CORSCADEN'S Gynecologic Cancer

Fifth Edition

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Corscaden's **Gynecologic Cancer**

To Dr. James Corscaden
for his wisdom,

To our Wives, for their patience.

PREFACE to Fifth Edition

SINCE BOTH of the authors of this present edition shared the experience of James Corscaden during their introduction to the problems of gynecologic cancer, they participated in discussions that accompanied his authorship of this work in its original edition. If some continuity of policy is noted in some sections of this present edition, it will surely be found in those areas where there has been little change in the management of these problems. In those areas where further experience and new knowledge has brought change, there remains a residue of Doctor Corscaden's principles which rested on a constant search for firm evidence.

There is little doubt that we have seen important advances in some sectors of gynecologic oncology during our professional experience. One might summarize the concerns of these decades in the following manner:

A. *The 1940s were notable for increasing sophistication of surgical and radiotherapeutic techniques.* The former occurred more quickly in our country, persuaded by Meigs that modern surgery could add a new dimension; the latter was the product of increasingly complex radiologic machinery produced by physicists and engineers.

B. *The 1950s might be called the decade of early diagnosis.* This was based upon wide acceptance of the cytologic method and the developmental concept of precancerous lesions of cervix and endometrium. Campaigns of public education and professional reeducation extended the scope of these concepts. In fact, the histogenesis of the uterine cancers is clarified sufficiently to serve as a model for cancer elsewhere.

C. *The 1960s saw the establishment of a biologic base.* Cancer cell biology was enriched by a rapid succession of scientific advances from many disciplines:

1. Cell physiology and cell kinetics for chemotherapy
2. Radiobiology and radiation physics for radiotherapy
3. Tumor immunology
4. Metabolic technology for steroid endocrinology
5. Epidemiology of the high risk patient.

D. *The 1970s may come to be known as the decade of therapeutic translation.* It is possible now, for the insights of these disciplines to be folded into our surgical or radiotherapeutic efforts which are only regional, as whole body adjuvants.

While this edition in many ways continues as a personal book, rather than an encyclopedic compendium, presenting the experience and policy of a group or "school" of gynecologic oncologists, it has become clear in modern medicine that the insight of individuals with special scholarship in special sectors is

required to bring innovative experience to bear upon our problems. For this reason, we have invited the contributions of a distinguished group of gynecologic oncologists in several special areas. Their expertise has enriched this volume greatly and we are greatly in their debt.

The reader, then, will confront our belief that the gynecologist who undertakes to treat gynecologic cancer must understand radical pelvic surgery, radiotherapy, chemotherapy, pathology and cytology, and master one of these therapeutic modalities.

We hasten to express our appreciation for the secretarial skills of Miss Levita Angeles and Miss Margaret Lawry and the assistance of Mrs. Margery Johnston. Special gratitude must be given to Miss Margaret Lawry for her tabular and bibliographic skills, for she has been associated with this book since its first edition.

In addition, we are indebted to Mrs. Dorothy C. Gusberg for her contributions to the illustration of this volume and we acknowledge her artistry with pride and pleasure.

Finally, we must express our gratitude to publishers who have allowed us to reproduce illustrations, our colleagues for their collaboration, and our students and wives for their patience.

