Influence of Preoperative Radiotherapy on Postoperative Morbidity in Patients with Endometrial Carcinoma

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Summary. In a total of 284 patients with endometrial carcinoma, stage I, the influence of preoperative intracavitary radiation on the postoperative morbidity was evaluated. In preoperatively radiated patients there was a postoperative increase in the number of wound healing disorders, urinary tract infections, febrile courses, and in the total number of patients with complications. Moreover, surgical difficulties were increased. These increases are statistically significant. Advantages and disadvantages of preoperative radiation are discussed. The influence of a febrile postoperative course on the 5-years-survival-rate is considered.

Key words: Endometrial Cancer-Postoperative Morbidity.

In spite of the fact that surgical and most radiotherapeutic technics utilized in the management of endometrial carcinoma have been available for years, differences of opinion remain regarding the optimal mode of therapy. In so far as the general operability of the patient permits, recommendations range from radical surgery [17, 19, 27] to total hysterectomy combined with bilateral salpingo-oophorectomy [2, 3, 14]. In order to reduce the frequency of recurrences, many authors use a combination of surgery and radiotherapy [15, 26]. There is, however, no agreement as to when radiotherapy should be applied. Many authors favor preoperative radiation [6, 8, 18, 21] and others postoperative radiation treatment [2, 9, 13]. This study was undertaken in order to evaluate the effects of preoperative radiotherapy on postoperative morbidity in patients with endometrial carcinoma. To our knowledge no investigation of this type has been reported. Although Kuhn
(1965) states that preoperative radiation therapy in endometrial carcinoma did not increase the difficulties during the operation, and above all, bleeding complications were rare, he makes no mention of the patients' postoperative condition. Other authors found an increase of postoperative morbidity after preoperative radiation in carcinoma of the uterine cervix [24, 29, 31]. In addition, there is a known increase in post-hysterectomy-morbidity after preoperative conisation, which is also a manipulation in the operative area resulting in an inflammatory response (for review see 32).

**Material and Method**

Two groups, totaling 284 patients, were treated for endometrial carcinoma, stage I from 1965 to 1972 at the Tuebingen Universitäts-Frauenklinik. The first group of 142 patients (1965–1968) was treated by preoperative intracavitary radiation delivered to the body of the uterus by packed cobalt 60 pearls up to doses of 3000–4000 R at a distance of 1.5 cm from the endometrium (calculation according to Dörrfuß, 1953). The operation was performed within two to four weeks later (see Table 1). This group was compared with another group of 142 patients (1969–1972) who first underwent surgery and then received radiation treatment. In order to obtain homogeneous groups, vaginal operations were excluded, thus leaving a preoperative radiated group of 131 and a postoperative radiated group of 118 patients. Total abdominal hysterectomies with bilateral salpingo-oophorectomy were performed using the same technique on each patient. The average age of the first group was 60.66 years and of the second group 60.01 years. The average overweight (calculated according to Documenta Geigy 1968) was 13.1 and 10.5 kg respectively. The two groups compared were, therefore, homogeneous and any differences observed postoperatively would be due to the preoperative radiation treatment.

For the assessment of postoperative morbidity the following 16 criteria were used: wound healing disorders (hematoma, inflammatory infiltration, or abscess) of the abdominal or vaginal wound, bleeding from the vaginal stump, parametritis, peritonitis, ileus, urinary tract infection, thrombosis and thrombophlebitis, complications from the respiratory tract, embolism, fistula, repeated surgery required, complications during surgery, fever higher than 39°C and death. Moreover, the number of patients with one or more of these complications was assessed and finally the average operating times of the pre- and postoperative radiated groups were compared.

For the statistical evaluation the Chi-square-test was used.

**Results**

Postoperative complications were more frequent in the preoperative radiated group of patients (see Table 2). Significant increases were found in febrile course (temperatures over 39°C), wound healing disorders of the vagina, and urinary