national practice processes of radiotherapy for selected malignancies over certain periods of time (3). In the PCS survey, detailed information about the structures, processes and outcomes of radiation treatment was collected. The 2003–05 PCS, which is the most recent PCS, included questionnaires designed to assess treatment planning practices currently in use. The goal of this current report is to identify the treatment planning process for patients with localized prostate cancer in Japan.

PATIENTS AND METHODS

The methods used in data collection for the PCS have been described previously (1–3). From a stratified Facilities Master List, 34 hospitals were randomly selected from A institutions (university hospitals/cancer centers) and 27 hospitals from B institutions (non-academic hospitals) (Table 1). Between August 2006 and September 2008, each of the chosen facilities was visited by member physicians of the PCS group. A total of up to 10 medical records from each institution were randomly selected and reviewed. The following eligibility criteria were used in the process survey. The patients were required to have been diagnosed with adenocarcinoma of the prostate without evidence of distant metastases; they had to have been treated with radiotherapy between 2003 and 2005; and the patients must not have been diagnosed with any other malignancy nor have been previously treated with radiotherapy. From a total of 592 eligible cases (Table 1), 397 patients were evaluated who had been treated radically with external photon beam radiotherapy. Patients who were treated after surgery or after progression from hormonal therapy were excluded.

In this paper, we focused on the patterns of radiation treatment planning and delivery for localized prostate cancer. The data were stratified according to whether the treatment took place in academic or non-academic facilities, and compared on this basis. For statistical analysis, the differences between proportions were tested by the χ^2 test. A P value <0.05 was considered to indicate a statistically significant difference.

Table 1. The number of patients examined in this analysis

	No. of facilities	No. of total prostate patients	No. of patients in this study
A institutions (university hospitals and cancer centers)			
A1 (≥410 patients per year)	17	180	111
A2 (<410 patients per year)	17	164	105
B institutions (non-academic hospitals)			
B1 (≥130 patients per year)	15	148	117
B2 (<130 patients per year)	12	100	64
Total	61	592	397

RESULTS

Treatment Planning and Implementation

The computed tomography (CT) simulation usage rates are shown in Table 2. CT data were used for planning in ~90% of the patients. The majority of the CT data were obtained from dedicated CT scanners in A institutions, but almost half of the CT data were obtained from diagnostic CT scanners in B institutions. X-ray simulation was used more frequently in B institutions. Contrast was rarely used for treatment planning.

Verification of the treatment fields using portal films or electric portal imaging devices was undertaken in most of the patients. However, regular or multiple verifications in addition to initial treatment and/or portal volume changes were performed in only 30% of the patients.

Position and Immobilization of Patients

Simulations and treatments were performed in the supine position in almost all patients (Table 3). Immobilization devices were used for only 15% of the patients.

Treatment Techniques

Treatment techniques are shown in Table 4. The most commonly used photon energy was 10 MV. In B institutions, lower energies <10 MV were used more frequently.

Table 2. Treatment planning and implementation

	Stratification[a]		P value
	A	B	
Simulation			0.021
CT simulation with/without X-ray simulation	203 (94.0%)	158 (87.3%)	
Dedicated CT	171 (79.2%)	82 (45.3%)	
Diagnostic CT	32 (14.8%)	76 (42.0%)	
X-ray simulation only	13 (6.0%)	23 (12.7%)	
Contrast used for treatment planning			0.871
None	213 (98.6%)	179 (98.9%)	
Rectal barium	0	2 (1.1%)	
Urethrogram	1 (0.5%)	0	
Both	1 (0.5%)	0	
Portal verification			0.031
None	9 (4.2%)	0	
Initial treatment or field change only	147 (68.1%)	128 (70.7%)	
Regular or multiple intervals	60 (27.8%)	53 (29.3%)	

CT, computed tomography.
[a]Because some data were missing, the total numbers of patients may be less than the actual numbers.

Table 3. Position and immobilization of patients

	Stratification		*P* value
	A	B	
Position			0.403
Supine	216 (100%)	179 (98.9%)	
Prone	0	2 (1.1%)	
Immobilization			0.434
None	174 (80.6%)	158 (87.3%)	
Cast[a]	24 (11.1%)	14 (7.7%)	
Body frame[b]	9 (4.2%)	9 (5.0%)	
Others/unknown	9 (4.2%)	0	

[a]'Cast' was defined as a firm body support system, such as vacuum pillows.
[b]'Body frame' was defined as an immobilized system, such as a system using a base plate and body shells.

