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CARCINOMA OF THE CERVIX

(A Study Based on a Review of Autopsy and Biopsy Material from the Department of Pathology, Andhra Medical College, Visakhapatnam over a Ten Year Period from 1948-58)

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There is no cancer of the human body which is so well known from its inception as that of carcinoma of the cervix. This is easy to understand because it can be seen, palpated and observed. The most important measure which can be taken by a woman anxious to protect herself from cancer is a competent gynaecological examination at periodic intervals, preferably no longer than six months, although examination of all the genital organs is necessary. But in case of cervix it is true that even normally appearing cervix may somewhere in some extent contain a small, impalpable symptomless focus of pre-invasive carcinoma, which sometime later, if left untreated, may go on to the stage of invasive cancer. Sometimes, even very early invasive lesions have been found in grossly normal cervices with no clinical symptoms. So our aim must be to diagnose these cases early and enough propaganda to be done in that manner. Moreover, diagnosis of pre-invasive or intraepithelial cancer must be made with great circumscription and only after pains-taking and often repeated biopsy and meticulous microscopic studies. In the great majority of cases the diagnosis is quite simple but the difficulty in the interpretation comes in the border-

TABLE I

Percentage Incidence of Carcinoma of Cervix in the Autopsy & Biopsy Series

Autopsy Series (From 1926-to date)		
Total number of autopsies	2,950	
Total number of malignancies	335	11.3
Total number of malignancies of female genital system ..	41	12.2
Ovary	12	29.3
Tubes	—	
Uterus	6	14.6
Cervix	21	51.2
Vagina and vulva	2	4.8
Biopsy Series		
Total number of malignancies of female genital tract ..	1,506	
Total number of carcinoma of cervix	1,263	4.28%
Total number of epidermoid carcinoma	1,229	8.6%
Total number of adenocarcinoma cervix	32	.68%
Total number of carcinoma in situ	2	01%

line cases. In recent times with the additional help of exfoliative cytology, tissue culture studies, histochemical methods, the interpretation has become a little easier. Though carcinoma of cervix seems to be a fairly common condition in India, on perusal of literature very few references are available on this particular subject, and hence the statistical study of the carcinoma of cervix is undertaken.

Incidence

Carcinoma of the cervix is the most common cancer of the female generative system. It is said to be responsible for 20% of deaths from all forms of cancer in women.

It is seen from the table that carcinoma of the cervix forms nearly 70% of the gynaecological disorders and autopsy statistics also reveal that it is the most common condition encountered amongst the disorders of the female genital system.

Age

Cancer of the cevix can occur at any age from 6 moths onwards but the peak incidenceseems to be in the 4th and 5th decdes of life.

TABLE I

Age in decades		Nmber	Percentage
11-19		1	0.078
20-29		11	8.665
30-39		32	30.6
40-49		9	42.857
50-59		8	17.00
60-69		)	0.78
	Total ..	1,2	

Table II shows thepercentage incidence of carcinoma (the cervix during the past 10 yea(1948-58) and it is noted that thdisease is most common between thge group of 40-49 years and it is alsseen that fairly good number of the cases occur in the age group of 240 years.

The lowest age recorded is 16 years, the highest recorded 64 years and the average age 40 years.

Signs and Symptoms

These may vary from nothing to extreme variety of symptoms depending on the stage at which patient seeks admission. Commonly they come for painless, irregular, vaginal bleeding or discharge following trauma. The discharge usually results from necrosis and infection of tissue. Pain and pelvic symptoms are later manifested. The signs and symptoms manifested by 20 of our autopsy cases are detailed below:

TABLE III

Signs and Symptoms of Carcinoma Cervix

	Number	Percentage
Dribbling of urine	3	15%
Difficulty in defaecation	2	15%
Pain in abdomen	2	10%
Foul smelling discharge	6	30%
No clinical history available	7	—

Gross Appearance

Carcinoma may start in any site but by far the commonest site is the squamo-columnar junction. Earlier stages may show mere whitish plaques hard, granular, feeling on touch; however, changes may be classified under the following headings: intraepithelial carcinoma; fungating; infiltrating and endocervical.

