

PRIMARY CARCINOMA OF THE VAGINA

A Study of 67 cases of

by

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Primary carcinoma of the vagina is a very rare disease. Most of the carcinomata in the vagina are secondary—the metastatic spread occurring most commonly from the cervix and uterus, and less frequently from the vulva, urethra, bladder and rectum, or, very rarely, from distant organs. From 1951 to 1961, there were 67 cases of primary vaginal carcinoma recorded in Chittaranjan Cancer Hospital, Calcutta, which is one of the biggest Cancer Institutes in Asia. A review of these cases has been made which will demonstrate that up till now no satisfactory line of treatment has yet been formulated to attack this dreadful disease.

Incidence

The incidence of primary vaginal cancer is generally stated to be less than 1 per cent of all female genital cancer cases. During the 11 years under review there were 5282 cases of genital cancer, including 4830 cases of carcinoma of the cervix (91.4 per cent), 188 cases of carcinoma of the ovary (3.6 per cent), 124 cases of carcinoma of the body of the uterus (2.3 per cent), 71 cases of carcinoma

of the vulva (1.3 per cent) and 67 cases of carcinoma of the vagina (1.3 per cent).

This finding corroborates with the incidence of vaginal cancer found by other authors, such as Hurdon (1942) 1.9 per cent, Emmert (1938) 1.09 per cent, Way (1951) 1.6 per cent. Singh (1951), reporting from Sloane Hospital for Women, found it to be 1.52 per cent.

The incidence of primary vaginal cancer in relation to carcinoma of the cervix is found to be 1.4 per cent in this institution, which may be compared with the figures given by Way (1948), Hurdon (1942), Whitehouse and Porteous (1962) which were 2.2 per cent, 1.9 per cent and 3.8 per cent respectively.

Age of Onset

There is considerable difference of opinion amongst authors on this subject. Ewing (1940) places the figure as low as 30 to 40 years. Novak (1958) says that it is most frequent between the ages of 35 to 55. Hurdon (1942) states that since only two of her cases were under 50, it is a disease of advanced age. Way (1951) is of opinion that the commonest age incidence is between 51 to 60. Singh (1951) found the age of the patients

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ranged between 32 to 68 years. Whitehouse and Porteous (1962) found the average age incidence to be 62.5 years.

In this series the average age incidence was 51.6 and the commonest decade was found to be between 51 to 60 which agrees with that of Way (Table 1).

women. Out of 67 cases, only 7 patients were nulliparous whereas 58 were parous. This agrees with the findings of other workers. Way (1951) found 8 nulliparae in a series of 64, Hurdon (1942) had 4 out of 25, Emmert (1938) had 7 out of 37 and Whitehouse and Porteous (1962) had 4 out of 37.

TABLE I
Age Incidence

| 11-20 | 21-30 | 31-40 | 41-50 | 51-60 | 61-70 | 71-80 |
|-------|-------|-------|-------|-------|-------|-------|
| 1 | — | 13 | 13 | 28 | 9 | 3 |

Youngest—16, Oldest—80, Average age incidence—51.6.

The oldest patient in this series was aged 80 years. Though it is extremely rare to have any case under the age of 20 years, one patient in this series was aged 16 years. Few such cases have been reported in the literature, although Lovegren (1931) reported a case of papillary epithelioma in the vagina of an infant of 16 months. Aschheim (quoted by Lovegren) described a case of adenocarcinoma in a child of 6 months. Recently, Chak et. al. (1962) reported a case of papillary adenocarcinoma in a Chinese infant of 17 months.

Parity

Table 2 demonstrates that this disease is more common in parous

Etiology

The only predisposing factor observed in the series of other workers was the prolonged use of a ring pessary. Way (1951) reported 6 such cases in his series of 64, whilst at the Marie Curie Hospital (1947) 14 cases were recorded out of 52. Whitehouse and Porteous (1962) had 7 such cases out of 37. In this series of 67 cases none had worn a pessary, which agrees with the findings of the other authors such as Singh and Johnston.

Symptomatology

The majority of our patients complained of vaginal bleeding which was either intermittent or continuous. Post-menopausal bleeding was pre-

TABLE II
Distribution of Cases according to Parity

| 0 | 1 | 2 | 3 | 4 | 5 | Above 5 | No record |
|---|---|---|---|---|---|---------|-----------|
| 7 | 5 | 5 | 6 | 8 | 8 | 26 | 2 |

Nulliparous—7, Parous—58.

sent in 46 cases out of 67. Others complained of serosanguinous discharge or pain in the lower abdomen.