The typical beam arrangement for treatment of the prostate consisted of a four-field box. Treatment plan included a moving field in one-third of the patients. 3D conformal techniques including IMRT were generally applied less frequently in B institutions than in A institutions (A1, 97.3%; A2, 53.3%; B1, 59.8%; and B2, 37.5%). Modernized multileaf collimators (MLC) with leaf widths $\leq$10 mm were used in about two-thirds of the patients.

Total Dose

The median dose given to the prostate was 70 Gy (A1, 70 Gy; A2, 70 Gy; B1, 67.8 Gy; and B2, 66 Gy). Figure 1 shows the distributions of doses delivered to the prostate according to the leaf width of MLC. Although the doses were affected by the leaf width, there were no significant differences between the dosages delivered at 5 mm and those delivered at 10 mm MLC leaf width ($P = 0.12$).

DISCUSSION

This is the first detailed survey report focusing on the radiation treatment planning for prostate cancer in Japan. This report provides a clear picture of the present practices relating to treatment planning in this country. Because few reports exist on treatment planning practices for prostate cancer (4,5), these data will serve as a baseline for future surveys as well as for the multicenter trials including radiotherapy.

The results in this study show that contrast was rarely used for treatment planning in Japan. In the 1989 US PCS (4), contrast was used in the bladder and rectum in 25% and 34% of the patients, respectively. However, only 51% of the patients had CT data for planning in the 1989 PCS (4). It is recommended that rectal or bladder dye should be utilized to

Table 4. Treatment techniques

	Stratification		*P* value
	A	B	
Energy (MV)			0.0000
4–5.9	10 (4.8%)	13 (7.4%)	
6–9.9	8 (3.9%)	42 (24.0%)	
10–14.9	149 (72%)	113 (64.4%)	
$\geq$15	40 (19.3%)	7 (4.0%)	
Field arrangement for the prostate			0.0000
2-field	36 (16.8%)	15 (8.4%)	
3-field	7 (3.3%)	2 (1.1%)	
4-field	49 (22.9%)	71 (39.7%)	
5-field	33 (15.4%)	4 (2.2%)	
$\geq$6-field	26 (12.2%)	12 (6.7%)	
Rotational	21 (9.8%)	16 (8.9%)	
Pendulum	41 (19.2%)	54 (30.2%)	
3DCRT/IMRT technique			0.0000
3DCRT-dynamic	64 (29.6%)	54 (29.8%)	
3DCRT-static	87 (40.3%)	38 (21.0%)	
IMRT-step and shoot	13 (6.0%)	2 (1.1%)	
IMRT-sliding window	0	0	
None	52 (24.1%)	87 (48.1%)	
Width of multileaf collimator leaves			0.0000
5 mm	38 (17.6%)	53 (29.3%)	
10 mm	120 (55.6%)	52 (28.7%)	
20 mm	10 (4.6%)	19 (10.5%)	
Block	15 (7.0%)	31 (17.1%)	
None	26 (12.0%)	26 (14.4%)	
Unknown	7 (3.2%)	0	

3DCRT, three-dimensional conformal radiotherapy; IMRT, intensity-modulated radiotherapy.

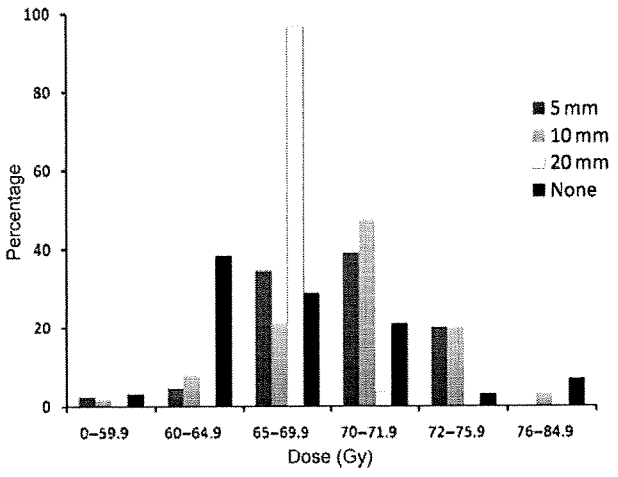

Figure 1. Distribution of radiation doses delivered to the prostate according to the leaf widths of multileaf collimators.