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CONTENTS

CHAPTER 1

Introduction

S. B. GUSBERG, M.D.

A separate study of cancer of the female sex organs is made desirable by the peculiar combination of circumstances which makes cancer of these organs a particularly favorable object of diagnosis and treatment. Cancer occurs here with great frequency and is readily accessible for the application of diagnostic procedures which are simple to execute. Diagnosis can, therefore, be established at an early stage of the disease in most of these lesions and may thus lead to treatment which, by technics already available, will cure the patient in a high percentage of cases. Indeed the accessibility of many of these lesions to diagnosis and treatment has allowed us to understand the histogenesis of these tumors better than most other malignant tumors and suggests that they can be considered prototypes for the diagnosis and treatment of cancer elsewhere in the body as we gain access to them. When the lesion is smaller than 1 cm in diameter, cures have been better than 90%. Even when the disease is more advanced, but still localized to the organ in which it originated, it can be cured in 80% of the cases. The contrast between this cure rate and the 40% cure rate which at present actually obtains in all cases diagnosed is so striking that it forces the conclusion that here is a field in which something can be done immediately in the fight against cancer, without awaiting the discovery of new principles or technics. Simply by applying the knowledge which is now available, so that both the patient and physician may do their part, we can raise the 5-year survival from about 40% to approximately 80% among those patients afflicted with gynecologic cancer.

FREQUENCY

One out of every four females and one out of every five males will be afflicted with cancer at some time in their lives. These facts can be determined by a study of the experience in Connecticut and New York State (exclusive of New York City) where cancer has been a reportable disease for many years. The incidence of cancer is on the increase with lung cancer leading the list while cancer in situ of several sites, including the cervix, continues to rise. Table 1.1 illustrates estimated new cases and deaths for 1977 as compiled by the American Cancer Society.

MORTALITY

Tables 1.2–1.4 indicate the trends in the mortality rate from 1952–1954 to 1972–1974. While one sees a slight decrease in death from lesions of the colon and rectum and a striking decrease in that from stomach cancer we have seen a marked increase in the mortality from lung cancer and cancer of the pancreas with a modest increase from malignant kidney disease. Other sources indicate an increase in the mortality from ovarian cancer while that from cervix cancer in the United States and Canada has declined with screening (Figs. 1.1 and Fig. 1.2).

The incidence of endometrial cancer appears to be rising and, in most Western countries, it has reversed the traditional cervix to corpus ratio. Figures 1.3 and 1.4 illustrate current incidence and mortality by site.

PROBABILITY

Table 1.2 shows that sooner or later in life more than 1 in 4 female babies will be af-

flicted with cancer in some organ, and that almost 1 in 25 will develop cancer of the uterus. If we add cancers of the ovary and vulva, the risk rises to 1 in 20. Add cancer of the breast and the risk rises to approximately 1 in 10. Table 1.3 illustrates the current predominance of endometrial cancer over cervix cancer in the United States.

Table 1.1. Incidence Estimates Are Based on Rates from National Cancer Institute Third National Cancer Survey, 1969–1971

Site	Estimated New Cases 1977	Estimated Deaths 1977
Breast	90,000	34,000
Colon and rectum	101,000	51,000
Lung	98,000	89,000
Oral (including pharynx)	24,000	8,000
Skin	10,000*	5,000
Uterus	47,000†	11,000
Kidney and bladder	45,000	17,000
Larynx	9,000	3,000
Prostate	57,000	20,000
Stomach	23,000	14,000
Leukemia	21,000	15,000
Lymphomas	22,000	16,000

* Estimated new cases of non-melanoma skin cancer about 300,000.

† Cases total over 87,000 if cancer is situ is included.

Figure 1.5 shows the incidence of cancer of the pelvic organs according to age. The incidence of cancer of the breast rises inexorably to the end at age 90, whereas the incidence of cancers of the cervix, corpus, and ovary remains steady at middle age. This age factor is important in determining whether an organ should be removed for prophylactic purposes.

ACCESSIBILITY AND CURABILITY

The crusade against cancer is on two fronts. The first, basic research into the causes and nature of cancer and in the search for curative agents, has yielded increasing knowledge that can be applied to the management of human cancer at present. The second front must be pragmatic. We have learned that many cancers can be destroyed by radiation and that others can be so completely removed by surgery that the patient is cured although the very extent of the excision must be a limited and theoretical one no matter how radical it may be locally. Radiation and surgery, therefore, no matter how radical, are regional treatments.

