EXPERIENCE WITH A NEW COPPER DEVICE

(Modified Merchant's Coil)

by

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SUMMARY

Encouraged by the earlier report of this new copper I.U.D., a trial with improved design was carried over a period of one year. This is a copper I.U.D. made of polyethylene with copper wire wound around its major surface. The diameter of the coil is 17.5 mm. The shape of the I.U.D. is still the same as its original design viz. circular device with two ends overlaping each other instead of being in opposition.

There were 170 interval insertions and 30 post M.T.P. insertions with 2400 woman months of use. The data was analysed by the statistician in a way described by Tietze and Lewis using life table method. There were no accidental pregnancy until 12 months of use. The expulsion rate at 6 months was 4 and 6.6 at months. The removal for bleeding and pain were also small viz. 4.00 at 6 months and 6.43 at 12months. The continuation rate at 12 months was 78.1 after 2400 woman months of use. The cervical cytology was done in 150 cases and did not show any evidence of moderate or severe dysplasia.

Introduction

The third generation I.U.D. with incorporation of metals have greatly contributed to increased I.U.D. acceptance. Of the several methods that were tried copper was found to have maximum anti fertility effect. The modified circular copper I.U.D. developed by Dr. Merchant was evaluated by us.

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The prerequisites basically considered and combined in planning the new design are simplicity of introduction, efficacy, reversibility and avoidance of side effect. The basic design is formulated from low design polythelene. It is circular in shape having a diameter of 17.5 mm. and at one spot in the circle there is a breach in the continuity where two ends overlap for a distance of 3.00 mm. The thickness of the ring is 1.8 mm. This ensures easy linear introduction with even a thin inserter (with a diameter of only 3.6 mm.). The overlap is believed to assist reten-

tion, avoid perforation, and adopt to the uterine cavity well during its contractile activity. The majority of ring bears a copper wire wound round it which has a surface area of 241 mm. square. For easy removal the I.U.D. bears a 0.25 mm. nylon cord at one end.

Material and Methods

The study was conducted at B. Y. L. Nair Ch. Hospital and T.N. Medical College, Bombay from January 1982 till December 1983. The data was reported on 200 women whose complete records were available. In the present series 170 (85%) were interval insertions while 30 (15%) were post M.T.P. The post M.T.P. insertions were carried out 6 weeks after the evacuation while in interval insertions 6 weeks after delivery.

Before I.U.D. insertion, history was elicited and an examination was performed to exclude recent pelvic inflammatory disease, menorrhagia, intermenstrual bleeding, vaginal infection and recent septic abortion. Follow up examinations were scheduled at 1, 6 and 12 months after insertion and yearly thereafter. Data were analysed computing life table event rates as described by Tietze and Lewit (1973).

Results

Socioeconomic and Demographic Characterisms

The majority (67%) of the women were 20-30 years of age, 43% of the cases were nulliparous and 57% were of para 1 to 4. Majority (72%) were Hindu's, 15% were Muslims and 11.5% were Christians.

Event Rates

Event rates computed as per life table analysis method by Tietze and Lewit by woman months of use are as shown in Table I.

There were no pregnancies reported during the period of study.

The expulsion rate at 6 months was 4.00 which increased at 12 months to 6.6. This type of use related termination represented 6.76% of the cases terminating, the use of the devise upto 12 months.

Removals

There was an increase in the removal rate for bleeding and pain from 4.00 at 6 months to 6.43 at 12 months. There were no removals for any personal reasons. The removal rate for planned pregnancy at 6 months and 12 months was 3.9 and 6.00 respectively Table I.

TABLE I

Tet Cumulative Termination Rates in the Present Series

	6 months	12 months
Accidental pregnancy	—	—
Expulsion	4.0	6.6
Removal for bleeding/pain	4.0	6.43
Medical reasons	0.65	3.75
Planted pregnancy	3.9	6.0
Other personal reasons	—	—
	12.55	22.78
Continuation rate	88.3	79.1

TABLE III

Net Rates of Events as Compare with Other Series

Events	Tatum (1972) (USA)	Zipper (1977) (Chile)	Cu T (1974) (K. T. Virkar)	Ours Series (1979)	Ours Series (1983)
Pregnancy	1.50	1.70	2.00	—	—
Expulsion	8.40	3.40	4.00	7.3	6.76
Removed for bleeding/pain	10.00	2.60	18.6	7.2	6.63
No. of insertions	2678	847	176	137	200
Woman months of use	13117	7697	2675	1093	2400
Total event rate	25.90	10.90	36.2	33.5	35.33
Continuation rate	74.10	89.10	63.8	66.5	79.1

Table IV shows the net event rates in comparison to other series viz. those of Tatum *et al* (1972). Zipper *et al* (1977) etc. Virkar *et al* (1974) etc. All these workers had used Cu T in their study. The new devise had performed well in comparison with Cu T. Even as comparison with our own series in 1979, the new modified devise was adopted well. The higher continuation rate of 79.1 now (1983) as compared to 66.5 (1979) speaks for itself.

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References

1. Ambiye, V. R. and Merchant, R. N.: Paper presented at 6th I.F.R.P. Conference 1979.
2. Tatum, H. J.: Am. J. Obstet. Gynec. **112**: 1001, 1972.
3. Tietze, C., Lewit, S.: Studies in Family Planning, New York, The Population Council, Vol. 4, No. 2: 35, 1973.
4. Virkar, K. and Parulkar, M.: J. Obstet. Gynec. India. **24**: 332, 1974.
5. Zipper, J., Medel, M., Goldsmith, A. and Edelma, D. A.: J. Reprod. Medicine. **18**: 95, 1977.

See Fig. on Art Paper IV