help design field blocking and beam arrangements, if X-ray simulation is used (4,6). However, contrast may not be needed to determine the position of the prostate when CT simulation is performed. In this survey, there were no questionnaires on the usage of magnetic resonance imaging (MRI) images for prostate cancer treatment planning. Going forward, it is expected that MRI/CT image fusion techniques will be increasingly important to define the anatomical structures including the prostate (7,8). The next PCS survey will take this issue into consideration.

Regular or multiple verifications of the treatment fields were performed in only 30% of the patients in this study. In the USA, radiation fields were verified with regular intervals in 60% of the prostate patients surveyed in the 1989 PCS (4). It is hoped that if electric portal imaging devices become more popular in Japan, verification of the treatment fields will be performed more frequently.

Simulations and treatments were performed in the supine position in almost all patients. Published literature suggests a variation in results between the use of the prone and supine positions for prostate cancer radiotherapy. Several authors demonstrated that the rectal dose was reduced in the prone position (9,10). However, in the absence of immobilization devices, daily setup reproducibility may be less accurate for the prone position, primarily due to systematic setup variations (10). Patient positioning procedures in prostate radiotherapy should be evaluated in each institution, in particular if the radiation doses to the prostate are high.

Immobilization was used in only 15% of the patients. This may be in part because immobilization devices for body malignancies are not covered by health insurance in Japan. As mentioned above, patient immobilization can be an important contributor to the reproducibility and accuracy of radiotherapy (11). More widespread use of immobilization devices will also be required with an increase in treatment using 3DCRT or IMRT, which utilize higher dosages of radiation.

The radiation doses delivered to the prostate were affected by the leaf width of MLC. However, there were no significant differences between a 5 mm and a 10 mm MLC leaf size. Leal et al. (12) showed that the impact on the clinical dose distribution due to the MLC leaf width change from 10 to 5 mm is quite low on the dose distribution in patients treated with 3DCRT and IMRT. On the other hand, Wang et al. (13) insisted that the use of the micro-MLC for IMRT of the prostate resulted in significant improvement in the dose distributions to the prostate and critical organs. Although narrower leaves give better sparing of organs at risks, the clinical value should be carefully evaluated.

Several significant variances in the process according to the stratification of institutions were also observed. Although CT data were used for planning in ~90% of the patients, 3D conformal techniques including IMRT were applied less frequently in B institutions. In particular, only 37.5% of the patients were treated with 3D conformal techniques in B2 institutions. In B institutions, lower photon energies <10 MV were also used more frequently. Delivery of high radiation doses without the use of 3D conformal techniques may produce late morbidity of the surrounding tissues. Because some guidelines have recommended that 3DCRT or IMRT techniques should be employed in external beam radiotherapy for prostate cancer (14,15), structural improvement in B institutions should be urgently considered.

In conclusion, the results of the survey identified the standard of practice for treatment planning of prostate cancer in Japan. Although the preferred methods of planning and delivery have been defined somewhat differently at various institutions, it is necessary to define and develop recommended guidelines for the treatment planning process, in particular, for a clinical trial on radiotherapy for prostate cancer.

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We thank all radiation oncologists who participated in this study. Their efforts at providing us with the necessary information make these surveys possible.

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Conflict of interest statement

None declared.

