

A STATISTICAL SURVEY OF CERVICAL CANCER

by

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Recently, interest in cancer has increased considerably. The modest mortality due to carcinoma in the last century has moved up to become the second largest cause of death today. Not only has the mortality due to infections reduced considerably, but the incidence of cancer of certain organs like that of the ovaries and lungs is definitely rising. In spite of all the clinical and experimental research the aetiology of cancer still remains obscure, though the factors of heredity and extrinsic and intrinsic activators continue to engage the attention of the scientists. Interesting hypotheses have been put forward by Sir Macfarlane Burnett, Gross, Doll, Potter and others regarding the causation of carcinomas. Urgent consideration is being given to the effect of ionizing radiations on gene mutation and resulting carcinomas.

According to Mitra, on the basis of cancer mortality in India, about 200,000 persons die of cancer every year, which means 800,000 persons

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suffer from cancer any one time in the country. In women cancer appears earlier than in men. The magnitude of the problem can be seen by the amount of work carried out in different countries. In Eastern Germany cancer of any kind is notifiable to the Health Office. In every Health Office there are several assortment circles, and as soon as a cancer is diagnosed or suspected the case gets transferred to a specialist authorised to carry out the treatment. The assortment circles keep an eye on the treatment and prognosis and follow-up of the patient. In the United States there are a large number of cancer-detection clinics chiefly supported by private agencies. Gynaecological cancer forms a major problem in women, being responsible for 22% of all cancers and is second only to cancer of the breast which is responsible for another 25% of the cases. Cancer of the cervix alone is responsible for 11% of the total number.

Cervical cancer in India appears to behave differently as regards age, incidence, etc. when compared to that found in western countries.

Table I gives the incidence of different types of cancer in a total of 695 cases who attended the Cancer Clinic of the Department of Obstetrics and Gynaecology of the Lady

STATISTICS FOR CANCER CERVIX R.I. & C.H.
 ACCORDING TO PARITY
 TOTAL NUMBER OF CASES (960)
 FROM 1956 - 1959.

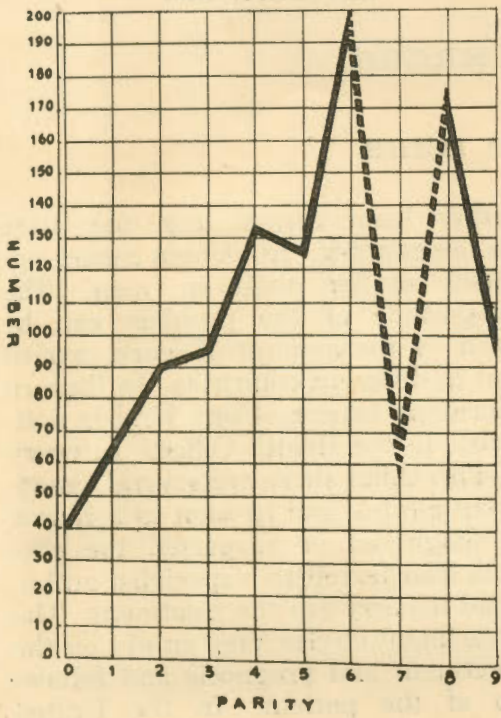


Fig. 4

STATISTICS FOR CANCER CERVIX R.I. & C.H.
 TOTAL NUMBER OF CASES 954
 ACCORDING TO AGE GROUP & PERCENTAGES.
 FROM 1956 - 1959.

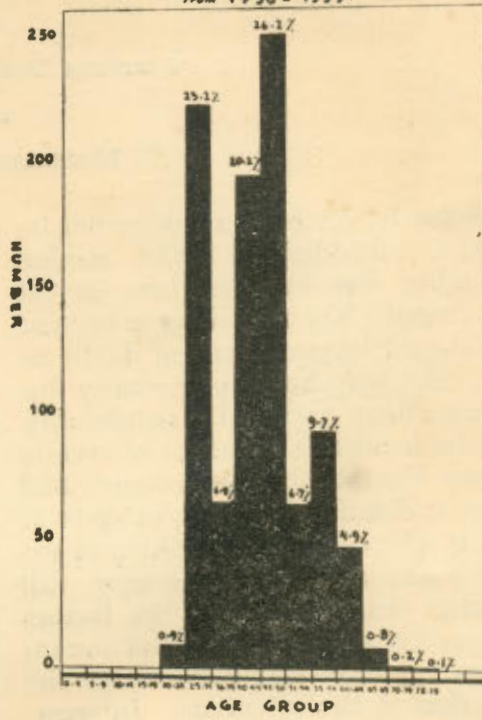


Fig. 5

TABLE I
Incidence of Different Types of Genital
Cancer (1957-60).
Total No. of Cases 695

