

that abdominal discomfort was very much less. To prevent cracked lips vaseline or boroglycerine was applied frequently. To prevent oral sepsis the mouth is cleaned with bicarbonate of soda and a slice of lemon fruit and the patients are encouraged to suck lemon fruits thrice daily and are given acid lemon drop sweets to suck. This keeps the salivary glands in working order. It has been found during the last three years that this line of treatment is very beneficial, very few cases of parotitis occurring. For meteorism oil of cinnamon by mouth and turpentine stupes were found very satisfactory. For constipation liquid paraffin and/or soap and water enema are given as required. For diarrhoea only when it is excessive, the patient is given kaolin and/or bismuth and salol and diet is reduced. When intestinal hæmorrhage occurs, the patient is given straight away morphia injection, the foot of the bed is raised, and ice is kept over the abdomen. Fluid and food are withheld for 24 hours. Calcium chloride or calcium gluconate is given intravenously. 500 mgm. of vitamin C is given intravenously daily for four days after the hæmorrhage has stopped and thereafter by mouth, since deficiency of this substance is believed to increase the fragility of the capillaries and to delay the healing of ulcers. Portnoy and Wilkinson found severe degrees of deficiency of vitamin C in hæmorrhage from peptic ulcer. Transfusion of blood is given when a donor is available.

For pneumonic cases M.&B. 693 is given. Retention of urine is treated first with hot fomentation over the bladder, and an enema. If this fails doryl is given by mouth. Catheterization is done only as a last resort. In toxic cases where there are signs of peripheral circulatory failure, 50 per cent glucose is given intravenously as required. Cardiazol, coramine or camphor in oil and strychnine injections are given as needed. Cortin (supra-renal cortical extract) was given in two cases and the result was encouraging. Saline by drip method per rectum was tried for toxic cases and the result was not encouraging.

Complications

There was an unusually large number of cases with lung affections in this series and many cases with distension of the abdomen. There were 23 cases of intestinal hæmorrhage of whom 12 were cured and 11 died. There was one case of perforation and as the patient was *in extremis* operative treatment was refused by the relatives. One man aged 24 years, a month after his discharge from the hospital, while working in his office suddenly became unconscious and fell down with a hemiplegia of the left side. Speech was also affected. Blood pressure 120/80; Wassermann reaction was weak positive; urine was normal. He regained consciousness, power of speech and use of the affected limbs within a

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V FIVE-YEAR SALVAGE OF CARCINOMA CERVIX CASES TREATED BY RADICAL VAGINAL OPERATION

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THE rationale of the treatment of carcinoma cervix is still a controversial subject. While the general trend of opinion is going towards radiation therapy, the surgical treatment still occupies

(Continued from previous column)

week—perhaps a case of cerebral embolism (see table II).

TABLE II
Complications

Bronchitis ..	53	Otitis ..	6
Pneumonia and broncho - pneumonia.	70	Epistaxis ..	1
Pleurisy ..	5	Hæmaturia ..	1
Diarrhoea ..	41	Neuritis ..	8
Distension ..	Many cases	Macular rash ..	4
Hæmorrhage ..	23	Abortion ..	2
Perforation ..	1	<i>B. coli</i> infection	1
Parotitis ..	10	Multiple abscesses	4
		Periosteal abscess	1
		Cerebral embolism	1
		Relapse ..	31

Thirty-one cases relapsed. The relapse occurred on an average on the 11th day of normal temperature. The earliest was on the 5th day and latest on the 17th day. Secondary fever lasted on an average for 13 days. Five days was the shortest duration and 28 days was the longest. Two cases relapsed twice.

Mortality

Three-hundred and fifty-six patients were admitted and 72 died giving a mortality rate of 20.22 per cent. If 19 patients who were admitted moribund and died within 24 hours are excluded, the mortality rate is 14.87 per cent only (see table III).

TABLE III
Causes of death

1. Broncho-pneumonia.	8	5. Cardio-vascular failure.	16
2. Pneumonia and hypostatic pneumonia.	7	6. Perforation ..	1
3. Toxæmia ..	10	7. Admitted moribund. (Died within 24 hours after admission.)	19
4. Hæmorrhage	11		72

Six cases died within 72 hours of admission. These are included in cardio-vascular failure and toxæmia.