Knowledge of the curability of cancer is important to the patient who, if she knows that the probability of cure is high, will be

Table 1.2. Trends in Age-Adjusted Cancer Death Rates per 100,000 Population 1952–1954 to 1972–1974

Sex	Site	1952–1954	1972–1974	Percent Changes	Comments
M	All Sites	134.7	159.7	+19	Steady increase mainly due to lung cancer.
F		117.6	107.7	−8	Slight decrease.
M	Breast	0.3	0.3	*	Constant rate.
F		22.2	23.2	+5	Slight fluctuations: Overall no change.
M	Colon and rectum	19.3	18.9	−2	Slight decrease in both sexes.
F		18.4	14.9	−19	
M	Esophagus	3.7	4.0	*	Slight fluctuations: Overall no change in both sexes.
F		0.9	1.1	*	
M	Kidney	2.9	3.7	+28	Steady slight increase.
F		1.6	1.7	*	Slight fluctuations: Overall no change.
M	Leukemia	6.7	6.9	+3	Early increase, later leveling off.
F		4.7	4.2	−11	Slight early increase, later leveling off and decrease.
M	Lung	23.2	51.6	+122	Steady increase in both sexes due to cigarette smok-
F		4.3	11.9	+177	ing.
M	Oral	4.6	4.7	*	Slight fluctuations: Overall no change in both sexes.
F		1.2	1.5	*	
F	Ovary	7.3	7.4	+1	Slight increase, then leveling off.
M	Pancreas	6.8	8.4	+24	Steady increase in both sexes, then leveling off.
F		4.3	5.1	+19	Reasons unknown.
M	Prostate	13.5	13.7	+1	Fluctuations all through period: Overall no change.
M	Skin	2.4	2.5	*	Slight fluctuations: Overall no change in both sexes.
F		1.5	1.5	*	
M	Stomach	16.4	7.4	−54	Steady decrease in both sexes: Reasons unknown.
F		8.6	3.6	−58	

* Percentage changes not listed because they are not meaningful.

Table 1.3. Probability at Birth of Eventually Developing and Dying of Cancer of Major Sites, by Race and Sex, United States, 1973

Site of Cancer	White Males	Black Males*	White Females	Black Females*
Eventually Developing				
All sites	29.4	26.6	30.8	23.8
Esophagus	0.4	1.1	0.2	0.3
Stomach	1.2	1.5	0.9	0.9
Colon-rectum	4.4	2.9	5.2	3.6
Pancreas	1.1	1.1	1.0	1.0
Lung	6.1	6.0	1.6	1.3
Breast	—	—	8.1	5.2
Cervix uteri	—	—	1.5	3.0
Corpus uteri	—	—	2.2	1.1
Other uterus	—	—	0.3	0.3
Ovary	—	—	1.5	0.9
Prostate	5.1	6.4	—	—
Bladder	2.4	0.8	0.8	0.5
Kidney	0.8	0.5	0.5	0.4
Eventually Dying				
All sites	17.6	16.4	16.2	14.1
Esophagus	0.4	0.9	0.2	0.3
Stomach	0.8	1.1	0.6	0.8
Colon-rectum	2.2	1.5	2.8	2.0
Pancreas	1.0	0.9	0.9	0.8
Lung	5.4	4.7	1.5	1.2
Breast	—	—	3.1	2.3
Uterus	—	—	1.0	1.9
Ovary	—	—	1.0	0.6
Prostate	1.8	2.4	—	—
Bladder	0.7	0.4	0.3	0.3
Kidney	0.4	0.2	0.3	0.2

O* Life Tables employed and data on eventually dying of cancer are for nonwhite males and females.

Sources of Data: U. S. National Center for Health Statistics: Vital Statistics of the United States, 1973. U. S. Government Printing Office, Washington, D.C., 1975.

S.J. Cutler and J.L. Young, Jr. (Eds.) Third National Cancer Survey: Incidence Data. National Cancer Institute Monograph No. 41, DHEW Publication No. (NIH) 75-787. U. S. Government Printing Office, Washington, D.C., 1975.