Types of cancer	No. of cases	
	cases	Percentage
1. Carcinoma cervix	590	84.89
2. Carcinoma ovary	60	8.64
3. Carcinoma body of the uterus	25	3.6
4. Choriocarcinoma	10	1.44
5. Carcinoma vagina	5	0.72
6. Carcinoma vulva	4	0.57
7. Carcinoma fallopian tube	1	0.14

cases of cancer cervix he saw two of cancer of the corpus.

The cause of this discrepancy is not very clear but it may be due to the high fertility, lower expectation of life and the very high incidence of neglected cervical pathology in Indian women. Rewell working in Madras (1957) noticed the same discrepancy and ascribed it to a change in the cancer incidence in the Indian population. Ovarian cancer in the present series accounted for 60 cases which is more than twice the incidence of corpus carcinoma.

TABLE II
Staging of the Cases of Carcinoma Cervix

Stage	No. of cases	Percentage
0	1	0.17
I	45	7.61
II A vagina	79	13.4
B paramet.	81	13.73
C uterus	14	2.37
III	232	39.32
IV	138	23.4

Hardinge Medical College Hospital, New Delhi, from 1st September, 1957 to 31st August, 1960. From the above table it is obvious that cervical cancer accounts for nearly 85% of the cases, whereas carcinoma of the uterus accounts for only 3.6%. In the West the proportion of cancer of the body of the uterus to carcinoma of the cervix is 1 : 1 or 1 : 2. In the present series of cases it is 1 : 23.5. Mitra's (1957) figures for Calcutta are 1 : 23.8. Harnett working on the mortality figures from the Registrar General's Review (1951-52) found that deaths due to cervical cancers were only twice those of cancer of the uterine body. Way, 1954, reported that for seven

In Table II an attempt has been made to subdivide the patients according to the League of Nations Classification. It is well known that there is a direct relation between the stage of the disease when first treated and the mortality. Cervical cancer is an easily accessible lesion which remains confined to the cervix for long periods in the early stages, hence the importance of early diagnosis. In the above series there was only one case of intra-epithelial cancer, whereas over 60% of the cases presented themselves in Stage III or IV. The magnitude of the problem and the high mortality can thus be visualized. In the Sloane Hospital, New York in 1948, the conditions

were quite the reverse — Stages I and II forming 60-70% of the total cases. Taking the figures for 1953 in this hospital there has been no change in the incidence of cases in Stage I, the figures remaining constant at 7.7%. In Lock's clinic Stages I and II cases rose from 32% in 1943 to 73% in 1948.

TABLE III

Relation to Time of Onset to Incidence of Carcinoma Cervix

Time of onset	No. of cases	Percentage
Upto 2 months	113	19.34
2- 4 months	130	22.26
4- 6 months	186	31.84
6- 8 months	42	7.19
8-10 months	14	2.39
10 months-1 year	56	9.58
More than 1 year	43	7.36

Analyzing further we found that though the majority of the cases belonged to Stages III and IV, yet 41% stated that they had come for examination within 4 months, and over 70% within 6 months of the onset of symptoms. Though the relationship of the stage of the disease to the duration of symptoms is still indefinite, it is likely that in a large number of patients no attention had been paid by the patient to the presenting symptom till the disease had spread considerably. McKinnon (1952) stated that there is a lack of correlation between the duration and the clinical stage of the disease, taking the data from the Ontario Cancer Centres. This statement has however been challenged by various authors.

In this connection it may be interesting to point out certain fallacies

in the histopathological diagnosis of carcinoma as brought out by the following Case-history:—

R, aged 25 years, was referred to us as a case of carcinoma cervix as diagnosed by a punch-biopsy specimen, sections of which showed typical squamous cell carcinoma with cell-nest formation (Fig. 1). On examination the cervix was replaced by a hard, nodular, crater-like growth. The uterus was normal size, retroverted with irregular fixed masses palpable in both the fornices. A diagnosis of carcinoma cervix with bilateral tubo-ovarian masses was made and after all investigations, a Wertheim's hysterectomy was performed. During the operation there were dense adhesions found binding the uterus and the parametria and separation was a bit difficult. The patient made an uneventful recovery, but to our surprise the histopathological report came as tuberculosis of the cervix with well-marked tubercular foci seen in the uterus, glands, tubes and ovaries (Figs. 2, 3, 4).

