

# Radiotherapy in Female Genital Cancer A Gynaecologist's Viewpoint

by

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## Introduction

Since the turn of the twentieth century, there has been steady progress in the treatment of cancer by radiotherapy. There have been improvements not only in the various forms of radiotherapy, but also in the techniques and regimes of administering radiotherapy, so that the results of such therapy have considerably improved, and the accompanying harmful side-effects minimised. Such a trend in radiotherapy has been evidenced with most forms of cancer, but especially so with the treatment of carcinoma of cervix (Blaikley, 1963). It is only with such a background that one has to proceed to discuss the present-day role of radiotherapy in the treatment of female genital cancer.

## Pattern of Female Genital Cancer

Before any discussion on the role of radiotherapy in female genital cancer can be adequately undertaken, it is necessary to be familiar with the pattern of the major types of cancer that can be encountered in the female genital tract. It is not the intention to describe the various types of female genital cancer in this paper, but only to tabulate the pattern of the major types of female genital cancer, and this has been done in Table I.

## Pattern of Treatment in Female Genital Cancer:

The various forms of therapy that are available in the treatment of female genital cancer are outlined in Table II, and this pattern of therapy can be applied to the treatment of cancer in general.

It is apparent that radiotherapy is only one of the many forms of treating female genital

TABLE I

### Pattern of Female Genital Cancer

1. <b>Vulva:</b> Carcinoma	{ Primary Secondary
2. <b>Urethra:</b> Carcinoma	
3. <b>Vagina:</b> Carcinoma	{ Primary Secondary
4. <b>Cervix Uteri:</b> Carcinoma	
5. <b>Corpus Uteri:</b>	{ Carcinoma Sarcoma
6. <b>Fallopian Tubes:</b> Carcinoma	{ Primary Secondary
7. <b>Ovary:</b> Carcinoma	{ Primary Secondary
8. <b>Foetal:</b> Choriocarcinoma	{ Primary Secondary

TABLE II

### Pattern of Treatment in Female Genital Cancer

1. Surgery
2. Radiotherapy
3. Chemotherapy
4. Supportive Therapy

cancer, and can be used as a curative or palliative procedure. The choice of radiotherapy in female genital cancer will depend not only upon the radiosensitiveness of the lesion but also upon the availability of radiotherapy facilities, both of equipment and personnel. Such radiotherapy facilities are only confined to the major hospitals in the main cities. In the Malaysian and Singapore regions such radiotherapy facilities are only available at the Singapore and Kuala Lumpur General Hospitals at present.

### Pattern of Radiotherapy Used in Female Genital Cancer

TABLE III

#### Pattern of Radiotherapy

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|---|
| <ol style="list-style-type: none"> <li>1. Radium</li> <li>2. Deep X-Ray Therapy (DXT)</li> <li>3. Supra-Voltage Radiation</li> <li>4. Radioactive Isotopes</li> </ol> |
|---|

In Table III (above) is outlined the various forms of radiotherapy that are available in the treatment of female genital cancer. Radium in applicators are used in the treatment of uterine cancer, both the cervix and corpus uteri. Radium needles have sometimes been used in the palliative therapy of carcinoma of the vulva, vagina and urethra. Conventional Deep X-Ray Therapy (D.X.T.) has been used in the palliative and supportive therapy of uterine, ovarian and even vulval carcinoma.

Supra-voltage radiotherapy is new in the field of radiotherapy, and has established itself as a potent weapon in the treatment of female genital cancer, especially so in the treatment of carcinoma of cervix. Supra-voltage radiotherapy is far superior to any of the other forms of radiotherapy, but the prohibitive cost of such a set-up has made it available only in very few centres of the world.

The place of radio-active isotopes in female genital cancer is only restricted to supportive therapy in ovarian cancer. Recurrence following surgical excision of an ovarian carcinoma, either

in the form of a tumour mass or malignant ascites could be treated by the intra-peritoneal injection of radio-active isotopes, such as gold or phosphorus. However, their use is not without possible deleterious side-effects on the intestinal tract, and they have in fact been replaced by the modern chemical cancer chemotherapeutic agents.

### The Role of Radiotherapy in the Treatment of Female Genital Cancer

In this section of the paper, it is intended to review the place of radiotherapy in the treatment of female genital cancer, the pattern of which has been outlined in Table I.

Radiotherapy has a limited place in the palliative treatment of primary carcinoma of the vulva, urethra and vagina. In such circumstances, radiotherapy can be administered as multiple radium needle implants in the growth, or as X-Ray irradiation of the growth.

In carcinoma of cervix, radiotherapy is often the treatment of choice, and is used not only as a palliative or partial therapeutic procedure, but often as the primary therapeutic procedure of choice. Added greatly in its favour is the fact that about 95% of all cervical cancerous lesions are highly radiosensitive, and respond superbly to a balanced regime of radiotherapy. In fact in some of the best radiotherapy centres, such as the Radiumhammet Institute of Stockholm (Kottmeier, 1955) and the Holt Radium Institute of Manchester (Patterson et al, 1948), the results have clearly shown that better 5-year cure-rates in cervical carcinoma can be obtained by the use of radiotherapy per se, than the results from other centres which use either radiotherapy combined with surgery or surgery per se.

