ENDOMETRIAL REACTION WITH LONG USE OF INTRA-UTERINE CONTRACEPTIVE DEVICES (7—9 YEARS)

By

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The world wide interest in intra-uterine contraception has appeared recently. Since then, devices of various shapes, material and size have been tried for conception control and their effects have been studied.

The body of the uterus is exceptional with regard to stimulation of its contractile activity in an effort to reject any foreign body and correspondingly it attempts to expel the IUCD. When the uterus fails to do so, a more or less continuous mechanical irritation is set in. The IUCD may as well increase indirectly the sensitivity of the endometrium to the action of oestrogens producing a state of local hyperoestrinism (1). Both these factors acting together for several years may produce histopathological endometrial tissue changes. Numerous studies have been performed on such local reaction but all reported on relatively short term use of the devices. Actually the true state of affairs concerning the endometrial changes and their possible serious consequences cannot be truly evaluated except after studying the effects of the long term use of IUCD.

The aim of this work is to study such endometrial reactions after loop insertion for a long period ranging from 7 to 9 years.

MATERIAL & METHOD

Cases were selected from family planning clinics in Cairo. We only included in our series those where the duration of insertion was quite a long term ranging from 7—9 years.

Endometrial currettings were obtained from 71 women at the two phases of their menstrual cycles. They were all in the active reproductive period ranging from thirty to forty years of age, and had a Lippes loop size c-30 mm. inserted.

Specimens were fixxed in 10% formalin. Paraffin sections were stained with Haematoxylin and eosin. The biopsies were all obtained at the time of removal of the IUCD.

RESULTS

Various histopathological changes were observed in the specimens obtained. The general incidence of such abnormal findings with the long term use of the device was quite high (74. 65%). (Table 1).

TABLE 1

Incidence of Various Histopathological Changes

No.	Pathological Diagnosis	No. of Cases	Percentage
1	No pathological change	18	25.35
2	Chronic Endometritis	39	54.95
3	Stromal haemorrhage	32	45.07
4	Cystic glandular hyperplasia	17	34.84
5	Stromal fibrosis	15	12.12
6	Stromal hyperplasia	8	11.25
7	Angiomatoid formation	4	5.63
8	Atrophy (localized)	4	5.63
9	Squamous metaplasia	3	4.22
10	Pregnancy	1	1.40

Chronic Endometritis (54.95%).

Diffuse infiltration of the stroma with lymphocytes and plasma cells was found in 39 cases. No leucocytic infiltration was present (Fig. 1).

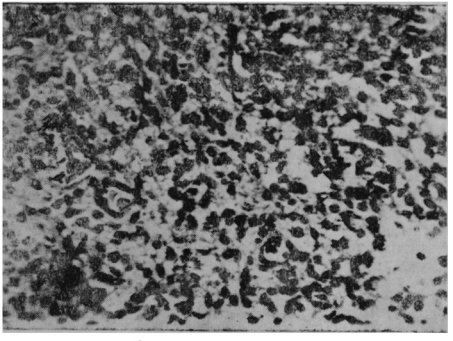

Fig. 1.—Chronic Endometritis.

Stromal Haemorrhage (45.07%).

In 32 cases, massive stromal haemorrhage affected many areas of the endometrium and was not limited to the site of contact with the loop (Fig. 2).

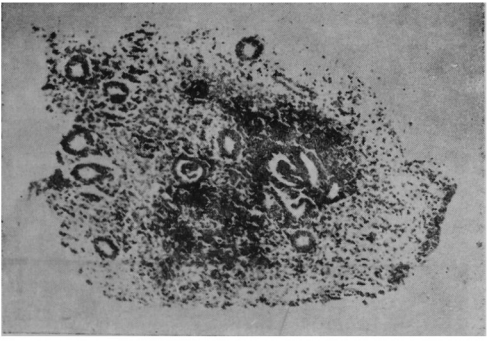

Fig. 2.—Stromal Haemorhage

Cystic Glandular Hyperplasia (23.84%).

Cystic glandular hyperplasia was diagnosed in 17 cases. Fifteen showed the picture of typical hyperplasia with marked disparity in the size and configuration of the glands (Fig. 3). Two cases were atypcial demonstrating adenomatoid proliferation of the endometrial glands, their lining epithelium showed increased mitosis. Mitotic activity was also found in the stroma which was compact looking and abundant (Fig.4).