From *Ca*, **26:** Jan.–Feb. 1976. American Cancer Society Reports.

Table 1.4. Cancer of the Uterus

	Cervix Uteri		Corpus Uteri	
	White	Nonwhite	White	Nonwhite
Estimated new cases, 1976	15,000	5,000	25,000	2,000
Percentage of total new cases	4.9	16.1	8.2	6.5

From *Ca*, **26:** Jan.–Feb. 1976: American Cancer Society Reports.

stimulated to seek an early diagnosis. On the other hand, some women will evade seeking an early diagnosis because of the unfounded belief that all cancer is incurable. This tendency is diminishing because of the wide dissemination of knowledge about the utter curability of the earliest and even preinvasive lesions.

The physician also must know the curability of cancers in different locations and of varying extent and must be aware of the results to be obtained by different types of treatment. If curability is high, he will be stimulated to seek out the early case; if low, he will continue to evade responsibility in making an early diagnosis.

The word *cure* has many connotations, but its historic implication is that a patient has been cared for and has been restored to health. The modern medical meaning implies that a disease has been eradicated down to the last cell and, for that reason, use of the

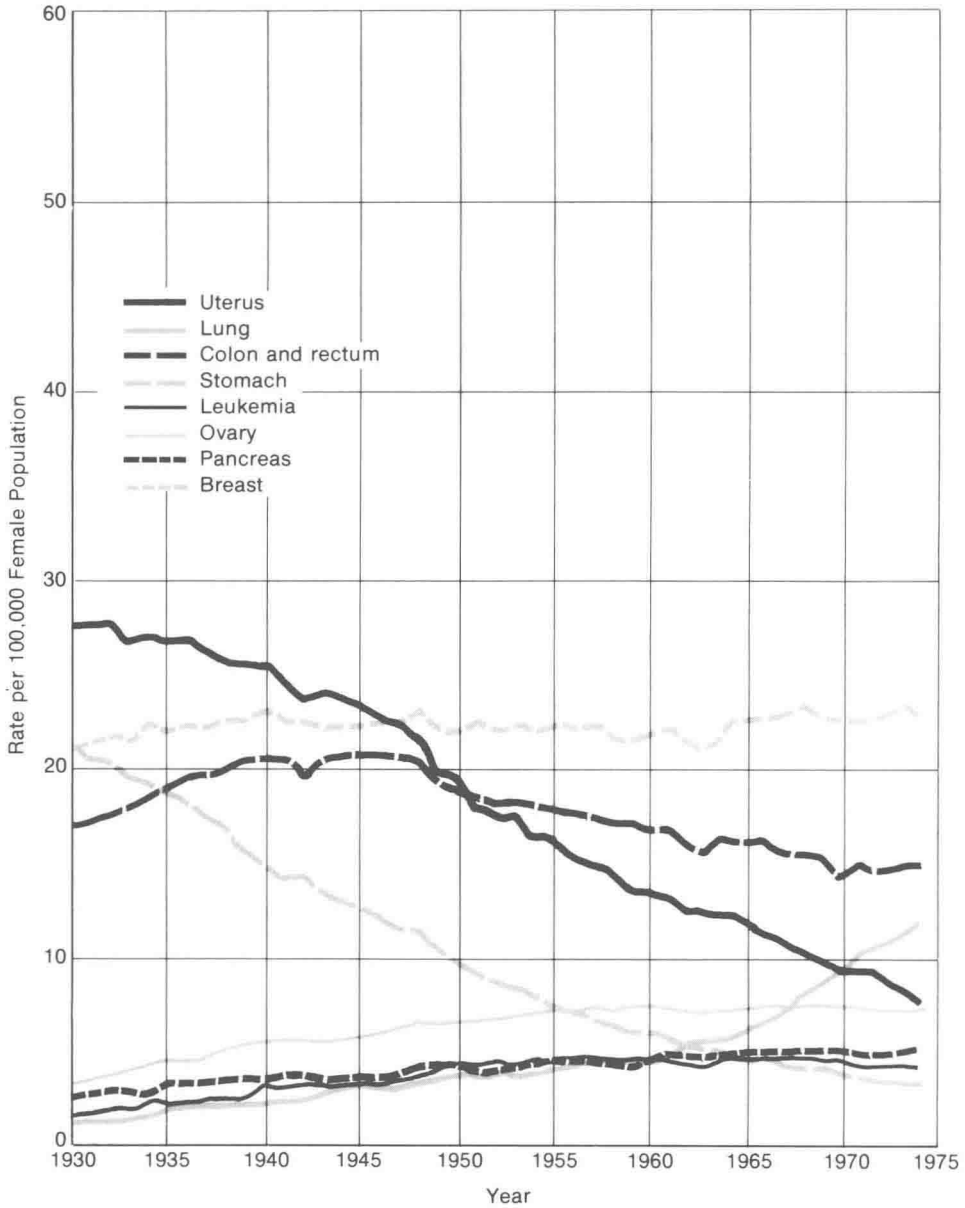