Intra-epithelial Carcinoma of Cervix

Cervix may appear entirely normal but there may be varying degrees of cervicitis, erosion, distinct ulceration, or laceration with eversion. Closure scrutiny may reveal the nature of granularity and ulceration. They may be single or multiple; only histology will disclose the true nature of this condition. We have come across two cases where it was first diagnosed as carcinoma in situ and which was proved after hysterectomy to be invasive carcinoma. The case histories of the two cases are detailed below:

Case Report I

A Hindu female, Mrs. C. N., aged 42 years, was admitted on 9-4-58 with a complaint of spotting of blood after coitus since two months and irregularity in menses since five months.

Gynaecological history revealed that periods used to come once in 15-20 days, moderate and painless.

Obstetrical history: Married for 30 years. Number of children 14. 9 alive, 1 stillbirth, others died. Last child was born 8 months back. B.P. 140/90 mm. of Hg.

Vaginal examination revealed a cystocele, rectocele and urethrocele. Cervix patulous, hypertrophied and showed ectropion. Cervix was pointing forwards. Erosion of the lips present. Uterus retroverted, normal in size and free from adhesions. Fornices free. Speculum examination showed few spots bleeding readily. Cervical biopsy (2282/58) reported on 12-4-58 as carcinoma in situ. On 19-4-58 vaginal examination showed blood-stained discharge and there was slight thickening of the vaginal wall both anteriorly and laterally.

Wertheim's operation was done and peritoneum and abdomen closed in layers.

Morbid Anatomy of the Specimen. Uterus measured 8 x 7 x 5 cm. Cervix bulky and showed erosion. Otherwise uterus appeared normal. Tubes and ovaries nil particular. Microscopically, several sections were examined from the cervix which showed mainly carcinoma in situ appearance, excepting in one section which showed definite invasion.

Case Report II

A Hindu female, aged 28 years, was admitted on 11-6-58 for the complaint of profuse bleeding per vaginam since one month with clots, foul smelling discharge since four years, weakness backache and palpitation since one month.

Gynaecological history: Puberty 13th year. Married for 14 years; 8 children, only 2 alive, others died in neonatal period. Last child was delivered three months back in the hospital and was still-born. Abdomen—nil particular.

Menstrual history: 5-6|30, no pain, flow normal, last menstrual period 1 year. General condition weak and anaemic. Vaginal examination revealed a hypertrophic growth arising from right side of the cervix and confined to cervix. Vaginal walls and fornices appeared free. The growth was bleeding readily on touch. Parametrium and uterosacral ligaments free. Clinical diagnosis: Cancer cervix stage I.

Investigations

Haemoglobin 41%. After therapy the haemoglobin level rose to 65% Urine and faeces, nil abnormal. Blood group '0'. Blood urea, 18 mg%. On 26-7-58 under heavy spinal anaesthesia an extended Wertheim's hysterectomy was done.

Morbid anatomy of the specimen: Uterus measured 8.5 x 6.5 x 6 cms. Cervix was bulky and showed an irregular proliferating growth, involving the whole cervix. Section of the growth was whitish.

Microscopic examination of the cervix showed an invasive epithelioma of the cervix. Invasion is seen in between the bundles of muscle fibres. Endometrium showed cystoglandular hyperplasia but did not show any invasion. Obturator lymph nodes showed infiltration with malignant cells. External iliac group of lymph nodes appeared free. Tubes and ovaries, nil abnormal.

Fungating Carcinoma

This type of carcinoma usually starts at the vicinity of the external os and by the time the patient consults, the lesion is fairly advanced and hence it is not possible to locate where exactly the lesion started. In the earlier stages it starts as a papule or a nodule, rapidly increasing in size, ulcerating and infiltrating into the surrounding tissues (Fig. 1).

Fig. 1
Photograph showing the ulcerating type of growth in the region of cervix.

Ultimately the lesion consists of fungating cauliflower-like mass occupying almost entire cervix (Fig. 2). The tissue is friable and contains necrotic material and pus and hence even a minor trauma results in bleeding. These lesions grow outwards and hence are known as exophytic type of growths. All the cases we have come across in the autopsy series are of the fungating type of carcinoma.

