CARCINOMA OF THE UTERUS.

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Carcinoma of the cervix uteri is the commonest type of malignant disease affecting the female genital tract, and, indeed, probably the commonest site for all malignant disease in women. It comprises nearly 90 per cent. of all cases of carcinoma of the uterus.

The commonest age at which the disease occurs is between forty and fifty, though cases have been reported in women as young as twenty. Wilfred Shaw gives the age incidence as follows:

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Incidence</th>
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<tbody>
<tr>
<td>Under 20</td>
<td>Nil</td>
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<tr>
<td>20–30</td>
<td>3.6 per cent.</td>
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<tr>
<td>30–40</td>
<td>24.7 per cent.</td>
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<tr>
<td>40–50</td>
<td>36.7 per cent.</td>
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<tr>
<td>50–60</td>
<td>23.8 per cent.</td>
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<tr>
<td>Over 60</td>
<td>11.1 per cent.</td>
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</table>

Its incidence is definitely related to child-bearing since the majority of cases occur in parous women, nulliparous women being affected in only 5 per cent. of all cases. It is probable, therefore, that injury or disease of the cervix such as chronic cervicitis plays an important part in the incidence of carcinoma, a fact which should be borne in mind when performing hysterectomy for simple conditions. For the same reason subtotal hysterectomy should only be performed in exceptional cases.

Pathology.

(1) Ectocervical Type. (Squamous-celled carcinoma.)

The growth affects the vaginal surface of the cervix and may appear either as an ulcer or, more commonly, as a fungating cauliflower-like growth, one or other predominating. As might be expected, the prognosis is more favourable on the whole in the fungating than in the ulcerating type.

(2) Endocervical Type.

In this type the growth begins in one of the cervical glands and gradually infiltrates the body of the cervix, the vaginal surface being unaffected in the early stages and appearing smooth and healthy. For this reason early diagnosis of the disease may be difficult. Later, however, when the whole of the cervix is involved, the growth bursts through the epithelium covering the portio-vaginalis, leaving little doubt as to the true nature of the condition. Infection supervenes, leading to sloughing and extensive ulceration.

Although the endocervical type is usually an adeno-carcinoma it is not uncommon to find a squamous-celled carcinoma following metaplastic changes in the glands before the onset of the disease. In a series of 179 cases reported by Winterton and Windeyer only seven were true adeno-carcinomata.

Spread.

The growth may extend by direct spread, by way of the lymphatics, and by direct implantation. Spread by the blood stream is very rare, although occasionally secondary deposits have been found in the kidneys.

Direct Spread.

The growth may extend upwards into the uterine cavity or downwards along the vaginal walls to the vaginal outlet. It commonly spreads laterally into both parametria to the pelvic walls, often involving the ureters, and may spread backwards to the rectum or forwards into the bladder.
Lymphatic Spread.

The growth extends mainly along the lymphatics accompanying the uterine vessels to the obturator (hypogastric) lymph nodes, an important group of nodes lying in the obturator fossa just anterior to the hypogastric artery. From here it spreads to the inter-iliac nodes which lie between the external iliac artery and vein, and from these to the aortic nodes. The nodes in the obturator fossa and the inter-iliac nodes must be removed in the operation of Wertheim’s hysterectomy, but by the time the aortic nodes have become involved the case is usually inoperable. If the growth has spread to the lower third of the vagina the inguinal nodes may be involved.

Prognosis.

The majority of cases of carcinoma cervix do not survive without treatment for more than eighteen months from the onset of symptoms, though individual growths occasionally vary in their malignancy, as elsewhere in the body. The prognosis is worse in the endocervical type, not only on account of its different pathology but also on account of the fact that the diagnosis is liable to be missed in its early stages without careful examination and investigation.