I am grateful to my chief, Colonel J. C. Pyper, O.B.E., I.M.S., for encouraging me to send this article for publication.

a great and well-established place in its management. Moreover, some workers who were previously converts of radiation therapy are coming back again to surgery supplemented by radiation therapy. So far as surgical procedure is concerned, the difficulty lies in proper and efficient technique of the operations, which are either Wertheim's radical abdominal operation, or Schauta's radical vaginal operation. Wertheim's operation is attended with enormous primary mortality, although satisfactory end-results have been found by Victor Bonny. Schauta's operation has been popularized and greatly improved by Adler by supplementing it with radiation therapy; but it is a difficult operation if conscientiously done. According to Stoeckel, most of the surgeons, while professing to perform the radical operation, are satisfied with a simple hysterectomy, thus bringing discredit to this particular method of treatment.

Before evaluating the end-results, I would like to give a few practical hints as regards the technique of the operation. The first point worth mentioning is that this operation is not a plain and simple vaginal hysterectomy; secondly, the uterus should be well dissected out to facilitate the removal of the greatest amount of parametrial tissue; thirdly, treatment of a carcinoma cervix case should not be considered complete unless and until the operation is supplemented by a thorough and intensive course of post-operative radiation. Here the difficulty is experienced by most gynaecologists, as they are either not quite conversant with the proper technique of the radiation therapy, or radium and deep x-ray apparatus are not available to them. It will be as bad as giving no treatment if only a partial or an incomplete radiation therapy is administered or if this treatment be deferred to an uncertain period by the x-ray department.

In a previous communique (Mitra, 1939) I gave a detailed technique of this operation with the immediate post-operative results and complications. It is now time to give a 5-year salvage of such cases. I shall try to put my results in tabular form. Table I shows the total number of carcinoma cervix cases operated on, with the incidence of primary mortality. The primary mortality rate in my series is 5.4 per cent. Out of 6 fatal cases, 3 died of shock, 1 of sepsis, 1 of pulmonary embolism and 1 of staphylococcus septicaemia. This is in conformity with the average primary mortality rate in radical vaginal operations, *i.e.*, 7.7 per cent (Mickuliez Radecki), whereas the average primary mortality rate in radical abdominal operations (the so-called Wertheim's operation) is 18 per cent (Pankow). Table II shows the distribution of cases according to different grades as classified by the League of Nations. An incidence of primary mortality has also been given against different grades. This table shows that 2 patients of the first grade died, of two rare complications, namely, pulmonary embolism and staphylococcus septicaemia. Three patients

TABLE I

Total number of carcinoma cervix cases operated on, with the incidence of primary mortality

	Total number	Primary mortality	
Seva Sadan	94	4	3 died of shock. 1 died of sepsis. 1 died of pulmonary embolism. 1 died of staphylococcus septicaemia.
Carmichael Medical College.	15	2	
Madras Govt. Hospital for Women.	1	nil	
Total	110	6 (5.4%)	

TABLE II

Distribution of cases according to the grades of the League of Nations with incidence of primary mortality

Grade	Total number	Primary mortality	
I	17	2	1 died of pulmonary embolism. 1 died of staphylococcus septicaemia. 1 died of shock. 1 died of sepsis. Shock.
II	58	2	
III	35	2	
IV	nil	..	

died of shock, which could be accounted for by their devitalized and anæmic condition when they come for treatment.

Although much work has been done to find out the optimum dose of radium treatment, the ideal one has not yet been found. Generally 6,000 'milligramme hours' is unsatisfactory as a method of dosage in that it neglects the important factors of distribution and radium-tumour distance and so cannot be accurately and satisfactorily utilized by others.

Recent investigations recommend 10,000 r radium as the lethal dose*; similarly 5,000 r x-ray with 2.5 cu. H.V.L. and average 1.09 A.U. has been found to be the lethal x-ray dose in about a month's time. Figure 1 shows the isodosis chart for the radium tubes pointing out how the intensity of radium r-unit decreases according as the distance increases. This figure shows that within 3 cm. from the site of radium application, the intensity is reduced to half and within 6 cm. it is reduced to about one-sixth the original intensity. This shows that unless the

*7.6 r/hour is the radiation measured at 1 cm. from a point source of 1 mg. of radium filtered by 1 mm. platinum.

distant parametrial tissues are further exposed by x-ray, the effective lethal dose will not be available there. Figure 2 shows the isodosis chart of x-ray in the pelvis where the most lateral part of the pelvis will receive an effective dose. Table III shows the deep x-ray dosage given by the writer in his cancer cervix cases.