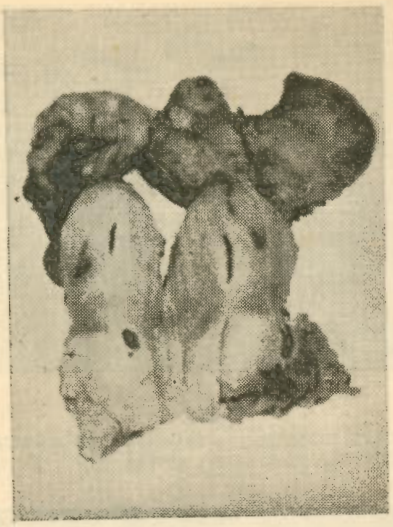

Fig. 2
Photograph showing the fungating cauliflower-like mass occupying almost the entire cervix.

Infiltrating Carcinoma

This type of growth grows inwards and hence is known as endophytic type of carcinoma (Fig. 3). It starts

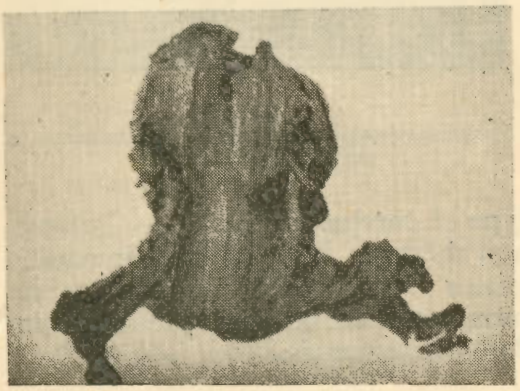

Fig. 3
Phtograph illustrates diffuse involvement of the cervix (endophytic type of growth).

as an irregular thickening or an ulceration in the cervix and invades cervical myometrial and parametrial tissues. Externally the cervix appears normal in shape and size but may be longer or decreased in size or may be distorted. Consistency is increased and the tissue is rubbery. Cut surface reveals homogenous whitish mass.

Endocervical Carcinoma

These lesions are usually of infiltrating type. Early stages may show simple roughening or ulceration or erosion. Later, the tumour spreads upwards, laterally and downwards, to uterine cavity, rest of the cervix and vagina. Ultimately the tumour mass may completely occlude the lumen, may be protruding from the external os, greyish white, firm, and friable.

Microscopic Appearance

Histologically carcinoma of the cervix can be divided into intraepithelial carcinoma, squamous-cell carcinoma and adenocarcinoma.

Intraepithelial Carcinoma or Carcinoma in Situ

Carcinoma in situ is a lesion in which the entire thickness of the squamous epithelium is replaced by cells which morphologically are indistinguishable from the cells of genuine invasive cancer with complete loss of normal stratification but with no demonstrable evidence of invasive penetration of basement membrane (Fig. 4). This condition has been known for more than 40 years, with the first classical description by Rubin in 1910. It can be histologically confused with the benign reserve cell hyperplasia, squamous metaplasia of endocervix, basal cell activity and

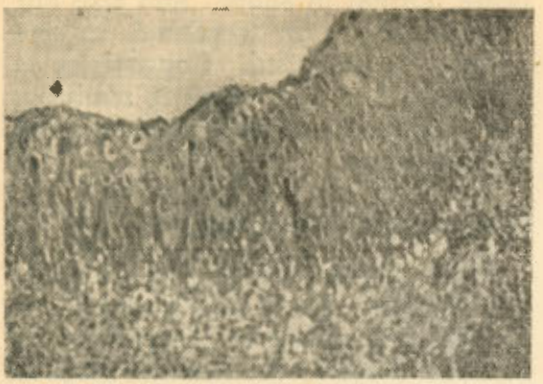

Fig. 4
Photomicrograph illustrates carcinoma in situ changes. H. & E. x 120.

Fig. 5
Photomicrograph illustrates epitheliomatous pattern in carcinoma cervix. H. & E. x 105.

cervical leukoplakia. We have come across, in our series, 2 cases of carcinoma in situ and seems to be much less in incidence than recorded in the literature. This may probably be explained by the fact that invasive carcinoma occurs at an early period and if we want to spot out these cases of carcinoma in situ we have to look out for them in much younger age group who may not even seek hospitalization at this stage.