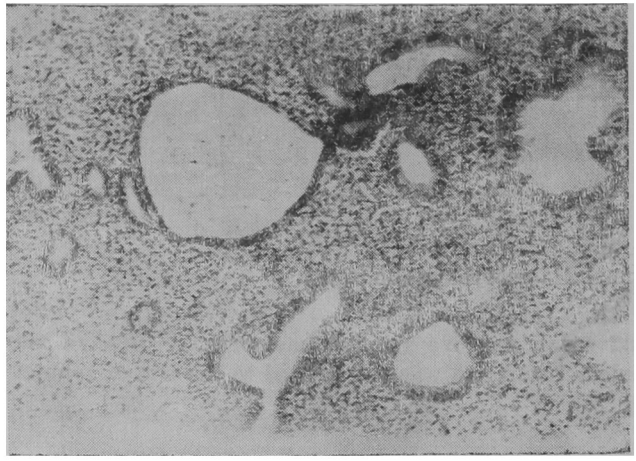

Fig. 3.—Cgstic Glandular Hyper plasia

Fig. 4.—Adenomataid Proliferation of Endometrial Glands

Stromal Fibrosis (21.12%).

A marked fibrosis affecting nearly the whole stroma was found in 15 cases. The fibrous tissue was encircling the endometrial glands without involving them (Fig. 5—6).

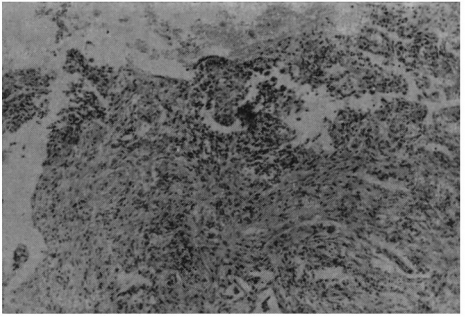

Fig. 5.—Stromal Fibrosis.

Fig. 6.—Stromal Fibrosis.

Stromal Hyperplasia (11.25%).

In 8 cases, the endometrium showed striking stromal activity, with an unusal mitosis and some nuclear hyperchomatosis (Fig. 7).

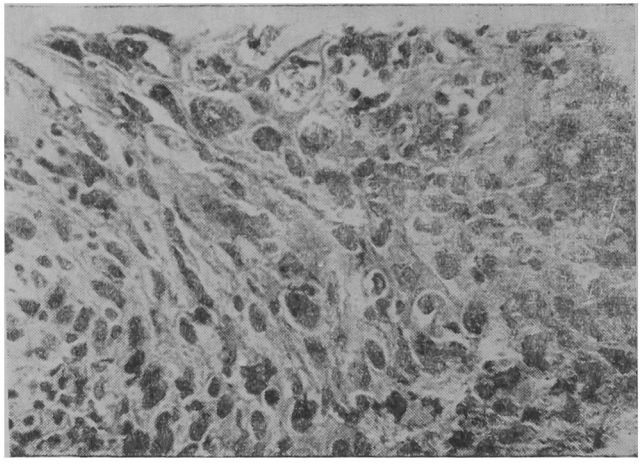

Fig. 7.—Stromal Hyperplasia.

Angiomatoid Formation (5.63%).

This was present in 4 cases. Extreme congestion was apparent giving the blood vessels an angiomatoid appearance (Fig.8).

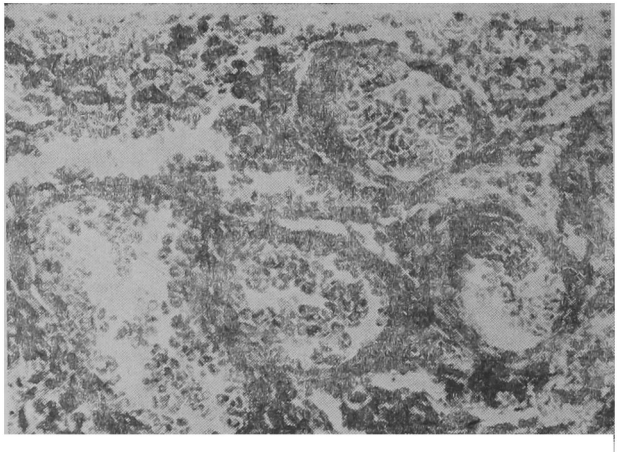

Fig. 8.—Angiomatoid Farmation.

Atrophy (5.63%).

In 4 cases atrophy was limited to the area of contact with the device (Fig. 9).