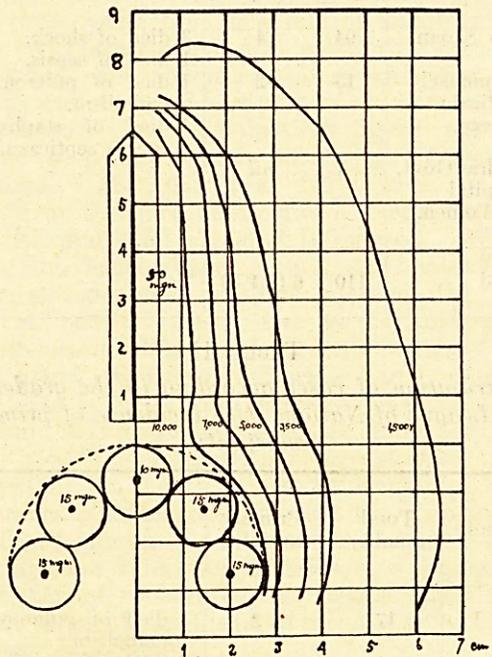


Fig. 1.—Isodosis chart for radium tubes: within 3 cm. from the site of application, the intensity is reduced to half and within 6 cm. to about one-sixth the original intensity.

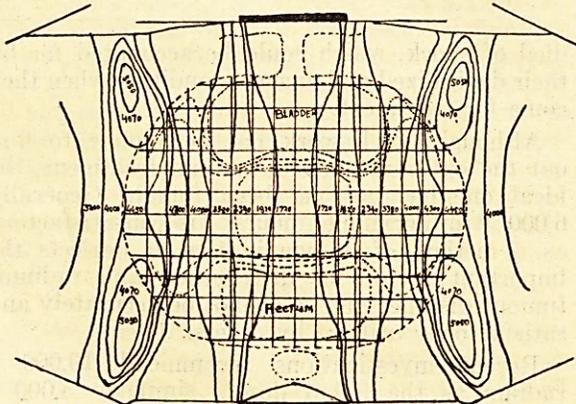


Fig. 2.—Isodosis chart for x-ray in the pelvis where the most lateral part receives an effective dose.

Table IV shows the results of operation given year by year up to 5 years. Twenty-eight cases have already been lost sight of and, not being able to trace them, we have taken them as dead to evaluate our 5-year end-results.

Table V shows 5-year end-results of carcinoma cervix cases treated only by radiation (1926 to 1932).

Table VI shows 5-year salvage of carcinoma cervix cases treated by operation and radiation

TABLE III

Deep x-ray technique for carcinoma-cervix cases—5 fields: 2 abdominal, 2 gluteal, 1 vulval, 220 K.V., 15 mA, 1.5 m.Cu., 50 cm. F. S. D. 25 exposures—at 300 r daily.

Day	Skin dose in air	Effective dose 10 cm. deep (33%) including back scatter (15%)*	Daily loss at 8%	Total effective dose
1st	300	$\frac{300 + 45}{3} = 145$	..	145
2nd	300	$115 + 115 = 230$	9	221
3rd	300	$115 + 221 = 336$	17	319
4th	300	$115 + 319 = 434$	25	409
5th	300	$115 + 409 = 524$	32	492
6th	300	$115 + 492 = 607$	39	568
7th	300	$115 + 568 = 683$	45	638
8th	300	$115 + 638 = 753$	50	703
9th	300	$115 + 703 = 818$	60	758
10th	300	$115 + 758 = 873$	65	808
11th	300	$115 + 808 = 923$	69	854
12th	300	$115 + 854 = 969$	72	897
13th	300	$115 + 897 = 1,012$	76	936
14th	300	$115 + 936 = 1,051$	79	972
15th	300	$115 + 972 = 1,087$	82	1,005
16th	300	$115 + 1,005 = 1,120$	84	1,036
17th	300	$115 + 1,036 = 1,151$	87	1,064
18th	300	$115 + 1,064 = 1,179$	89	1,090
19th	300	$115 + 1,090 = 1,205$	91	1,114
20th	300	$115 + 1,114 = 1,229$	93	1,136
21st	300	$115 + 1,136 = 1,251$	95	1,156
22nd	300	$115 + 1,156 = 1,271$	96	1,175
23rd	300	$115 + 1,175 = 1,290$	98	1,192
24th	300	$115 + 1,192 = 1,307$	99	1,208
25th	300	$115 + 1,208 = 1,323$	100	1,223

* Maximum back scatter with 1.5 m.cu. H.V.L. and with an area 10 × 10 at 10 cm. depth is 15 per cent.