References

1. Nakamura K, Ogawa K, Yamamoto T, Sasaki T, Koizumi M, Teshima T, et al. Trends in the practice of radiotherapy for localized prostate cancer in Japan: a preliminary patterns of care study report. *Jpn J Clin Oncol* 2003;33:527–32.
2. Ogawa K, Nakamura K, Onishi H, Sasaki T, Koizumi M, Shioyama Y, et al. Radical external beam radiotherapy for clinically localized prostate cancer in Japan: differences in the patterns of care between Japan and the United States. *Anticancer Res* 2006;26:575–80.
3. Teshima T, Japanese PCS Working Group. Patterns of care study in Japan. *Jpn J Clin Oncol* 2005;35:497–506.
4. Gerber RL, Smith AR, Owen J, Hanlon A, Wallace M, Hanks G. Patterns of care survey results: treatment planning for carcinoma of the prostate. *Int J Radiat Oncol Biol Phys* 1995;33:803–8.
5. Ogawa K, Nakamura K, Onishi H, Koizumi M, Sasaki T, Araya M, et al., Japanese Patterns of Care Study Working Subgroup of Prostate Cancer. Influence of age on the pattern and outcome of external beam radiotherapy for clinically localized prostate cancer. *Anticancer Res* 2006;26:1319–25.
6. Valicenti RK, Sweet JW, Hauck WW, Hudes RS, Lee T, Dicker AP, et al. Variation of clinical target volume definition in three-dimensional conformal radiation therapy for prostate cancer. *Int J Radiat Oncol Biol Phys* 1999;44:931–5.
7. Roach M, 3rd, Faillace-Akazawa P, Malfatti C, Holland J, Hricak H. Prostate volumes defined by magnetic resonance imaging and computerized tomographic scans for three-dimensional conformal radiotherapy. *Int J Radiat Oncol Biol Phys* 1996;35:1011–8.

8. Nakamura K, Shioyama Y, Tokumaru S, Hayashi N, Oya N, Hiraki Y, et al. Variation of clinical target volume definition among Japanese radiation oncologists in external beam radiotherapy for prostate cancer. *Jpn J Clin Oncol* 2008;38:275–80.
9. O'Neill L, Armstrong J, Buckney S, Assiri M, Cannon M, Holmberg O. A phase II trial for the optimisation of treatment position in the radiation therapy of prostate cancer. *Radiother Oncol* 2008;88:61–6.
10. Weber DC, Nouet P, Rouzaud M, Miralbell R. Patient positioning in prostate radiotherapy: is prone better than supine? *Int J Radiat Oncol Biol Phys* 2000;47:365–71.
11. Fiorino C, Reni M, Bolognesi A, Bonini A, Cattaneo GM, Calandrino R. Set-up error in supine-positioned patients immobilized with two different modalities during conformal radiotherapy of prostate cancer. *Radiother Oncol* 1998;49:133–41.
12. Leal A, Sánchez-Doblado F, Arráns R, Capote R, Lagares JI, Pavón EC, et al. MLC leaf width impact on the clinical dose distribution: a Monte Carlo approach. *Int J Radiat Oncol Biol Phys* 2004;59: 1548–59.
13. Wang L, Hoban P, Paskalev K, Yang J, Li J, Chen L, et al. Dosimetric advantage and clinical implication of a micro-multileaf collimator in the treatment of prostate with intensity-modulated radiotherapy. *Med Dosim* 2005;30:97–103.
14. Jereczek-Fossa BA, Orecchia R. Evidence-based radiation oncology: definitive, adjuvant and salvage radiotherapy for non-metastatic prostate cancer. *Radiother Oncol* 2007;84:197–215.
15. National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: Prostate Cancer V2. 2009. http://www.nccn.org/.

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SPECIAL ARTICLE

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Comprehensive Registry of Esophageal Cancer in Japan, 2001

Preface

The Registration Committee for Esophageal Cancer of the Japan Esophageal Society, has registered cases of esophageal cancer since 1976 and published the first issue of the Comprehensive Registry of Esophageal Cancer in Japan in 1979. The Act for the Protection of Personal Information was promulgated in 2003, and began to be enforced in 2005. The purpose of this Act is to protect the rights and interests of individuals while taking into consideration the usefulness of personal information, keeping in mind the remarkable increase in the use of personal information arising from the development of today's advanced information and communications society. The Registry of Esophageal Cancer Cases has required some adjustments to comply with these Acts. The new registration system has been considered for several years and was finally completed in 2008. The most important point was achieving unlinkable anonymity through hash function encryption. Finally, the registry resumed registering cases of esophageal cancer that had been treated in 2001.