Fig. 1.1 *A*. Age-adjusted cancer death rates (standardized on the age distribution of the 1940 U. S. census population) for selected sites, females, United States, 1930–1974. Sources: U. S. National Center for Health Statistics and U. S. Bureau of the Census. (From *Ca*, **27:** Jan.-Feb. 1977. American Cancer Society Reports.)

word has been discontinued in most hospitals. The patient is now discharged as improved.

The word *cure*, for our purposes, means that the patient is free of subjective or objective evidence of cancer after an interval of 5 years. Some have employed a 3-year interval because it is true that most patients who are to succumb will have done so before that time. There are, however, sufficient tragedies between the 3- and 5-year intervals to make this practice unsafe (Lampe, 1954). On the other hand, 10 years is too long for practical purposes in patients of the cancer age. Few patients die of their cancer in this interval, and the survivors need only to know that they can plan their lives irrespective of the cancer.

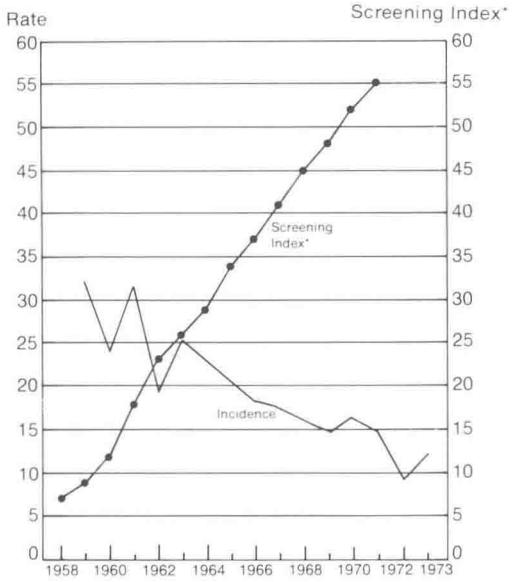

Fig. 1.1 *B.* Incidence of clinical invasive carcinoma of the cervix and extent of screening, British Columbia, 1958–1973 (age-standardized rates per 100,000 women aged 35 to 64. Source: British Columbia central cytology Registry). (From *Canadian Medical Association Journal:* Walton Report, **114:** 1003, 1976.

* Annual number of examinations, expressed as percentage of the female population aged 20 or more.