In this series *bleeding* was present in 69.6 per cent of cases, *pain* in the lower abdomen or backache in 27.6 per cent and *discharge* in 17.4 per cent of cases. Other symptoms, such as frequency of micturition, dysuria

where the growth had involved the anterior vaginal wall.

Though it is rare to find a case of procidentia along with primary carcinoma of the vagina, there was one case in this series where the growth involved the left lateral wall of the vagina, and the cervix was completely free from the growth.

TABLE III
Site of Lesion

| Anterior wall | Posterior wall | Lateral wall | Anterior & lateral | Posterior & lateral | All walls |
|---------------|----------------|--------------|--------------------|---------------------|-----------|
| 14 | 12 | 12 | 11 | 15 | 3 |

and pruritus were present in 8.7 per cent of cases.

Clinical Findings and Methods of Diagnosis

The diagnosis is made by routine pelvic examination. The growth may be proliferative, ulcerative or indurative in type and is usually friable. Speculum examination will show whether the growth has extended up to the cervix or involved the vulva. If so, it is the practice to classify the growth as cervical or vulval carcinoma, even though it may seem that the primary site is in the vagina.

In this series, biopsies were taken not only from the growth in the vagina but also from the cervix and endometrium. As the majority of the patients were post-menopausal, endometrial curettings were not obtained in quite a number of cases. Cytopathological examinations of vaginal smears according to Papanicolaou's technique were also done. Cystoscopic examination was done in cases

Site of Lesion

Table 3 shows the various sites of the growth in the vaginal canal.

According to most authors, the posterior vaginal wall is the commonest site of the lesion, but from this series it cannot be concluded definitely which wall of the vagina is most commonly affected though the high incidence on the anterior wall agrees with the findings of Way (1951).

Histology

Out of 67 cases in this series, 63 had squamous-cell carcinoma. There were only 2 cases of adenocarcinoma. In 2 cases no record could be obtained. Most of the squamous-cell carcinomas were well differentiated.

In one of the two cases of adenocarcinoma the pathologist's report was as follows:— "Papillary adenocarcinoma — may be metastatic. Please investigate the tube and ovary". The uterus and cervix in this case were free from malignancy.

No adnexal masses could be palpated on pelvic examination. It was hardly necessary to do a laparotomy only for academic interest to find the primary source, so no further investigation was done in this case. Unfortunately the growth recurred 6 months after treatment, and adenocarcinoma was again found on histological examination.

There is much speculation about the origin of such rare cases of adenocarcinoma in the vagina. Mayer (1901) considered them to be arising from the aberrant cervical glands in the vaginal fornix. Mayer (1907), subsequently supported by Novak (1952), was of opinion that they were derived from misplaced mesenchymal cells in the vaginal walls, most probably from the Mullerian rests due to developmental anomaly. Moench (1931) thought that they arose from the remnants of Gartner's ducts or from endometriosis of the rectovaginal septum. Way (1948) believed that one of his two cases of adenocarcinoma was derived from Wolffian remnants. Dutta Choudhury (1956) thought that the second case of adenocarcinoma in the present report originated from adenosis of the vagina.

Treatment

In 1935 Taussig stated: "We acknowledge our total inability to do anything effective for primary cancer of the vagina" and even after 27 years no satisfactory treatment has yet been formulated.

No other genital cancer is so difficult to treat as the vaginal one. This is mainly because of (a) the anatomy

of the part and (b) its wide lymphatic drainage. The lymphatics from the upper third of the vagina drain to the obturator and iliac group of lymph nodes. Those from the lower third drain mostly to the superficial inguinal nodes and some directly to the external iliac nodes. Those from the middle third drain by both routes and there is free anastomosis between the upper and lower halves of the vagina.

Two methods of treatment are available, surgery and radiotherapy. Out of 67 patients, 3 were treated by surgery—one of these was only palliative excision for recurrence after radiotherapy; 36 had radiotherapy. The other 28 patients were not treated; in some of them the disease was so advanced that treatment was not possible and the rest did not turn up for treatment.

Surgery

The surgical treatment of carcinoma of the vagina is not only difficult but mutilating too. There is a place for hysterovaginectomy but the technique is difficult. If the operator fails to remove an adequate amount of tissue, there is a possibility of leaving malignant cells behind, and if he is too bold there is a risk of damaging the bladder or rectum with subsequent fistula formation. If the growth is situated in the upper third of the vagina, there is a place for Wertheim's operation. But, as the vaginal approach is the choice of treatment in this institution, late Dr. Mitra did radical vaginal hysterectomy with bilateral extra-peritoneal lymphadenectomy and removal

of more than half of the vagina in 2 cases. In one of these two cases the growth was associated with procidentia as mentioned earlier.