TABLE IV

Presenting Symptoms in 590 Cases of Carcinoma Cervix

Symptoms	No. of cases	Percentage
Bleeding per vaginam	363	61.5
Postmenopausal bleeding	99	16.7
Post-coital bleeding	4	0.67
Discharge per vaginam	206	34.9
Pain	31	5.2
Urinary symptoms	18	3.05
Rectal symptoms	2	0.34
Palpable mass	4	0.67
Oedema feet	1	0.17
Dribbling of urine	5	1.01

Bleeding was the symptom complained of primarily in 61.5% of the cases and it is interesting to note that only four cases complained of post-coital bleeding. Though we know that vaginal bleeding is a sign of ulceration rather than the stage of the disease, yet in general the dura-



Fig. 1
Section of cervical biopsy showing squamous cell carcinoma.



Fig. 2
Section of cervix showing tuberculous lesion.

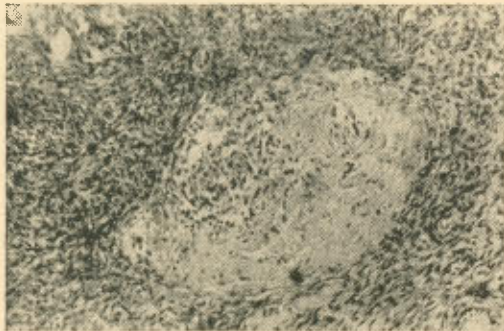


Fig. 3
Section of ovary showing tuberculosis.

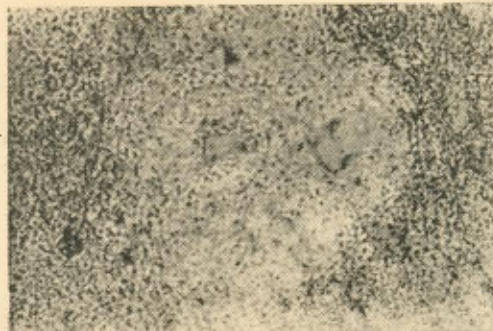


Fig. 4
Section of gland showing tuberculosis.

tion of the bleeding often helps in pin-pointing the stage of lesion. The bleeding was post-menopausal in only 16.7% of the patients.

Offensive discharge was the presenting symptom in 34.9% of the cases. Considering the large number of patients in Stages III and IV pain was complained of only in 5.2%. Finally, though dribbling of urine was complained of in 5 patients v.v.f. was found in 18 cases on examination. The above factors clearly indicate the fallacies in the patient's history of symptoms.

Looking at Table V the relationship of age to the disease is apparent and it is clear that cervical cancer occurs

TABLE V
Relation of Age to Incidence of Carcinoma Cervix

Age	No. of	
	cases	Percentage
Below 20 years	2	0.34
21-30 years	78	13.22
31-40 years	182	30.84
41-50 years	204	34.59
51-60 years	108	18.3
61-70 years	10	1.7
71-80 years	1	0.17
Above 80	4	0.67
Unknown	1	0.17

in younger women in India. In 80% of the cases in our series, the disease was found to occur below the age of fifty years. Harnett, in 1952, showed

that 65% of the cases contracted the disease below the age of fifty years. Way (1951) had drawn the same conclusions. Kottmeier (1953) showed that cancer of the cervix is more malignant in younger women but scientific proof for the above is lacking and most authors do not agree with Kottmeier.

