

COMBINED RADIOTHERAPY AND SURGERY IN CERVIX

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Surgery and radiotherapy have been the two classic types of treatments used in treating cancer of the cervix. At first these treatments were used independently, but later on papers were published showing the results of combining the two types of therapy. In some institutions surgery was employed after irradiation, and in others the reverse method was used. The improvements in the technique of radiotherapy and the use of "en bloc" radical surgery (Wertheim-Meigs operation) brought about better end-results, even when employed independently.

About 25 years ago one of us (A. F. M.) observed that the cases in which the patient was operated upon after irradiation showed a significant percentage of residual tumor in the cervix. During the 1954 International Cancer Congress held in São Paulo (Brazil), one of us (F. G.) reported that after radiumtherapy, 20% of the surgical specimens contained residual cancer. This, we believe, is enough proof that radiation alone (we used both Regaud and Manchester techniques) does not sterilize the cervix sufficiently to eradicate the disease.

However the combination of radiumtherapy and surgery seems to reduce the incidence of recurrence at the vaginal cuff as well as that of metastatic lymph nodes when compared with the group of patients treated by surgery alone.

MATERIAL AND METHODS

From August 1953 to August 1958, 1199 charity cases of cancer of the cervix were examined at our gynecological service, and among them 196 cases were submitted to a radical hysterectomy with pelvic lymph node dissection in continuity (Wertheim-Meigs operation). The remaining 1003 cases were handled in a different way, comprising pelvic exenteration, exclusive radiation, chemotherapy, refusal of proposed treatment and so forth. All the 196 cases were previously irradiated with radium according to the modified Manchester technique, delivering 8000 r to point A in two separate stages with a 3 day interval. The surgery was then carried out 60 to 90 days afterwards.

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The surgical specimens were carefully examined, all the lymph nodes were sectioned as well as uterus, tubes, ovaries, parametria and vagina. Post-operative irradiation was given only to the cases found to have positive lymph nodes, in an effort to complete a total dose of 7000 r's to point B.

The lymph node dissection at the time of surgery begins at the bifurcation of the aorta and continues along the common and external iliac vessels, widely dissecting the obturator fossa and the pelvic floor. The vagina is resected with a margin of safety of only 1 to 3 cm when a complete healing of the cervix is attained by radiumtherapy. Wider vaginal resections are carried out in cases where the healing of the cervix has not been complete. Wherever possible the surgical specimen should be removed in continuity.

All patients with stages I, II and III (League of Nations Classification) were submitted to radical surgery, except in the following instances: 1) marked obesity; 2) serious cardiovascular disease; 3) serious urinary alterations or infections; 4) poor general condition; 5) advanced lesion grown beyond the limits of adequate resectability.

Until 1955 some of the patients with cancer of the cervix were examined and treated by general surgeons not necessarily belonging to the gynecological service. However, from 1956 on, all the cases were taken care of by the gynecological service in which a uniform therapeutic program was carried out. Statistically speaking the results thereafter were improved in respect to mortality, complications and survival. A fairly large number of these patients were operated upon by the surgical residents, since our institution is a teaching hospital functioning as a post-graduate training center for cancer surgery. The senior-resident (3rd year) usually performs many of the operations in the service, but he is always assisted by one of the attending surgeons on the staff.

From 1959 on, a change in the therapeutic plan was adopted consisting of the use of cobalt treatment immediately following radiumtherapy and just before surgery. This group of patients is being studied at the present time and the results of their treatment will be published in the near future.

ANALYSIS AND DISCUSSION OF MATERIAL

Table A shows the number of cases operated upon, their distribution according to stages, and their 5-year

survival. In stage I* there were 32 cases, 26 of which (81.2%) were free of disease during 5 or more years. In the stage II group, out of 122 cases, 76 (62.2%) were cured for a period of 5 years or more. Patients classified in the stage III group presented a 42.8% 5-year cure rate, that is, 18 cases out of 42 were free of disease during this period. As an over-all figure, out of the 196 cases, 120 (or 61.2%) were free of disease after 5 or more years.