A brief summary follows: a total of 3940 cases were registered from 241 institutions in Japan. As for the histologic type of cancer according to biopsy specimens, squamous cell carcinoma and adenocarcinoma accounted for 91.7% and 2.3%, respectively. The 5-year survival rates of patients treated using endoscopic mucosal resection, concurrent chemoradiotherapy, radiotherapy alone, chemotherapy alone, or esophagectomy were 88.5%, 19.3%, 19.6%, 4.0%, and 42.6%, respectively. Regarding the approach used to perform esophagectomy, 14.3% of the cases were performed endoscopically, that is, thoracoscopically, laparoscopically, or mediastinoscopically. The percentage of operative deaths occurring within 30 days or less after operation and the percentage of postoperative hospital deaths occurring 31 days or more after operation were 2.8% and 3.2%, respectively.

We hope that this Comprehensive Registry of Esophageal Cancer in Japan for 2001 helps to improve all aspects of the diagnosis and treatment of esophageal cancer.

These data were first issued on 12 March, 2009, as the *Comprehensive Registry of Esophageal Cancer in 2001*. Not all pages are reprinted here; however, the original tables and figure numbers have been kept. The authors were at the time members of the Registration Committee for Esophageal Cancer, the Japan Esophageal Society, and made great efforts and contributions in preparing this material.

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Contents

Reference
N-category in: The Japanese Classification of Esophageal Cancer, 9th edition, Japan Esophageal Society

I. Clinical Factors of Esophageal Cancer Patients Treated in 2001

1. Institution-registered cases in 2001

Institutions	Institutions
Aichi Cancer Center	Kawakita General Hospital
Akashi Municipal Hospital	Kawasaki Medical School Hospital
Akita University Hospital	Kawasaki Municipal Hospital
Arao Municipal Hospital	Keio University Hospital
Asahikawa Medical College Hospital	Keiyukai Sappori Hospital
Chiba Cancer Center	Kikuna Memorial Hospital
Chiba Cardiovascular Center	Kin-ikyo Chuo Hospital
Chiba University Hospital	Kin-ikyo Sapporo Nishi-ku Hospital
Dokkyo Medical University Hospital	Kinki Central Hospital
Foundation for Detection of Early Gastric Carcinoma	Kinki University Hospital
Fuchu Hospital	Kinki University Nara Hospital
Fujioka General Hospital	Kinki University Sakai Hospital
Fujita Health University	Kiryu Kosei General Hospital
Fujita Health University Banbuntane Hotokukai Hospital	Kitaibaraki Municipal Hospital
Fukaya Red Cross Hospital	Kitakyushu Municipal Medical Center
Fukuoka University Hospital	Kitasato University Hospital
Fukushima Medical Universiy Hospital	Kitasato University Kitasato Institute Medical Center Hospital
Fukuyama Hospital	Kobe City Medical Center General Hospital
Gifu Prefectural General Medical Center	Kobe University Hospital
Gunma Central General Hospital	Kochi Health Science Center
Gunma University Hospital	Kumamoto University Hospital
Hachinohe City Hospital	Kurashiki Central Hospital
Hachioji Digestive Disease Hospital	Kurume Daiichi Social Insurance Hospital
Hakodate Goryokaku Hospital	Kurume University Hospital
Hamamatsu University School of Medicine, University Hospital	Kuwana City Hospital
Handa City Hospital	Kyorin University Hospital
Hannan Chuo Hospital	Kyoto Prefectural University of Medicine
Health Insurance Naruto Hospital	Kyoto University Hospital
Higashiosaka City General Hospital	Kyushu Central Hospital
Hino Memorial Hospital	Kyushu University Hospital
Hiratsuka City Hospital	Kyushu University Hospital at Beppu
Hiratsuka Kyosai Hospital	Matsuda Hospital
Hirosaki University Hospital	Matsudo City Hospital
Hiroshima City Asa Hospital	Matsushita Memorial Hospital
Hiroshima City Hospital	Matsuyama Red Cross Hospital
Hiroshima University Hospital	Mie University Hospital
Hiroshima University Research Institue for Radiation Biology Medicine	Mito Red Cross Hoapital
Hofu Institute of Gastroenterology	Miyazaki Social Insurance Hospital
Hokkaido University Hospital	Murakami General Hospital
Hyogo Prefectural Nishinomiya Hospital	Mutsu General Hospital
Ibaraki Prefectural Central Hospital	Nagahama City Hospital
Ibaraki Prefectural Central Hospital and Cancer Center	Nagano Prefectural Kiso Hospital
Ishikawa Prefectural Central Hospital	Nagano Red Cross Hospital
Ishinomaki Red Cross Hospital	Nagaoka Chuo General Hospital
Iwakuni Medical Center	Nagayoshi General Hospital
Iwate Medical University Hospital	Nagoya City University Hospital
Iwate Prefectural Isawa Hospital	Nagoya Tokushukai General Hospital
JFE Kenpo Kawatetsu Chiba Hospital	Nagoya University Hospital
Jiai Hospital	Nanpuh Hospital
Jichi Medical University Hospital	Nara Medical University Hospital
Juntendo University Hospital	National Cancer Center Hospital
Juntendo University Shizuoka Hospital	National Cancer Center Hospital East
Junwakai Memorial Hospital	National Defense Medical College Hospital
Kagawa Prefectural Central Hospital	National Hospital Organization Osaka National Hospital
Kagawa University Hospital	National Hospital Organization Chiba Medical Center
Kagoshima University Hospital	National Hospital Organization Chiba-Higashi Hospital
Kagoshima University Medical and Dental Hospital	National Hospital Organization Higashi-Saitama Hospital
Kanagawa Cancer Center	National Hospital Organization Kanmon Medical Center
Kanazawa University Hospital	National Hospital Organization Kasumigaura Medical Center
Kansai Medical University Hirakata Hospital	National Hospital Organization Kyushu Cancer Center
Kansai Rosai Hospital	National Hospital Organization Matsumoto National Hospital
Kashima Rosai Hospital	National Hospital Organization Nagano Medical Center
Katta Public General Hospital	National Hospital Organization Nagasaki Medical Center