TABLE IV

Evaluation of results of operative cases

Year	Total cases	Living years					L.S.O.	REMARKS
		1	2	3	4	5		
1932	4	4	1	1	1	1	1	(1 fr. 1st year)
1933	4	4	2	1	1	1	2	(2 fr. 1st year)
1934	17	17	10	7	7	4	6	(3, 1, 1 and 1 fr. 1st, 2nd, 4th and 5th year)
1935	12	12	11	9	7	4	3	(3 fr. 4th year)
1936	16	16	10	6	5	..	7	(4, 2 and 1 fr. 1st, 2nd and 3rd year)
1937	19	19	10	9	..	..	5	(5 fr. 1st year)
1938	9	9	4	..	..	..	3	(3 fr. 1st year)
1939	4	4	..	..	..	..	1	(1 fr. 1st year)

during the years 1932 to 1935. A comparative review of the two foregoing tables will clearly show that on an average the operative cases give better end-results. Taking the first three grades together the operative cases yield 27 per cent 5-year salvage whereas cases treated only by radiation yield 14.4 per cent.

Table VII gives a comparative statement of the world literature drawn up by Adler with the author's result appended below. This table shows that, in spite of manifold difficulties, our

results are comparable with the results obtained in other parts of the world.

TABLE V

5-year results of carcinoma cervix cases treated only by radiation (1926 to 1932)

Stages	Total number of cases	LIVING AFTER 5 YEARS	
		Number	Percentage
I	13	7	53.4
II	56	21	37.5
III	361	34	9.4
IV	60	1	1.7
All stages together.	490	63	12.9
I, II and III combined.	430	62	14.41

TABLE VI

5-year results of carcinoma cervix cases operated on during 1932 to 1935

Grade	Total number	LIVING	
		Number	Percentage
I	2	1	50
II	20	8	40
III	15	1	7
IV	nil	..	..
All grades together.	37	10	27

TABLE VII

A comparative statement of world literature on 5-year results of carcinoma cervix cases, with the author's results appended.

Radiation	World literature ..	17.45%		
	Forsell-Heyman ..		23.3%	(21.8%)
	Bowing-Fricke ..		23.0%	
	George Gray Ward		23.6%	
Operation	World literature ..	19.1%		
	Bonney (abd.) ..		25.0%	
	Schauta (vag.) ..		22.5%	
Operation + Radiation	Franque (abd.) ..		28.1%	
	Peham (vag.) ..		28.0%	
Do.	Adler (vag.), 3rd method.		31.8%	
	Mitra (vag.) ..		27.0%	

Summary

1. An analysis of 110 cases of carcinoma cervix, operated on by the radical vaginal method after Schauta and subsequently irradiated by radium and deep x-rays, has been given.
 2. Primary mortality is 5.4 per cent.
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PNEUMONITIS

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APART from the classical examples of lobar and broncho-pneumonia, the differences between the lung diseases of adults and of children are considerable, and the so-called atypical forms, including central pneumonia, are common in the latter. Recently, cases with a low-grade inflammatory pulmonary change of a benign nature have been described by both American and English workers. The symptoms include a cough, low pyrexia, and lassitude. The physical examination does not reveal any evidence of pneumonia. Weak breath sounds and a few râles are perhaps the only auscultatory findings. The respiration rate is not increased, and there is no toxæmia. The x-ray film reveals some opacity suggesting a localized inflammatory process in the lung. There is nothing in the history to suggest that the condition is the end of a pneumonia, or an unresolved pneumonia. The disease runs a benign course and usually clears up rapidly.

The term 'pneumonitis' has been applied to this clinical entity; it has the same meaning as pneumonia, namely, an inflammatory condition of the lung, a different word being used to indicate the non-specific nature of the reaction, as well as a different ætiology.

In this connexion the following case seems worth reporting :—

A Jewish female child, aged 1½ years, was admitted into the Carmichael Hospital for Tropical Diseases on the 24th April, 1939, with a complaint of cough and low

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3. A few hints on the technique of the operation have been given.

4. The principles of post-operative radiation technique have been explained.

5. A comparative statement of evaluation of 5-year end-results of both surgically treated and irradiated cases has been given. Taking I, II and III grades together, 5-year cure of surgically treated cases (supplemented by radiation) is 27 per cent against 14.4 per cent in only irradiated cases.

6. It is possible to improve further the end-results if the cases can be detected at earlier stages, if proper pre-operative treatment can be given, if the technique of the operation be followed efficiently, and if radium and deep x-ray apparatus be at the disposal of the surgeon, and finally the number of 'lost sight of' cases can be minimized.

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