If the growth is advanced, there is a limited place for an exenteration operation. For this operation the case should be selected and requires lot of investigations. It should be remembered that these patients are elderly and they are often anaemic and ill-nourished. It is to be emphasized here that during exenteration the lymphatic glands, not only of the iliac and obturator groups but also of the superficial and deep inguinal group, should be removed, especially if the growth involves the lower third of vagina. To do such an extensive operation will increase not only the primary mortality but morbidity too. Anterior exenteration was attempted in one case in this series but could not be done owing to a metastasis in the liver.

The third case of surgical treatment in this series was one in which the growth recurred after radiation and simple excision was done.

it was found difficult to treat all cases by box applicators, especially where the growth involved the middle and lower thirds of vagina, 21 cases were treated by means of a radium mould. The details of the technique were described in our previous paper (Basu, Majumder and Roy, 1955). The idea of putting in a radium mould was to adjust the dosage in such a way that the tumour could be irradiated adequately while delivering minimal radiation to surrounding tissues. Moreover, a suitably prepared mould to hold the radium can be retained in position without much difficulty. In 2 of the 21 cases treated by this method external radiation was also applied. Five cases were treated only by external radiation.

Results of Treatment

In the present series the cases which were treated by a radium mould, showed a local recurrence of growth in the vagina in 11 cases within 2 years (52.4 per cent). A vesicovaginal fistula occurred in 2 cases and a rectovaginal fistula in 1 case.

TABLE IV
Treatment by Radiotherapy

| Radium mould | Radium mould + ext. radiation | Radium | External radiation | Radium + ext. radiation |
|--------------|----------------------------------|--------|-----------------------|----------------------------|
| 19 | 2 | 5 | 5 | 5 |

Radiotherapy

Table 4 shows the various radiotherapeutic techniques used. Five cases, where the growth was situated on the upper third of vagina, were treated by box applicators. In another 5 cases external radiation in addition to radium was also given. As

Five Year Survival Rate

From 1951 to 1957, 52 cases were seen, out of which 32 cases were treated. Thirty of these patients were treated by radiotherapy and 2 by surgery. Of 30 patients treated by radiotherapy, 21 were treated by radium mould and 7 of these were

alive after 5 years. Out of the other 9 patients treated by radiotherapy, 2 were alive after 5 years. So out of 30 patients treated by radiotherapy, 9 were alive for five years (30 per cent) which may be compared with other published results. Eleven cases were lost sight of, including 1 case which was followed up to 4 years 3 months. Of the two cases treated by surgery, 1 is still alive (Tables 5 and 6).

incidence of 1.3 per cent. There were 2 cases of adenocarcinoma in this series.

2. The disease is more common in parous women, with an average age incidence of 51.6.

3. Thirty-nine cases were treated, 36 by radiotherapy and 3 by surgery. The five year survival rate after radiotherapy was 30 per cent.

TABLE V
Five Year Survival Rate
(Cases treated between 1951-57)

| Methods of treatment | Total cases treated | Number surviving | Dead | Lost to follow-up |
|-------------------------------------|---------------------|------------------|------|-------------------|
| Surgery | 2 (3) | 1 | 1 | — |
| Radiotherapy : | | | | |
| (a) Radium mould | 21 | 7 | 7 | 7 |
| (b) Other techniques | 9 | 2 | 3 | 4 |
| Total cases treated by radiotherapy | 30 | 9 | 10 | 11 |

TABLE VI
Comparison of Results with Other Published Figures

| Year | Source | Number of cases treated by radium | Percentage alive after 5 years |
|------|--|-----------------------------------|--------------------------------|
| 1931 | De Buben (collected — published results) | 129 | 4.0 |
| 1935 | Taussig (U. S. A.) | 18 | 11.1 |
| 1939 | Courtial (Paris) | 22 | 45.4 |
| 1948 | Way (U. K.) | 14 | 35.7 |
| 1961 | Whitehouse and Porteous (Liverpool) | 18 | 16.6 |
| 1963 | Present Series (C. C. H.) | 30 | 30.0 |

Summary and Conclusion

1. Among 5282 cases of genital cancer seen in Chittaranjan Cancer Hospital, Calcutta, between the years 1951 to 1961, there were 67 cases of primary carcinoma of the vagina, an

Acknowledgement

I would like to thank Dr. T. K. Ghosh, Superintendent of Chittaranjan Cancer Hospital, for allowing me to use the hospital records and also for his advice and help in compiling

this paper. I am indebted to Dr. M. Mitra for his helpful criticism. I also wish to thank Mr. R. P. Ghose for his help in preparing the statistics.

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