Institutions	Institutions
National Hospital Organization Tochigi National Hospital	Showa University Hospital
National Hospital Organization Tokyo Medical Center	Shozankai Saiki Hospital
Nihon University Itabashi Hospital	Social Insurance Omuta Tenryo Hospital
Niigata Cancer Center Hospital	Social Insurance Tagawa Hospital
Niigata City General Hospital	Social Insurance Yokohama Central Hospital
Niigata Prefectural Shibata Hospital	Sonoda Daiichi Hospital
Niigata University Medical and Dental Hospital	Southern Region Hospital
Nikko Memorial Hospital	St. Luke's International Hospital
Nippon Medical School Chiba Hokusoh Hospital	St.Therese Hospital
Nippon Medical School Hospital	Sugita Genpaku Memorial Obama Municipal Hospital
Nippon Medical School Musashi Kosugi Hospital	Suita Municipal Hospital
Nippon Medical School Tama Nagayama Hospital	Tachikawa Hospital
Nishiki Hospital	Takaoka Hospital
Nishi-Kobe Medical Center	Takasago Municipal Hospital
Nishinomiya Municipal Central Hospital	Teikyo University School of Medicine Hospital, Mizonokuchi
NTT West Osaka Hospital	The University of Tokyo Hospital
Numazu City Hospital	Toho University Omori Medical Center
Obitsusankei Hospital	Tohoku University Hospital
Ohta General Hospital Foundation Ohta Nishinouchi Hospital	Tokai University Hospital
Ohtawara Red Cross Hospital	Tokai University Tokyo Hospital
Oita Red Cross Hospital	Tokushima University Hospital
Oizumi Gastrointestinal Medical Clinic	Tokyo Dental College Ichikawa General Hospital
Okayama Saiseikai General Hospital	Tokyo Medical and Dental University Hospital
Okayama University Hospital	Tokyo Medical University Hospital
Okitama Public General Hospital	Tokyo Medical University Kasumigaura Hospital
Onomichi Municipal Hospital	Tokyo Metropolitan Cancer and Infectious Center Komagome Hospital
Osaka City University Hospital	Tokyo Women's Medical University Hospital
Osaka Koseinenkin Hospital	Tokyo Women's Medical University Medical Center East
Osaka Medical Center for Cancer and Cardiovascular Diseases	Tonan Hospital
Osaka Medical College Hospital	Toranomon Hospital
Osaka Prefectural Hospital Organization Osaka General Medical Center	Tottori Prefectural Central Hospital
Osaka University Hospital	Tottori University Hospital
Otsu Municipal Hospital	Toyama Hospital, International Medical Center of Japan
Otsu Red Cross Hospital	Toyama Prefectual Central Hospital
Saiseikai Fukuoka General Hospital	Toyama University Hospital
Saiseikai Fukushima General Hospital	Tsuchiura Kyodo Hospital
Saiseikai Kyoto Hospital	Tsukuba University Hospital
Saiseikai Maebashi Hospital	Tsuruoka Municipal Shonai Hospital
Saiseikai Utsunomiya Hospital	University of Fukui Hospital
Saitama City Hospital	University of Miyazaki Hospital
Saitama Medical Center	University of Occupational and Environmental Health
Saitama Medical University Hospital	University of the Ryukyus Hospital
Saitama Medical University International Medical Center	Wakayama Medical University Hospital
Saitama Red Cross Hospital	Yamagata Prefectural Central Hospital
Saitama Social Insurance Hospital	Yamaguchi University Hospital
Sakai Municipal Hospital	Yamanashi Prefectural Central Hospital
Saku Central Hospital	Yamanashi University Hospital
Sanno Hospital	Yao Municipal Hospital
Sato Clinic	Yokohama City University Hospital
Self Defense Forces Sendai Hospital	Yokohama City University Medical Center
Sendai City Hospital	Yokohama Rosai Hospital
Sendai Medical Center	Yuri General Hospital
Shiga University of Medical Science Hospital	
Shikoku Cancer Center	
Shimada Hospital	
Shimane University Hospital	
Shimura Hospital	
Shinbeppu Hospital	
Shinshiro Municipal Hospital	
Shinshu University Hospital	
Shizuoka City Shimizu Hospital	
Showa Inan General Hospital	
Showa University Fujigaoka Hospital	

