MORBIDITY IN OBESE AND NONOBESE PATIENTS FOLLOWING GYNECOLOGIC SURGERY FOR CANCER

George W. Chapman Jr., MD, John B. Mailhes, PhD, and Horace E. Thompson, MD
Shreveport, Louisiana

Meager information exists regarding the morbidity of cancer surgery in obese patients, and it is generally assumed that surgery in the obese patient is attended with increased complications over those found in nonobese patients. A retrospective evaluation was undertaken at the Louisiana State University Medical Center to ascertain the morbidity of cancer surgery among 97 patients. In comparing the obese with the nonobese group of patients, the former was more often found to have complications of postoperative wound disorders that frequently required secondary operations, and a greater incidence of diabetes. The risk of postoperative complications among obese patients undergoing cancer surgery did not otherwise appear to be greater than that of nonobese patients.

Obesity is characterized by an excessive accumulation of body fat. Generally, body weight greater than 20 percent over the calculated ideal is considered to be obese.[1] Medical knowledge assumes that postoperative problems among obese patients are generally attended with a greater frequency of complications involving coronary heart disease, respiratory impairment, diabetes, hypertension, and thromboembolic phenomenon as a result of delayed ambulation.

The information relative to the morbidity following radical surgery in obese cancer patients is meager, and only a few publications[2,3] have documented the impact of cancer surgery among obese patients. The objective of this study was to compare various morbidity conditions (ie, duration of surgery, blood loss, infections, etc) in obese and nonobese cancer patients. The results provide information relative to morbidity criteria between obese and nonobese cancer patients.

METHODS

A retrospective study was undertaken at the Louisiana State University Medical Center at Shreveport to evaluate the type and degree of morbidity following cancer surgery among 97 obese and nonobese patients. Hospital records were reviewed of patients who underwent radical cancer surgery during the years 1952 through 1986. Patients were stratified into two groups: those weighting more than 200 lb (obese, n = 31), and those weighting less than 200 lb (nonobese, n = 61). Five patients were unevaluable. This classification was chosen to allow for a comparison with previous publications[2-4] and because assuming that

From the Department of Obstetrics and Gynecology, Louisiana State University Medical Center, 1501 Kings Highway, Shreveport, Louisiana. Requests for reprints should be addressed to Dr. George W. Chapman, Jr., Department of Obstetrics and Gynecology, Louisiana State University Medical Center, 1501 Kings Highway, P.O. Box 33932, Shreveport, LA 71130.

TABLE 1. CANCER DIAGNOSES IN OBESE AND NONOBESE PATIENTS

Diagnoses	Nonobese (No.)	Obese (No.)
Cervical	20	5
Ovarian	13	3
Endometrial	20	22
Uterine sarcomas	3	1
Vulva	3	0
Miscellaneous	2	0
Total	61	31

the average female height in the United States is 5 ft 6 in, then the ideal body weight should be approximately 130 to 144 lb.[1] Thus, 200 lb would take into account the majority of nonobese women.

The following operative and postoperative information was obtained from each patient's hospital record: duration of the operation, amount of blood loss during the operation, number of days in the hospital, postoperative morbidity (temperature elevation of 100.4 °F on any two of the first ten postoperative days, excluding the first 24 hours),[5] site and type of infections, and surgical wound complications.

The average age of the obese patients was 57 years, while that of nonobese patients was 52 years. Fifty-seven percent (55/97) of the patients were black and 43 percent were white. No other racial group was represented. Both age and racial background were considered similar among the two weight classifications and, as such, were not thought to affect the morbidity criteria that were evaluated.

The surgical techniques were relatively constant throughout the duration of the study period, with the operations being performed by the resident staff with faculty staff supervision.

RESULTS

The various cancer diagnoses are listed in Table 1. Obvious differences were not evident between obese and nonobese patients. An increased sample size may, however, reflect differences not detected with the study sample, as shown in a previous report.[2] The majority of the surgical operations (68 and 56 percent in the obese and nonobese groups, respectively) were predominately total abdominal hysterectomies, with or without lymph node dissections, for endometrial carcinoma (Table 2). Radical hysterectomy and/or pelvic node dissections were performed more often (13 vs 3) in the nonobese group of patients. The operative times were between 2 to 4 hours (Table 3), and were similar among the two groups, involving 75 percent of the nonobese patients and 85 percent of the obese group. The estimated total blood loss was greater than 500 mL in 70 percent of the nonobese group and in 61 percent of the obese group (Table 4).