Squamous-cell Carcinoma

This undoubtedly represents an advanced stage of intraepithelial carcinoma and invades the underlying structures (Fig. 5). It is similar to squamous-cell carcinoma elsewhere. We have come across this type in 81.6% of our series which is in general agreement of that recorded in the literature.

Adenocarcinoma

This generally arises from the endocervical mucosa or endocervical glands (Fig. 6). This is the usual

Fig. 6
Photomicrograph illustrates adenocarcinoma of cervix. H. & E. x 105.

type of carcinoma found in infants and children. The incidence in adults varies from 1.6% to 11.2%. We have come across this condition in 2.6% of the cases.

Method of Spread

Carcinoma cervix usually spreads by direct extension to the neighbouring tissues, later by lymphatics to the regional and distant lymph nodes and still later by blood stream. Direct extension usually occurs only in the

course of the disease. From its point of origin the tumour spreads downwards, upwards and laterally to involve progressively the cervix, body of uterus (Fig. 7), vagina, para-

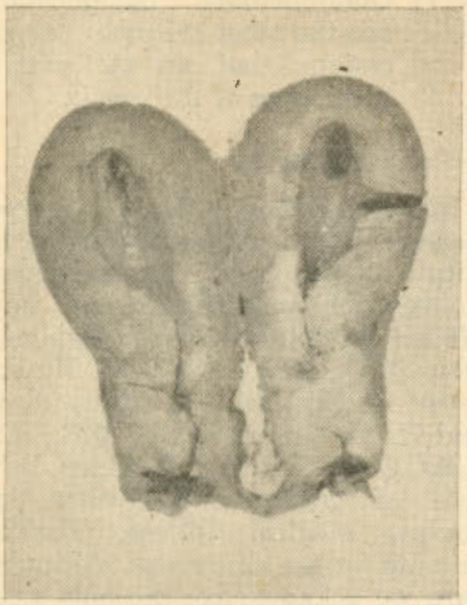

Fig. 7
Photograph shows direct infiltration into the body of the uterus in carcinoma cervix.

metrium, bladder, ureters, urethra, rectum and other pelvic tissues and organs. Later in the disease the pelvic organs get fixed and this is known as "frozen pelvis". The spread and metastases, as seen in our cases, is recorded in Table IV.

It is seen from the table that the pelvic organs get involved in most of the cases and only in 5 cases the lymph nodes are involved. The distant organs are rarely involved and we have seen metastases in the liver in 2 cases, lung in 1 case.

Complications and Associated Lesions

The complications and associated lesions as met with in our series are recorded in Table V.

TABLE V

Associated Lesions

Hydronephrosis	9
Pyonephrosis	1
Subacute nephritis	1
V. V. F.	4
Septic peritonitis	3
R. V. F.	1
Portal cirrhosis	1
Amoebic dysentery	1

The genitourinary complications are mostly seen in carcinoma cervix due to the direct extension of the tumour and obstruction to urinary passages (Fig. 8).

Summary and Conclusions

(1) Statistical analysis, based on the autopsy and biopsy review on carcinoma of cervix from

TABLE IV

Spread and Metastases

Spread to vagina	15 cases	
„ body of uterus	7 „	
„ parametrium	10 „	
„ infiltration of the bladder	13 „	(V.V.F. in 4 cases)
„ rectum	4 „	(R.V.F. in 4 cases)
„ lymph nodes	5 „	
„ liver	2 „	
„ ovary	1 „	

Fig. 8
Photograph shows hydroureters and hydronephrotic kidneys in carcinoma cervix.

the records of Pathology Department, Andhra Medical College, is presented.

(2) Carcinoma of the cervix is the most common cancer of the female genital system.

(3) 40% of these cases occurred in younger age group of 20-39 years.

(4) Carcinoma in situ is a pretty rare condition as met with in our series and progressively changes to invasive carcinoma as demonstrated in 2 of our cases.

(5) Various patterns of the tumour are described.

(6) Carcinoma of cervix spreads most commonly by direct extension, later by lymph stream and rarely by blood stream to distant organs.

(7) Genitourinary complications are the most frequent complications that are met with in carcinoma of the cervix.

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