(Totoal 241 institutions)

2. Patient Background

Table 1 Age and gender

*** Excluding 18 cases of unknown gender**

Age	Male	Female	Unknown	Cases (%)
~29	3	1	0	4 (0.1%)
30~39	6	3	0	9 (0.2%)
40~49	112	34	0	146 (3.8%)
50~59	813	113	0	926 (24.2%)
60~69	1379	167	2	1548 (40.4%)
70~79	897	139	0	1036 (27.0%)
80~89	119	36	0	155 (4.0%)
90~	4	2	0	6 (0.2%)
Total	3333	495	2	3830
Missing	72	20	0	92

A missing case was defined as a case when no option was selected.

An unknown case was defined as a case when the option named "Unknown" was selected.

Table 12 Tumor location

*** Excluding 291 treatment unknown, missing cases concerning treatment type**

Location of tumor	Endoscopic treatment (%)	Chemotherapy and/or radiotherapy (%)	Surgery		Total (%)
			Palliative operation (%)	Esophagectomy (%)	
Cervical	8 (2.0%)	68 (6.7%)	2 (2.4%)	87 (4.1%)	165 (4.6%)
Upper thoracic	43 (10.6%)	173 (17.0%)	11 (13.4%)	240 (11.4%)	467 (12.9%)
Middle thoracic	249 (61.2%)	508 (50.0%)	43 (52.4%)	1019 (48.3%)	1819 (50.3%)
Lower thoracic	74 (18.2%)	216 (21.3%)	17 (20.7%)	591 (28.0%)	898 (24.9%)
Abdominal	8 (2.0%)	18 (1.8%)	8 (9.8%)	129 (6.1%)	163 (4.5%)
EG	1 (0.2%)	3 (0.3%)	1 (1.2%)	12 (0.6%)	17 (0.5%)
EG-junction(E=G)	0	0	0	19 (0.9%)	19 (0.5%)
Cardia (G)	0	0	0	0	0
Others	0	0	0	0	0
Unknown	24 (5.9%)	30 (3.0%)	0	11 (0.5%)	65 (1.8%)
Total	407	1016	82	2108	3613
Missing	8	5	0	9	22