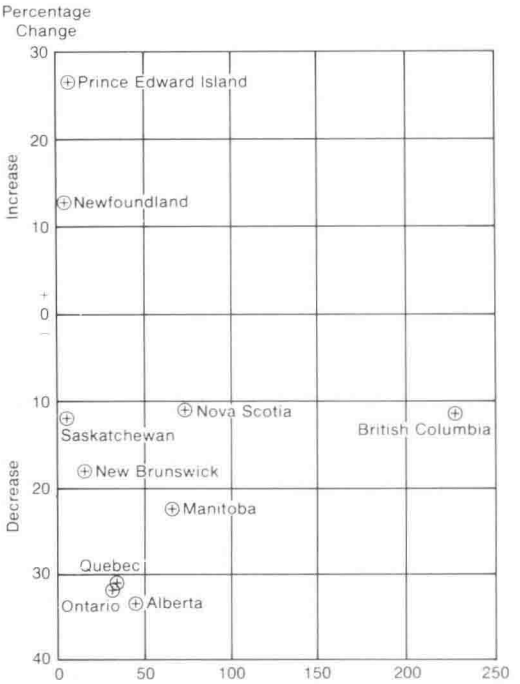

Fig. 1.2. Change in mortality from carcinoma of the uterus, 1950–1952 to 1960–1962, in relation to screening rate in 1962 (based on 3-year average age-standardized truncated morality rates per 100,000 women aged 30 to 64. Sources: Statistics Canada and surveys of the Canadian Society of Cytology. (From *Canadian Medical Association Journal:* Walton Report, **114:** 1003, 1976.

Therefore, the conventional 5-year cure will be taken as the test of curability. In fact the best definition of cancer cure is contained in that time interval when the treated patients' life expectancy reaches that of healthy persons of the same age group.

It seems logical that a very small growth can be cured in a high percentage of cases, whereas a widespread, advanced cancer could be less readily destroyed or eradicated. It is equally logical to presume that cancers which are accessible will be more frequently discovered in an early stage than those which are hidden from the examiner and that, consequently, the 5-year survival among them will be greater, and that seems to be the fact.

Table 1.5 is a condensed summary of the 5-year survivals following treatment for a group of cancers in inaccessible organs compared with a group of tumors in gynecologic organs which are accessible for direct investigation. Cancer of the lung presents a sorry picture with an overall cure rate of hardly 2% and an 8% cure rate in cases which were considered to be resectable. Cancer of the stomach has a slightly better outlook with an overall cure rate of 8% and a cure rate of 25% in the resectable cases. Cancers of the colon, although little more accessible than those in the stomach, are diagnosed earlier and have an over-all cure rate of 20% and in the resectable cases, of 40%. Cancer of the rectum should be classed with the accessible group as nearly all rectal cancers can be felt by the finger of a diligent examiner. However, they are not diagnosed early and have an overall cure rate of only 27% and in cases which are treated by radical excision a cure rate of 43%. Contrast these results with those following treatment of accessible gynecologic tumors. Cancer of the vulva is the most accessible and, when properly diagnosed and less than 2 cm in diameter, is cured in over 85% of the cases. Unfortunately cancer of the vulva is the most neglected of all gynecologic cancers with a long delay interval and a correspondingly low cure rate of 40%. In cancer of the cervix the cure rate in Stage I (International Classification) is 70 to 90%. If

