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DR. DOSSIBAI J. R. DADABHOY BOMBAY OBSTETRIC & GYNAECOLOGICAL SOCIETY'S SILVER JUBILEE ORATION*

JAPANESE TECHNIQUE OF RADICAL OPERATION FOR CARCINOMA OF THE CERVIX

by

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It is for me a big pleasure and honour that I have been invited to your meeting on Dr. Dossibai J. R. Dadabhoy's Memorial Day as a guest speaker in order to deliver the first lecture for the Bombay Obstetric and Gynaecological Society's Silver Jubilee Oration. First of all, I wish to express my profound regard to late Dr. Dadabhoy and appreciate most sincerely her donation to the Bombay Society for the purpose of promoting scientific research work in obstetrics and gynaecology.

Now, I want to talk on "Japanese techniques of radical operation for carcinoma of the cervix". First, I will demonstrate to you my motion picture, then I will show you slides which explain in detail the techniques, and discuss modifications of some Japanese authors, and finally I will report the results obtained by my techniques, adding some data on pelvic lymph nodes involved by carcinoma.

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* Delivered on 16th January 1962.

Introduction

The Okabayashi operation for carcinoma of the cervix was first described by Prof. Dr. H. Okabayashi in 1921 and then modified in 1928. He was Professor of Obstetrics and Gynaecology of Kyoto Imperial University, Japan, and was engaged with this work in the Department of Obstetrics and Gynaecology. I joined

him in his work as his assistant in 1925. In 1934 I was promoted to Professor at Okayama University and Chairman of Obstetrics and Gynaecology. At that time this technique was completed and, therefore, I planned to try it from the very beginning at Okayama. The total number of cases operated by Okabayashi technique was about 2,700 at the end of 1961. It was performed for cases in Stages I and II chiefly and sometimes in Stage III. Besides, radiation cases, for all stages, amounted to almost the same total, i.e. 2,500. Selection of operation or radiation was made quite freely by the patient and her family, thus making possible a true comparison in evaluating five-year cure rate of both groups.

The Okabayashi operation has been adopted by many authors in Japan. It is now the standard type of operation in Japan. Most of the 92 institutions and hospitals affiliated to the Japanese Committee of Carcinoma of the Uterus have adopted its original technique or slightly modified ones, and therefore, I may call them altogether "The Japanese technique of radical operation" or "The Okabayashi operation".

This operation consists of extensive abdominal hysterectomy and complete pelvic lymphadenectomy. It is "radical" because (1) the resection of the cardinal ligaments is more extensive than in Wertheim's operation, (2) resection of the vesico-uterine ligaments is extensive and complete, and (3) removal of the pelvic lymph nodes is complete. The operative procedure can be done systematically and technically uniformly for all cases, in either Stage I or Stage II.

Film Presentation & Slide Demonstration

Some Essential Features of the Okabayashi Operation

The posterior procedures, such as isolation of the rectum and resection of the cardinal and uterosacral ligaments, are done prior to the anterior procedure. This makes possible an easier anterior manipulation and better exposure of the cervix, drawn up as it is to the level of the abdominal wall.

1. *Resection of the cardinal ligament:* A rectum retractor is used to keep the rectum away from the recto-vaginal fossa. A vesico-uterine fossa is found and widened in order to have the cardinal ligament isolated with its whole span. By cutting strong fibrous tissue which spans from its medial surface to the pelvic attachment, it is reduced in thickness at a point of incision close to the pelvic wall. The ligament is doubly clamped with two curved Pean forceps laid parallel and incised between the clamps.

2. *Division of the vesico-uterine ligament and the paravaginal tissue:* Special technique is applied in order to separate the ureter and the bladder from the vesico-uterine ligament (both its superficial and deep layers) and with no excessive hemorrhage. Then, incision of the deep uterosacral ligament on the posterior part of the cervix and that of the paravaginal connective tissue on the anterior part of the vagina is made, so that the vagina becomes isolated completely with the uterus and the wide paratissues attached. This manipulation is very systematic and

peculiar to the Okabayashi operation.

3. *Pelvic lymphadenectomy*: The removal is carried out by sharp and blunt dissection of the nodes and the surrounding fat and areolar tissues en bloc. Complete removal of all nodes, whether normal in size or swollen, and the surrounding fat and areolar tissue with lymph vessels is very important in obtaining a permanent cure.