TABLE 2. TYPE OF OPERATIONS PERFORMED ON NONOBESE AND OBESE PATIENTS WITH CANCER

Type of Operation	Nonobese (No.)	Obese (No.)
Total abdominal hysterectomy with bilateral oophorectomy with or without bilateral pelvic node dissection	34	21
Radical hysterectomy, with or without bilateral oophorectomies and pelvic-paraaortic node dissection	13	3
Tumor cytoreduction	5	—
Radical vulvectomy and bilateral groin node dissection	3	—
Node dissection(s) only	4	6
Miscellaneous	2	1
Total	61	31

TABLE 3. OPERATIVE TIME FOR CANCER SURGERY IN NONOBESE AND OBESE PATIENTS

Operation Time (hours)	Nonobese (No.)	Obese (No.)
<2	4	2
2 to 4	46	25
4 to 8	11	4
Total	61	31

It was found also that the number of hospital days did not differ significantly between the two groups. The average hospital stay among obese patients was 20.9 days (a range of 4 to 87 days), while the average hospital stay for nonobese patients was 18.7 days (a range of 4 to 65 days).

Postoperative complications (Table 5) between obese and nonobese patients differed among several morbidity categories. Secondary operations occurred

TABLE 4. ESTIMATED BLOOD LOSS IN NONOBESE AND OBESE PATIENTS FOLLOWING CANCER SURGERY

Blood Loss	Nonobese (No.)	Obese (No.)
<500 mL	18	12
500 to 750 mL	20	13
>750 mL	23	6
Total	61	31

more frequently in the obese group, and medical complications of diabetes mellitus and wound infection and its sequelae were also more frequent among the obese group. Postoperative fever, however, was seen more often in the nonobese group.

COMMENTS

Obesity is often thought to be associated with an increased incidence of operative complications because of coronary heart disease, respiratory impairment, diabetes mellitus, hypertension, thromboembolic phenomenon, etc, and required surgery is often delayed in these patients, especially when the disorder represents a benign disease. Such delays, however, are inappropriate for cancer patients. Previous reports[2] have discussed the operative sequelae in benign conditions, and others[3,4] have dealt with the operative complications. The general assumption that operative complications are much greater in obese patients may not be valid. Pitkins[2] reviewed abdominal hysterectomies and reported an increased incidence of postoperative fevers of more than two days and an increased incidence of wound infections among the obese group of patients. The diagnosis in the greatest percentage of patients in his study was endometrial cancer, which is to be expected, as obesity is very common among patients with endometrial cancers.

It was observed among patients undergoing radical operations for various carcinomas that morbidity was not increased over that of nonobese patients, except in a few instances (Table 5). It was observed also that there was an increased frequency of postoperative wound complications and a more frequent need for secondary operations among obese patients. The most common complication was morbidity caused by wound infections and their sequelae. Wound infections and wound dehiscences occurred more frequently in the obese group of patients than among the nonobese group. Of the group with infective wound disorders, 16 obese patients were afflicted as compared with eight nonobese patients. Wound infection without separation occurred in five nonobese and nine obese patients. Wound disruption and/or dehiscence occurred in three nonobese and in seven obese patients. Medical complications of diabetes mellitus occurred in five nonobese patients and in eight obese patients. Hypertensive disease was present in 18 nonobese and 16 obese patients, and secondary operations were required more often in the obese group (6 vs 2). Postoperative morbidity was seen more often in the nonobese group.

TABLE 5. POSTOPERATIVE COMPLICATIONS IN NONOBESE AND OBESE PATIENTS FOLLOWING CANCER SURGERY

Condition	Nonobese (No.)	Obese (No.)
Fever 100.4°F for more than 2 days	14	4
Wound disorders		
Infections (cellulitis)	5	9
Wound disruption	1	1
Wound dehiscence	2	6
Diabetes mellitus	5	8
Hypertensive disease	18	16
Cardiac disease	5	3
Pulmonary disease	1	1
Secondary operations	2	6
Urinary tract infection(s)	3	3
Pulmonary emboli	2	0
Venous thrombophlebitis/ thrombosis	0	1

Pitkins[2] studied 300 obese patients (each weighing 200 lb or more) and concluded that obese patients, as compared with nonobese patients, were more likely to have carcinoma of the endometrium, hypertension, and diabetes mellitus. Postoperatively, the striking difference between the two groups was in the incidence of wound infection and wound disorders, with no significant difference in the occurrence of other disorders. Forty-seven percent of his patients were diabetic. Morrow[3] et al noted that only patients with

diabetes mellitus had wound complications. Gallup,[4] in a study involving more than 1,000 patients, reported that 36 of 97 patients had diabetes, and that only 2 of 36 (0.55 percent) developed wound complications.

Except for the medical complications of diabetes mellitus, wound infections and their potential sequelae, the risk of postoperative complications among obese patients undergoing cancer surgery does not appear to be greater than that of nonobese patients. Surgery should not be denied to this group of patients.

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