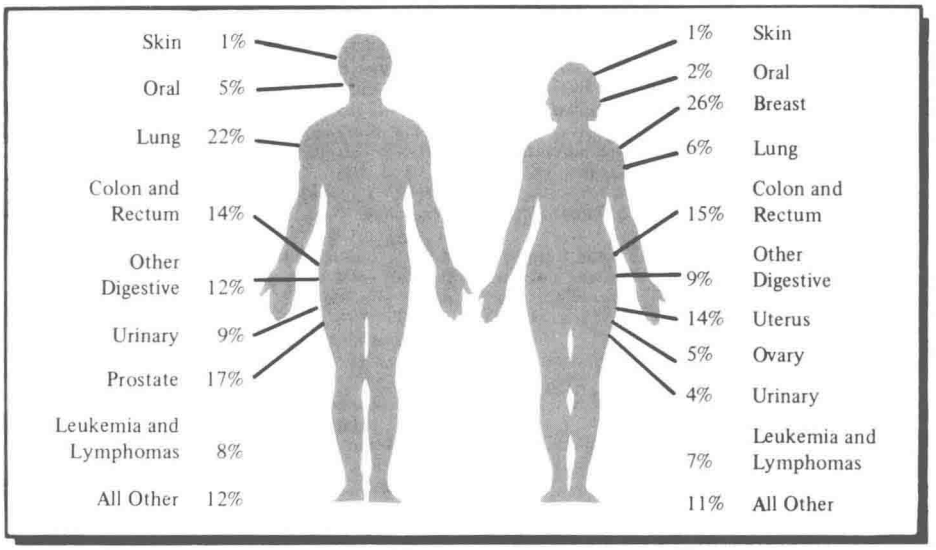

Fig. 1.3. Cancer incidence by site and sex (excluding non-melanoma skin cancer and carcinoma in situ of uterine cervix. (From *Ca*, **27:** Jan.-Feb. 1977. American Cancer Society Reports.

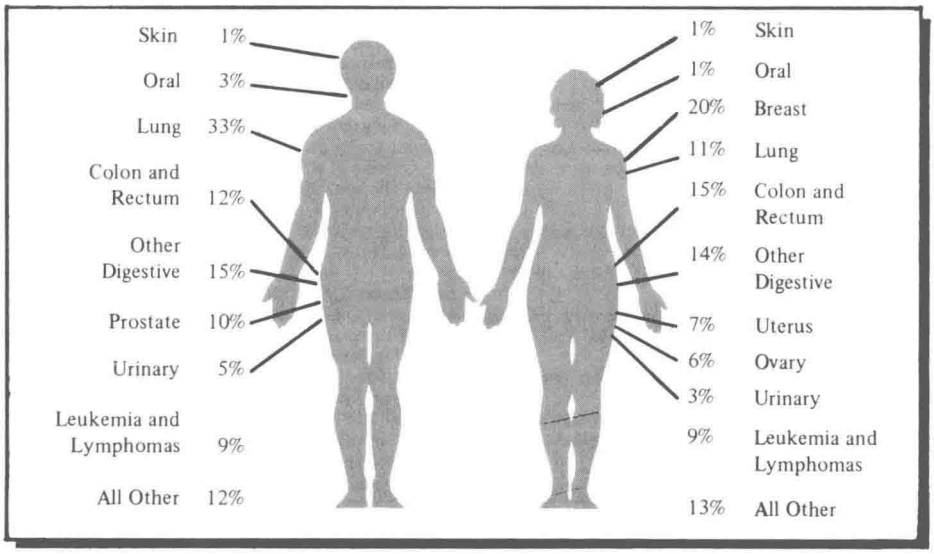

Fig. 1.4. Cancer deaths by site and sex, 1977. (From *Ca*, **27:** Jan.-Feb. 1977. American Cancer Society Reports.

cases in Stage I are broken down into subgroups, the benefit of early diagnosis is apparent. In Stage Ia where the lesion is so small that special procedures are necessary for diagnosis, the cure rate is close to 100%. In Stage Ib where the lesion is apparent on direct examination but less than 2 cm in diameter, the cure rate is about 95%. Cancer of the corpus (endometrial), although not directly visible, can be diagnosed by special office procedures but, at present, is usually discovered after the onset of symptoms. The overall cure rate is 62% and in the clinically operable cases, 75%. The overall results in a hospital with special facilities is 85%. The overall cure rate in cancer of the ovary is about 30%. The results of treatment of small tumors cannot be estimated since the number of such cases is so small. Sixty percent of them, at the time of diagnosis, were 15 cm in diameter. Better results in cancer of the ovary depend on improvement in knowledge concerning the nature of the growth and on new methods of diagnosis and therapy.