain. Few aspects or specialties have escaped scrutiny. New curricula for the undergraduate course have been introduced. The College of General Practitioners has produced its plan for special vocational training.¹ And, as the recent series of articles by the *B.M.J.*'s special correspondent has shown, the progress in postgraduate education has acquired a momentum which nobody could have predicted even five years ago. Sir George Godber has described it with some justification as "the most striking development in the National Health Service."² A new journal devoted to medical education—the official organ of A.S.M.E.—is to be published by the B.M.A. in association with the *British Medical Journal*,³ and the first number is due out next month. The Third World Conference on Medical Education is to be held by the World Medical Association at Delhi in a week's time. Now too the first chair of medical education in Britain has been established at Edinburgh, and the appointment of Professor A. S. Duncan⁴—a distinguished contributor to the subject—will be warmly welcomed.

Some of this impetus in medical education has come from the setting up of two expert committees studying the subject—a Royal Commission and a special committee of the G.M.C.—which are at present receiving evidence from all over Britain. But some is also due to the energy of individual doctors or corporate bodies spontaneously making concrete proposals for reform. In the context of vocational training the recent work of some of the Colleges is admirable. We have already noted the proposals by the College of Pathologists for the training of pathologists and the recognition of laboratories,⁵ and at page 1192 of this week's *B.M.J.* we print the report of a conference held last week at the Royal College of Physicians. Sponsored by the six Royal Colleges, the conference was a broadly based one whose invited participants represented virtually all the organizations concerned with specialist training—and it also included six representatives of hospital junior staff.

It was clear from the discussion at the conference that, though great progress had already been made in postgraduate educational programmes, organized courses of vocational training and a satisfactory career structure for junior doctors would be indissolubly linked in the future. Thus, as two speakers from the Ministry of Health pointed out, only a third of registrars will at present become consultants. Those who fail to reach this grade find difficulty in obtaining a satisfying hospital career. One solution of the problem of many registrars moving from one unsuitable training post to another—a "non-system," in one contributor's words—

¹ Allen, E. S., and Brown, W. E., *J. Ark. med. Soc.*, 1964, 61, 141.

² Amreich, I., *Ciba Symp.*, 1963, 11, 13.

³ Hall, H. H., and Stone, M. L., *Amer. J. Obstet. Gynec.*, 1962, 83, 683.

⁴ Ramkisson-Chen, R., and Kong Ta-ko, *Brit. med. J.*, 1966, 1, 1297.

⁵ Jessen, D. A., Lane, R. E., and Greene, R. R., *Amer. J. Obstet. Gynec.*, 1963, 85, 1023.

⁶ Chaudhury, R. R., and Tarak, T. K., *Brit. med. J.*, 1965, 1, 31.

⁷ Willson, J. R., Ledger, W. J., and Andros, G. J., *Amer. J. Obstet. Gynec.*, 1965, 93, 807.

⁸ Meyer, R., quoted in Gräfenberg, E., *Geburtenregelung*, 1928, p. 50. Kurt Bendix, Berlin.

⁹ Ayre, J. E., *Industr. Med. Surg.*, 1965, 34, 393.

¹ *Brit. med. J.*, 1966, 2, 251.

² *Ibid.*, 1966, 2, 247.

³ See letter at p. 1202.

⁴ See also p. 1211.

⁵ *Brit. med. J.*, 1966, 2, 67.