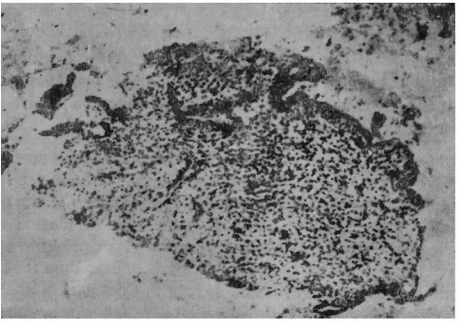

Fig. 9.—Endometrial Atrophy.

Squamous Metapiasia (4.22%).

Three cases showed mataplasia that involved the stroma and the glands filling their lumen. The squamous cells were well differentiated in (Fig. 10).

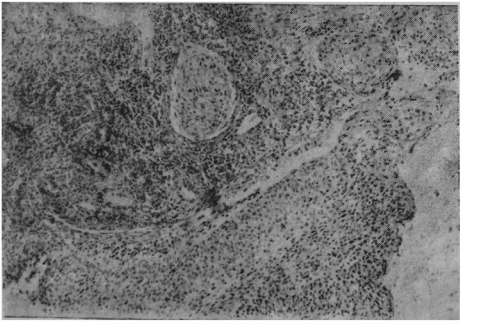

Fig. 10.—Squamous Metaplasia.

Pregnancy (1.40%).

A single case of pregnancy was diagnosed only through biopsy. The patient presented with irregular uterine bleeding which necessitated removal of the device. The endometrium showed young intact chorioni villi. It is intereseting to note that bleeding stopped and pregnancy continued.

DISCUSSION

The high incidence of abnormal histopathological changes in this study can be explained by the unusual long druation of use of IUCD ranging from 7—9 years.

Diagnosis of chronic endometritis in such cases presented some difficulty because the presence of inflammatory cells in the endometrium is a normal physiological occurrence at a specific stage of the menstrual cycle (Moyer and Mishell)[2]. The identification of plasma cells and lymphocytes were the criteria for diagnosis. The incidence of chronic endometritis in this series (54.95%) is much higher than that reported by Tamada and Maruyama[3], Israel & Hugh[4], Corfman & Sheldon[5] and Moyer & Mishell[2]. We could not specify whether such endometrial infiltration by lymphocytes and plasma cells represents a true bacterial infection or a mere sterile reaction to the foreign body.

The generalised and extensive stromal fibrosis detected was proportional to the duration of insertion, the longer duration the more fibrosis. Corfman & Sheldon[5], Wynn, & Bonney et al., reported a lower incidence of fibrosis due to the shorter duration of insertion.

The stromal haemorrhage and angiomatoid formation detected cannot be explained merely as a result of pressure because it was massive and not limited to the contact areas. Sami et al., described less marked haemorrhage with the devices. These changes may be explained by a possible alteration in fragility and permeabiity of the endometrial blood vessels, due to a possible histamine liberation through the mechanical action of the device . Histamine has also an oestrogen like action and contributes to the production of such vascular changes as well as to the occurrence of the high incidence of cystic glandular hyperplasia in this study. Tamada and Maruyama' reported a high incidence of hyperplasia while Leet et al., found a low incidence not exceeding 0.2 per cent. The occurrence of atypical hyperplasia of the adenomatoid type, together with stromal hyperplasia and squamous metaplasia indicate further endometrial activity due to the prolonged action of the loop.

It is interesting to note that premalignant changes and even epidermoid carcinoma have been induced in rats by Corfman & Richard by plastic and stainless steel IUCD.

CONCLUSION

The presence of an IUCD for several years may lead through its mechanical and possible local hormonal action to various pathological changes indicating endometrial irritation and activity.

It is therefore advisable that women wearing the IUCD must be subjected to periodic pelvic examinations with routine papanicolaou's smear and even endometrial biopsy if needed. Removal of the device with a time of rest is recommendd to avoid its long term use with its possible untoward endometrial changes.

SUMMARY

1. Seventy-one endometrial biopsies have been taken from women wearing the IUCD for a long term ranging from 7-9 years.

2. Chronic endometritis was present in more than half of the cases.

3. Stromal haemorrhage and angiomatoid formation appeared in abundance.

4. Stromal fibrosis was marked and generalized.

5. A typical adenomatoid hyperplasia, stromal hyperplasia and squamous metaplasia were present indicating extensive and prolonged endometrial irritation and activity.

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