Results of Treatment

It is imperative for correct evaluation of a method, that we examine first a five-year cure of all patients treated in one hospital without exception, either surgical or radiation, during a certain period of time. If the cure rate of a method or some combination of methods is good, then it may be justified. For evaluation of my own technique I have prepared reports of three different kinds: (1) Annual Report of Stockholm for comparison, (2) Annual Report of the Japanese Committee, and (3) Annual Report of Okayama University Medical School. The three reports belong to the same period.

Table I shows a five-year recovery rate of patients treated during 1947-1951 in hospitals affiliated to the Annual Report, Stockholm. (Okayama University Medical School is also one of the members). Its total cure rate was 42.8%.

Distribution of stages is shown in Table II. In comparison to these figures, I will show you a five-year cure reported by 19 hospitals in Japan affiliated to the Japanese Committee of Carcinoma of the Uterus.

TABLE I

Five-Year Recovery Rate for the Latest Five Years (1947-1951), *The Annual Report, Vol. II,* 1958, *Stockholm.*

		Patients treated	Alive with no evidence of disease	Relative apparent recovery
Stage	I	8,746	6,120	70.0%
	II	16,046	7,797	48.6%
	III	14,352	3,913	27.3%
	IV	2,986	201	6.7%
Total		42,130	18,031	42.8%

TABLE II

Distribution by Stages (Stockholm)

		Total (Before 1951)	%	Latest 5 years (1947-1951)	%
Stage	I	22,516	18.7	8,746	20.7
	II	45,209	37.4	16,046	38.1
	III	42,511	35.2	14,352	34.1
	IV	10,491	8.7	2,986	7.1
Unclassified		11	0.0		
Total		120,738	100.0	42,130	100.0

TABLE III
Five-Year Recovery Rate for 1953
19 Hospitals in Japan

	Patients treated	Alive with no evidence of the disease	Relative apparent recovery
Stage I	362	286	79.0%
II	723	393	54.4%
III	567	180	31.7%
IV	154	9	5.8%
Total	1,806	868	48.1%

Table III shows that 48.1% cure was obtained for the year 1953, which was better than that of the International Annual Report. The stage distribution was almost the same, as shown in Table IV.

TABLE IV
Distribution by Stages (Japanese Committee) 1953

	Total	%
Stage I	362	20.0
II	723	40.0
III	567	31.4
IV	154	8.5
Total	1,806	100.0

Comparing the two tables, Table I and Table III, it can be said that the cure rate for stages I and II was better in Japan (statistically significant) than in the International Report, namely in Japan 79% were cured in Stage I and 54.4% in Stage II, while in Stockholm 70.0% were cured in Stage I and 48.6% in Stage II. What was the cause? The statistics of Japan contained 55.9% of radical operation, while the International Statistics 12.6%. There was a big difference in operability. In Japan, the result of irradiation was not better than that of other countries. For example, the result at Okayama is shown in Table V.

TABLE V
Five-Year Salvage at Okayama (1953-54)

	Operation with Postoperative Radiation						Radiation only			Total		
	Okabayashi (with lymph-adenectomy)			Simple Hysterectomy (without lymphade-nectomy)								
Stage	Case	Cure	%	Case	Cure	%	Case	Cure	%	Case	Cure	%
I	279	247	88.5	66	47	71.2	95	65	68.4	440	359	81.6
II	1,028	658	64.0	7	1	14.3	522	237	45.4	1,557	896	57.5
III	65	30	46.2	1	0	0	893	249	27.9	959	279	29.1
IV	0			0			139	16	11.5	139	16	11.5
Total	1,372	935	68.1	74	48	64.9	1,649	567	34.4	3,095	1550	50.1

This is a five-year cure rate at Okayama. Stage I showed a cure rate of 88.5% and Stage II 64.0% by Okabayashi, while by simple hysterectomy without lymphadenectomy Stage I showed a cure rate of 71.2% and Stage II 14.3%.

Table VI shows a five-year cure rate of patients treated in 1954, the latest year, and you will find how important is the lymphadenectomy in order to obtain a good salvage rate. A cure rate by radiation therapy was 68.4% for Stage I and 45.4% for Stage II. Its result for Stage I coincided with that of simple hysterectomy, suggesting less effect of radiation upon lymph nodes.

In Table VII you can see that pelvic nodes were positive in 12.0% even for Stage I, 23.7% for Stage II and 50.0% for Stage III. It can be said, therefore, that even Stage I case should be operated by Okabayashi technique or extensively with pelvic node dissection, and a simple hysterectomy without dissection should be abandoned.