Of these 196 cases a total of 16 were lost track of, 2 belonging to stage I, 8 to stage II and 6 to stage III. One of the stage I patients in this group had been examined 3 and half years after conclusion of her treatment, and at that time showed no evidence of disease. According to our statistics, patients with a 3 year survival have only a 1.2 percent chance of having a recurrence, which would indicate that the above-mentioned patient is most probably alive and well. This inturn would increase our 5-year survival rate in stage I cases from 81.2% to 81.3%.

TABLE A

5-YEAR SURVIVAL RATES ACCORDING TO STAGES

Stage	N. of Cases	5-Year Survival	%
I	32	26	81.2
II	122	76	62.2
III	42	18	42.8
Total	196	120	61.2

In spite of our best effort at following-up our patients, 8.1% of them were lost track of due to several reasons beyond our control. Since our patients come not only from the state of São Paulo (Brazil) (with over 400 towns) but from the other 22 states of Brazil as well as from several neighboring countries (Argentina, Bolivia, Perú, Paraguay) our means of communication are very precarious and at times non-existent. Added to this, the general lack of education among the rural population would account for much of the difficulty of obtaining the necessary follow-up data.

Actually, for a country like Brazil a follow-up of 91.9% represents a tremendous effort on the part of our social service department.

Had it been possible to achieve a 100% follow-up, we believe that our figures would show a slightly better 5-year survival rate.

Table B, referring to these same 196 cases, shows the percentage of positive lymph nodes according to the stages of the disease presented by the patients. The incidence of positive lymph nodes in stages II and III is lower in our series than in the corresponding series presented by other authors who do not use pre-operative radiation.

* After mailing our summary, one of the patients of whom we lost track, was found to be alive and free of disease, which accounts for the increase of the survival rate of stage I cases from 78.1% to 81.2%.

TABLE B

LYMPH NODE METASTASIS ACCORDING TO STAGES

Stage	N. of Cases	Posit: Lymph Nodes	%
I	32	5	15.6
II	122	29	23.7
III	42	11	26.1
Total	196	45	22.9

Table C shows the percentage of positive and negative lymph nodes in these patients who survived for 5 or more years. The percentage of positive lymph nodes was about the same in patients belonging to stages I and II, 19.2% for the former and 19.7% for the latter. In stage III cases the percentage of positive lymph nodes was 27.7%.

TABLE C

PERCENTAGE OF POSITIVE AND NEGATIVE LYMPH NODES AMONG THE PATIENTS WITH 5-YEAR SURVIVAL

Stage	I (32 cases)	II (122 cases)	III (42 cases)
5-year survival	26-81.2%	76-62.2%	18-42.8%
Lymph nodes posit.	5-19.2%	15-19.7%	5-27.7%
Lymph nodes neg.	21-80.7%	61-80.3%	13-72.3%

It is known that a small number of patients with positive lymph nodes after radiation may survive for five years or more without surgery. There are two reasons for this, the first being that the radiation often produces a type of fibrotic capsule which encloses the lymph node and thus prevents the dissemination of the cells. The second being the immunological defenses of the patient.

TABLE C,

5-YEAR SURVIVAL RATE AMONG PATIENTS WITH POSITIVE LYMPH NODES

Stages and N. of Cases	N. of Cases with Posit. Lymph Nodes	N. of Cases Alive	5-Year Survival
I-(32 cases)	5	5	100%
II-(122 cases)	29	15	51.7%
III-(42 cases)	11	5	45.4%

Table C1 shows the percentage of patients with positive lymph nodes who are alive 5 years or more.

Table D shows the percentage of 5-year survival in stages I and II together to be 66.2%.

TABLE D

5-YEAR SURVIVAL RATE — STAGE I AND II TOGETHER

Stage	N. of Cases	5-Year Survival
I-II	154	102-66.2%