Radiotherapy of cervical carcinoma can be administered in the form of radium insertions, X-Ray therapy or a combination of both. The principle of radium insertions is to administer a total radiation dosage of 6,000 to 8,000 mgm.-hours to the cervical growth and its vicinity, spread over two or three radium insertions, whereas in Deep X-Ray Therapy (DXT) a total dosage of 3,000r is directed primarily to the lateral pelvic walls and parametria.

At this juncture, it is pertinent to stress the fact that radiotherapy of uterine carcinoma should be the joint responsibility of the gynaecologist and radiotherapist, and that neither specialist should regard himself superior to the other in this sphere. In support of this fact, the following paragraph from the chapter by Blaikley (1963) in the British Gynaecological Practice is quoted in full: "Whatever technique is used, there are strong reasons for urging that the application of radium should be a combined operation by gynaecological surgeon and radiotherapist; the former is much more experienced in examination of the pelvis and can not only stage the growth more accurately as a rule, but also interpret unusual findings more surely; in addition, he is safer if dilatation of the cervix is difficult. On the other hand, the radiotherapist is much more knowledgeable as regards the control and variation of dosage, and how best to combine radium and deep X-rays. At the Chelsea Hospital for Women it has been shown that the results of combined work are 70 per cent better than those obtained when the unaided gynaecologist uses radium, even though the patient subsequently has deep X-rays. Only exceptionally is a man, for example Kottmeier, thoroughly trained in both disciplines."

In the treatment of carcinoma of the Corpus Uteri, radiotherapy is used as an essential adjuvant to surgery. Pre-operative course of radiotherapy, by the use of radium applicators, is the standard regime of treating carcinoma of the corpus uteri. Post-operative recurrence of this carcinoma in the vaginal vault can be effectively treated by the local insertion of vault radium applicators. These could be the standard vaginal applicators or ones specially devised for

the vault, such as the Dobbie's applicators (1953).

As stated earlier, radiotherapy has a very limited place in the palliative treatment of ovarian carcinoma. Malignant ascites, or the recurrence of growth following surgical excision of a primary ovarian carcinoma could be treated palliatively by Deep X-Ray Therapy or by intraperitoneal instillation of radioactive isotopes such as—gold or phosphorus.

The importance of close co-ordination between the radiotherapist and gynaecologist in attaining the best results in the treatment of cervical carcinoma has been stressed earlier and of this fact the sentiments of J.B. Blaikley (1963) have been quoted in full. What has been said for cervical carcinoma can be applied in general to the treatment of all forms of female genital cancer, even if one is confined to the discussion of the radiotherapy of this group of cancerous lesions.

In Figure 1 (below), the author has attempted to present schematically the team of personnel that may be involved in undertaking the administration of radiotherapy to patients with female genital cancer. Taking the Radiotherapist and Patient jointly as the central focus of the team, it is found that the patient can only come under the wings of the radiotherapist after the diagnosis of the disease. At this stage, the radiotherapist-patient unit is dependent upon the gynaecologist, pathologist and cytologist for the detection of the condition.

The physicist has a small but important part to play in that he is responsible for advising the radiotherapist on the proper scheme of

### Importance of Team-work in the Treatment of Female Genital Cancer

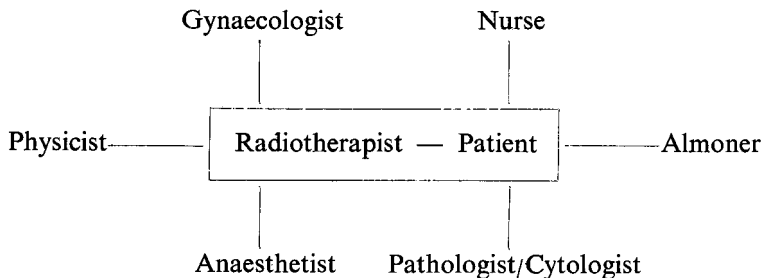


Figure 1 — Personnel set-up in the Radiotherapy of Female Genital Cancer.

dosage of the radiotherapy to be administered; and this scheme may have to be individualised to suit the particular patient.

The anaesthetist, gynaecologist and nurse form part of the team which is responsible not only for the operative insertion of radium but also in the post-operative care of these cases.

The almoner has an important role in that she is responsible to see that the dependents of such cancer patients are adequately provided for during the period that they are undergoing radiotherapy. The almoner is also responsible for the regular attendance of such patients at subsequent follow-up clinics without default.

In conclusion, it is fair to state that the importance of team-work in every branch of specialised medical practice is becoming more and more apparent, and this is primarily the result of rapid advances in the frontiers of medical knowledge. In this context, the importance of teamwork in the Radiotherapeutic care of a

patient with female genital cancer cannot be underestimated, if the results of such therapy are to be continuously improved.

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