Attempts have been made to classify cervical cancer into grades of malignancy according to their histological characteristics. Broders at the Mayo Clinic classifies them into four Grades. Grade I represents the adult, highly differentiated type of epidermoid carcinoma, whereas Grade IV comprises the very cellular types of growth consisting of undifferentiated embryonic cells. Grades II and III cover cases occupying intermediate positions. This classification is not generally used in this country.

Haemorrhage.

It cannot be too strongly emphasised that the earliest symptom, and often the only symptom, is bleeding. This bleeding is irregular and may follow intercourse, douching or exercise, or may occur for no obvious reason. Unfortunately it frequently occurs at the time when the menopause may be expected and is only too readily attributed by the patient and her medical adviser to this event.

For this reason attempts have been made in America and other countries to induce women to submit themselves for examination at regular intervals during this dangerous period. Cases occurring after the menopause and during pregnancy are usually diagnosed earlier for obvious reasons.

Discharge.

Later, the growth becomes infected and a characteristic foul-smelling discharge makes its appearance.

Pain.

Real pain is a late symptom and nearly always indicates spread of the growth to surrounding structures. When the parametrium and the obturator nerve are involved pain may radiate down the inner side of the thigh to the knee; when the bladder is involved micturition becomes painful; if the rectum is involved there will be pain on defecation.

When the growth has extended to the side wall of the pelvis and the whole of the pelvic cellular tissue is involved, pain in the groins and the back may be severe and difficult to relieve. In the late stages of the disease if vesico-vaginal or recto-vaginal fistulae have occurred the patient presents a pitiful spectacle. On the other hand, it is surprising how well a patient will occasionally appear with most advanced disease.

Cause of Death.

At least 50 per cent. of the patients die from uræmia after urinary infection has resulted from ureteric involvement in the parametrial spread. For the remainder, toxæmia, exhaustion and hæmorrhage supply the immediate causes of death.

Diagnosis.

The diagnosis of cancer of the cervix depends on the association of a history of irregular bleeding with certain physical signs. Ectocervical growths are friable and bleed readily on
touching, and inspection of the cervix with the speculum will show the presence of a growth or an ulcerated area with everted edges. Schiller's test may also be of assistance. It depends on the fact that healthy cervical epithelium contains glycogen and stains a dark brown with Lugol's iodine solution, whereas precancerous and cancerous areas do not. The test is used fairly extensively on the Continent, but in this country it is felt that should any doubt exist as to the diagnosis biopsy is the safer procedure. In the case of endocervical carcinoma friability is absent in the early stages and the cervical epithelium appears smooth and healthy. On the other hand, the cervix itself feels hard, and is large and characteristically barrel-shaped, and it cannot be too strongly emphasised that at this stage a thorough investigation with a curette should be performed in any case with a suspicious history.

In more advanced cases limitation of movement of the cervix occurs in varying degree. In all cases in which a diagnosis of carcinoma has been made, rectal examination will give valuable information as to the extent of spread to the parametria.

**Differential Diagnosis.**

Diagnosis of carcinoma should not be difficult in those cases of irregular bleeding where the cervix is friable and bleeds readily, but occasionally certain conditions may simulate carcinoma.

A simple cervical erosion should present little difficulty, for it is not friable, has the feel of velvet, and does not bleed freely on examination but oozes from many small points. On the other hand, an ectropion associated with an irregularly hypertrophied cervix may present considerable difficulty and it is in such cases as these that a biopsy of the cervix must be done.

The cervix in endocervical cancer is barrel-shaped and feels hard and rigid, whereas in chronic hypertrophic cervicitis the enlargement is not so typically barrel-shaped and is elastic. Further, in the absence of an erosion there is usually no history of bleeding. Here, too, a curettage of the endocervical canal should be performed in cases of doubt.

A fibroid polypus, especially if it is a large one and undergoing necrosis, may resemble a fungating carcinoma very closely. There is irregular bleeding and a foul discharge, but the mass is not friable.