The relationship between parity and marital status to the incidence of carcinoma cervix is clear from Table VI:—

TABLE VI
Relation of Parity to Incidence of Carcinoma Cervix

Parity	No. of	
	cases	Percentage
0	10	1.79
2	19	3.22
3	29	4.91
4	40	6.77
5	65	11.01
6	66	11.18
7	94	15.92
8	79	13.4
Above 8	135	22.8

All the patients were married and only 10 out of 590 cases, or less than 2%, were nulliparous. The incidence also rose with increasing parity as can be seen from the above table. This may be due to the repeated trauma and infection following repeated deliveries. Maliphant (1949) working on the same aspect found that the risk of carcinoma of the cervix was twice in a woman with six children as compared to another having only one child. Lane-Clayton (1927), however, failed to establish any relationship. Working

further on the aspect of circumcision, as the vast majority of the patients are Hindus circumcision was the exception. Wynder (1954) came to the conclusion that carcinoma of the cervix is more common in women who have coitus at an early age. Gagnon in a study of 13,000 nuns found not a single case of cervical cancer but stump cancer is found to occur quite commonly in childless women (Towne, 1955).

Out of 138 cases of Stage IV, only five had clinically recognisable metastases outside the pelvis. Of these, three cases had secondaries in the liver and there were metastatic deposits in the bones of two patients (Table VII).

TABLE VII
Complications in 138 Cases of Carcinoma Cervix Stage IV

Complications	No. of	
	cases	Percentage
Vesico-vaginal fistula	18	13.04
Recto-vaginal fistula	2	1.44
Enlarged liver	3	2.19
Metastases bones	2	1.44

De Alvarez (1953) pointed to the relative frequency of secondary deposits in the supraclavicular glands. In this series no case of supraclavicular gland deposits was seen. Vesico-vaginal fistula was diagnosed in 18 patients and rectovaginal fistula in two cases. Involvement of the urinary tract has been reported by other workers and is a fairly common complication. Henriksen at autopsy found ureteral involvement in 78.6% of treated and 82.8% of untreated cases.

TABLE VIII
Treatment of Cases of Carcinoma
Cervix

Treatment	No. of cases	Percentage
Radium alone	52	8.8
Deep x-ray therapy	182	30.8
Radium and deep x-ray	95	16.1
Operative		
Wertheim's	22	3.7
Shauta's	1	0.17

The standard method of treatment has been radium followed by deep X-ray therapy. Modified Stockholm's Method has been followed, giving the patient three applications with one week's interval between the first and second applications and two weeks' interval between the second and third applications.

Radium is followed six weeks later by deep X-ray therapy. In this series only 147 cases could be given radium with or without deep x-ray therapy. In 182 cases which were very advanced and debilitated, only deep x-rays could be administered. In other words, only 56% of the cases seen at our clinic were ultimately treated. This is an appalling figure but in quite a number of cases the treatment was refused or given up as the patient could not afford to stay on in the city for a long time and there is a shortage of beds in the hospital.

Surgical treatment was only resorted to in 3.8% or 23 cases with only one Schauta's radical hysterectomy. In most of these cases there was some complication precluding radium treatment. In two cases operation was done because the growth was not responding to radium treatment.

Very encouraging five year survival rates have been given by Mitra by the radical vaginal hysterectomy. As there was no proper follow-up in our hospital it is not possible to assess the results of treatment. There were two post-operative deaths, one due to air embolism and the other to uraemia. Four patients died during radium treatment due to sepsis, haemorrhage, etc. not related to any effect of the radium.

References:

1. De Alvarez: West J. Surg.; 61, 623, 1953.
2. Gagnon F.: Am. J. Obst. Gyn.; 60, 516, 1950.
3. Harnett W. L.: Survey of Cancer in London. Br. Emp. Cancer Campaign; 56, 360, 1952.
4. Henricksen E.: Am. J. Obst. Gyn.; 58, 924, 1949.
5. Kottmeier H. L.: Cancer of Female Genitals; Williams and Wilkins, Baltimore, 1953.
6. Lane-Claypon J. E.: Rep. Pub. Health Med. Subjects, No. 40; N. M. Stationary Office, 1927.
7. Maliphant R. G.: Br. Med. Jour.; 1, 978, 1949.
8. Mitra S.: Presidential Address, All India Obstetrics and Gynaecological Congress, 1957.
9. Rewell R. E.: J. Obst. Gyn. Br. E.; 64, 821, 1957.
10. Towne: Am. J. Obst. Gyn.; 69, 606, 1955.
11. Way S.: 'Malignant Disease of Female Genital Tract,' London, Churchill and Co., 1951.
12. Way S.: Br. Med. Jour.; 2, 780, 1954.
13. Wynder: Am. J. Obst. Gyn.; 68, 1016, 1954.