STUDY OF POSTRADIATED OVARIES AND UTERI

by

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Creation of artificial menopause by radiation in cases of benign bleeding was an accepted line of treatment in gynaecological practice about a decade ago. Now-a-days most of these cases are tackled by surgery. This has been possible by the modern methods of managements by which a bad risk patient can be made fit for surgery. Surgery has been accepted as a better method of management because of the following reasons.

(a) Severe menopausal symptoms and psychological changes after radiation castration.

(b) Recurrence of bleeding per vaginam due to some specific pathological changes in the ovaries, uterus and endometrium after a lapse of 6 to 12 years. The pathological changes may occur in the benign conditions for which deep x-ray castration was done or they may be absolutely new conditions in the genital organs which were not present before.

The object of the present study is to observe the ovarian, uterine and endometrial pathology in these cases.

Due to severe bleeding per vaginam, after 6 to 12 years of radiation, in all the cases total hysterectomy with bilateral salpingo-oophorectomy was performed and the ovaries, uteri and endometrium were subjected to pathological study. It may be stated that pre-radiation endometrial biopsy had been done in all cases and there was no evidence of malignancy.

Materials for Study:

Total number of cases ..	14
Deep X-ray sterilisation	6–12 years ago

Indications for deep X-ray sterilisation:

Dysfunctional uterine bleeding	8
Fibroids	4
Endometriosis	2

Reasons for withholding surgery:

Obesity and hypertension ..	6
Severe hypertension and myocardial insufficiency	3
Hypertension and diabetes ..	3
Patient not agreeing to surgery	2

Histological study of ovaries:

Multiple corpora albicantes with complete absence of follicles ..	7
Atrophic changes in the ovaries with diffuse fibrosis ..	5
Diffuse stromal hyperplasia ..	2

Histological study of endometrium:

Atrophic endometrium ..	9
Cystic glandular hyperplasia ..	1
Hyperplastic endometrium ..	3
Adenocarcinoma	1

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Study of the changes in the different groups of benign conditions for which deep X-ray sterilisation was done.

(A) Fibroid group:	
Cellular fibroid with sarcomatoid change and hyperplastic endometrium	1
Fibroid with hyaline degeneration with hyperplastic endometrium	1
Remnants of fibroids in nodular form with excess of fibroblasts and atrophic endometrium ..	2
(B) Endometriosis group;	
No evidence of endometriosis, bleeding from atrophic endometrium	2
(C) Dysfunctional uterine bleeding group:	
Atrophic endometrium ..	5
Cystic glandular hyperplasia ..	1
Hyperplastic endometrium ..	1
Adenocarcinoma	1

Multiple corpora albicantes and atrophic changes in the ovaries were the commonest findings. (Fig. 1) Stromal hyperplasia of the cortex was present in two cases. No Oöcytes, primordial or mature Graafian follicles, were observed. Though Robinson (1927) regarded the amenorrhoea resulting from x-ray sterilisation as being due to the persistence of corpus luteum tissue which becomes dominant after the destruction of the mature follicles, no active corpus luteum tissue could be detected in these cases. Hyalinization of the stroma is a significant findings is post-radiated ovaries. (Fig. 2).

Morrison and Woodruff (1964) suggest that thecoma arises from hyperplastic ovarian stroma, possibly going through a transitional stage of diffuse stromal thecomatosis and demonstrating occasional lutenization. In the two cases of stromal hyperplasia the stromal cells were grouped in bundles and whorls. No lipid laden cells were observed in these clusters of stromal tissue. The case of adenocarcinoma did not have ovarian stromal hyperplasia, on the contrary the ovary was atrophic. It is conceived that perhaps stromal hyperplasia has no direct relationship with endometrial carcinoma. Roddick and Greene (1957) postulated that stromal hyperplasia is observed in women who did not have endometrial carcinoma as well as in some of those who did. Shippel (1955) thought it to be an end result of the "hyperthecosis syndrome".

One case of fibroid underwent sarcomatoid change seven years after deep x-ray therapy. Obviously the malignant change occurred long after deep therapy. Hyperplastic endometrium was observed in 4 cases. In one case of dysfunctional bleeding adenocarcinoma was detected 10 years after therapy. (Figs. 3 & 4).

From the above observations it is seen that deep x-ray therapy, bringing about castration, did not prevent the development of malignant change in fibroid or endometrium. Though atrophic endometrium is the commonest finding after deep therapy hyperplastic endometrium is not rare.

From the above histopathological study of postradiated ovaries and uteri it is concluded that deep therapy is not a safe procedure for permanent benefit. It is not ascribed that deep therapy of ovaries has any direct relationship to future development of malignancy or the specific radiation changes in the ovaries have any causative role for future complications. It is better to make the patients fit for surgery and remove the source of

bleeding. The conditions makings the patients unfit for surgery may be the causative factors for future trouble specially in respect of malignancy. Somatotrophic hormone is blamed indirectly for this vicious cycle. This description will not be complete if it is not mentioned here that, in spite of all the previous findings and interpretations, there will always be some odd cases in clinical practice where no other alternative but deep x-ray castration is left in the hand of the gynaecologist.

References

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Figs. on art paper II.