Other conditions have been mistaken for cervical cancer, such as an incomplete miscarriage with necrotic placenta appearing through the cervix, and rare conditions such as tuberculous disease and gumma of the cervix, etc. In all these histological examination may be necessary before establishing a diagnosis.

**Clinical grouping of cases of carcinoma cervicis:** The League of Nations system of grouping is now universal and should be strictly adhered to if any knowledge is to be gained from results of treatment. Each case of carcinoma must be carefully examined and placed in one of the following four groups. Only a brief description of the groups will be given here.

**Group I.** The growth is strictly limited to the cervix. There is no limitation of movement.

**Group II.**
(a) The growth has extended on to the vaginal vault.
(b) There is some infiltration of one or both parametria, but it has not invaded the pelvic wall and fixation of the cervix is therefore not complete.
(c) There is some extension to the body in the case of endocervical carcinoma.

**Group III.**
(a) There is complete infiltration of one or both parametria, and it has invaded the pelvic wall resulting in complete fixation of the cervix.
(b) The pelvic lymph nodes are involved.
(c) The lower third of the vagina is involved.

**Group IV.** The bladder or rectum are involved. The carcinoma has extended to the vaginal outlet and there are distant metastases.

It is evident that such a grouping is only a clinical one and has no pathological foundation. Many cases which appear clinically to be in Group I will at operation be found to have metastases in the lymph nodes and therefore will fall into Group III.
Further, it is obvious that statistics of results from radium treatment will vary if grouping is not strictly adhered to. Also it follows that a case in which there is some doubt as to the actual group should always be put in the earlier stage, otherwise the proportion of favourable results in the less advanced grades will be unduly raised.

**Operability Rate.**

The operability rate naturally varies among individual surgeons and lies between 50 per cent. to 60 per cent. of all cases seen, the majority of these falling into Groups I and II with a few in Group III.

Apart from the actual stage of the growth itself, the suitability of a case for operation will also depend upon the general condition of the patient.

**Treatment.**

Controversy concerning the relative values of operation and irradiation continues to rage. Only one thing appears certain, that no hard and fast rule is possible. The question is not which is the better, but when should either be used. It is clear that the greatest scope for radium lies in cases where operative measures present difficulties and dangers, and as radium technique improves this scope will tend to increase. *Pari passu* with this, a diminution in the scope for operative treatment may be expected. But so long as irradiation remains ineffective in dealing with lymph node secondaries operation will remain the treatment of choice in certain cases, the problem being to know where to draw the line of demarcation between the two methods.

In this connection it is pointed out that a number of cases appearing on clinical examination to fall into Group I have been found at operation to have early lymph node involvement and therefore belong more properly to Group III. Bonney's figures show that operation in these early lymph node cases offers sufficient hope of success to warrant its employment, whereas if radium is employed such cases are doomed to failure because it is agreed by most observers that radium has little or no effect upon lymph node metastases.

Comparing statistics obtained from the recent annual Report of the National Radium Trust and Radium Commission giving the aggregate figures from sixteen Centres all over the world, with the figures for Wertheim's operation as given by Victor Bonney, taken to represent the best results that can be expected, there does not seem to be any important difference in the results obtained by the two methods. At the same time, it must be appreciated that Bonney only treated 63 per cent. of all cases seen between 1907 and 1929, and that many of the remainder would be regarded nowadays as suitable for radium treatment, giving a much enhanced figure for total five-year cure by *both* methods. The figures of the Radium Commission, however, refer to radium treatment for over 87 per cent. of all cases seen in recent years.

It should be remembered, too, that Bonney's mortality of 14 per cent. compares with a radium mortality of 2 per cent. or under, and yet the results are approximately the same. Surely, now that radium has come into this field as an established and readily available form of treatment, and the technique of Wertheim's operation has been perfected, there is no longer need for heroic surgery any more than for indiscriminate radium. A judicious employment and selection of both methods should yield even better results than those obtained up to the present.