Table VIII shows a relation between size of nodes and positive ones.

TABLE VI

Five-Year Salvage at Okayama for the Year 1954

	Operation with Postoperative Radiation						Radiation only			Total		
	Okabayashi (with Lymphadenectomy			Simple Hysterectomy (without Lymphadenectomy)								
Stage	Case	Cure	%	Case	Cure	%	Case	Cure	%	Case	Cure	%
I	40	37	92.5	2	2	100	6	3	50.0	48	42	87.5
II	111	76	68.5	0	0		36	14	38.9	147	90	61.2
III	2	1	50.0	0	0		60	24	40.0	62	25	40.3
IV	0	0		0	0		8	0		8	0	0.0
Total	153	114	74.5	2	2		110	41	37.3	265	157	59.2

TABLE VII

Stages and Positive Nodes (Okayama)

Stage	Lymph nodes	Positive	Negative	Total
I		9 (12.0%)	66	75
II		79 (23.7%)	254	333
III		4 (50.0%)	4	8
Total		92 (22.1%)	324	416

TABLE VIII

Size of Nodes and Metastases (Okayama)

Size	Positive	Negative	Total
Millet	4 (1.2%)	326	330
Red bean	13 (2.0%)	634	647
Soya bean	26 (3.2%)	777	803
Broad bean	40 (4.7%)	816	856
Over thumb	46 (25.4%)	135	181
Total	129 (4.6%)	2,688	2,817

TABLE IX

Site of Lymph Nodes and Metastases (Okayama)

Site	Hypo-gastr.	med. iliac	sup. iliac	inf. iliac	supra femor	Obtura-tor	Para-metr	Sacral	Vesical	Total
	l : r	l : r	l : r	l : r	l : r	l : r	l : r	l : r	l : r	l : r
No. of nodes	74 85	3 4	15 22	57 61	56 57	72 58	25 26	1 0	2 0	305 313
Positive	10 10	1 1	0 2	2 5	0 0	2 3	3 0	0 0	0 0	17 21
	20	1	2	7	0	5	3	0	0	38
%	12.6	14.3	5.4	5.9		3.8	5.9			

Table IX shows sites or locality of positive nodes in the pelvis.

TABLE X

Positive Nodes and Five-Year Cure (Okayama)

	Stage	Case	Cure	%
Positive	I	12	6	50.0
	II	98	29	29.6
	III	6	2	33.3
	Total	116	37	31.9
Negative	I	90	85	94.4
	II	315	224	71.1
	III	6	5	83.3
	Total	411	314	76.4

Table X shows relationship between positive nodes and a five-year cure rate you will find that a better cure rate has been obtained for cases with negative nodes.

TABLE XI

Number of Positive Nodes and Cure (Okayama)

No. of pos. nodes	Case	Cure	%
1	54	25	46.3
2	31	8	25.8
3	15	3	20.0
4	5	0	0.0
5	5	1	20.0
Over 6	6	0	0.0
Total	116	37	31.9
Over 2	62	12	19.4

Table XI shows relationship between number of nodes and a five-year cure rate, in which cases with 1 positive node 46.3% were cured, while in those of more than 2 positive nodes only 19.4% were cured.

Discussion

Speaking of radiation therapy, there are many authors who believe that lymph nodes in the pelvis are to a certain extent radio-resistant. A complete removal of the nodes should be justified in treatment of carcinoma of the cervix, until a new powerful method of radiation for destroying metastases in lymph nodes completely would be found in the future. I want to show some slides of cancer involvement in nodes and in the parametrium even in cases of Stage I, convincing that even Stage I case should be operated upon extensively. This was the reason why I abandoned a simple hysterectomy for Stage I and maintain to perform the Okabayashi instead.

Conclusion

I have demonstrated a motion picture of radical operation for carcinoma of the cervix (the Okabayashi operation), and discussed in detail some essential points peculiar to this technique by using slides. Further I reported the five-year results obtained by this operation. I wish to conclude that the better salvage for Stages I and II at Okayama and also in Japan was due to a big percentage of radical operations in comparison with the data given by the Annual Report, Stockholm, and also due to the Okabayashi technique which includes complete removal of all pelvic nodes for Stages I and II, and it was proven that the data were evaluated statistically significant.