EG: esophago-gastric

Table 15 Histologic types of cancer according to biopsy specimens

*** Excluding 291 treatment unknown, missing cases concerning treatment type**

Histologic types	Endoscopic treatment (%)	Chemotherapy and/or radiotherapy (%)	Surgery		Total (%)
			Palliative operation (%)	Esophagectomy (%)	
Not examined	24 (5.9%)	29 (2.9%)	0	8 (0.4%)	61 (1.7%)
SCC	353 (86.7%)	926 (91.1%)	77 (93.9%)	1963 (92.8%)	3319 (91.7%)
SCC	282 (69.3%)	473 (46.5%)	47 (57.3%)	1022 (48.3%)	1824 (5.0%)
Well diff.	22 (5.4%)	68 (6.7%)	12 (14.6%)	218 (10.3%)	320 (8.8%)
Moderately diff.	42 (10.3%)	282 (27.7%)	14 (17.1%)	534 (25.2%)	872 (24.1%)
Poorly diff.	7 (1.7%)	103 (10.1%)	4 (4.9%)	189 (8.9%)	303 (8.4%)
Adenocarcinoma	13 (3.2%)	7 (0.7%)	2 (2.4%)	61 (2.9%)	83 (2.3%)
Undifferentiated	1 (0.2%)	8 (0.8%)	0	6 (0.3%)	15 (0.4%)
Carcinosarcoma	0	0	1 (1.2%)	7 (0.3%)	8 (0.2%)
Malignant melanoma	0	2 (0.2%)	0	6 (0.3%)	8 (0.2%)
Other tumors	1 (0.2%)	4 (0.4%)	0	14 (0.7%)	19 (0.5%)
Dysplasia	0	0	0	0	0
Unknown	15 (3.7%)	41 (4.0%)	2 (2.4%)	50 (2.4%)	108 (3.0%)
Total	407	1017	82	2115	3621
Missing	10	7	0	11	28

SCC: Squamous cell carcinoma

Table 19 Organs with metastasis in cM1 case (clinical TNM-classification)

*** Excluding 291 treatment unknown, missing cases concerning treatment type**

Metastatic organs	Endoscopic treatment (%)		Chemotherapy and/or radiotherapy (%)		Surgery				Total (%)	
					Palliative operation (%)		Esophagectomy (%)			
PUL	6	(27.3%)	46	(17.3%)	0		7	(3.6%)	59	(12.1%)
OSS	2	(9.1%)	12	(4.5%)	0		2	(1.0%)	16	(3.3%)
HEP	4	(18.2%)	40	(15.0%)	0		17	(8.7%)	61	(12.5%)
BRA	0		1	(0.4%)	0		0		1	(0.2%)
LYM	9	(40.9%)	146	(54.9%)	3	(75.0%)	160	(81.6%)	318	(65.2%)
MAR	0		1	(0.4%)	0		0		1	(0.2%)
PLE	1	(4.5%)	2	(0.8%)	0		1	(0.5%)	4	(0.8%)
PER	0		1	(0.4%)	0		1	(0.5%)	2	(0.4%)
SKI	0		4	(1.5%)	0		0		4	(0.8%)
OTH	0		2	(0.8%)	1	(25.0%)	5	(2.6%)	8	(1.6%)
Unknown	0		11	(4.1%)	0		3	(1.5%)	14	(2.9%)
Lesions	22		266		4		196		488	
Missing	0		0		0		0		0	
1 organ	22	(95.7%)	266	(82.9%)	4	(100.0%)	196	(97.5%)	488	(88.9%)
2 organs	1	(4.3%)	41	(12.8%)	0		4	(2.0%)	46	(8.4%)
3 organs	0		13	(4.0%)	0		1	(0.5%)	14	(2.6%)
4 organs~	0		0		0		0		0	
Unknown	0		1	(0.3%)	0		0		1	(0.2%)
Total cases	23		321		4		201		549	
Missing	4		9		4		9		22	

PUL: lung, OSS: bone, HEP: liver, BRA: brain, LYM: lymph node, MAR: marrow, PLE: pleural membrane, PER:peritoneal membrane, SKI: skin, OTH: others

Table 20 Clinical Stage (clinical TNM-classification)

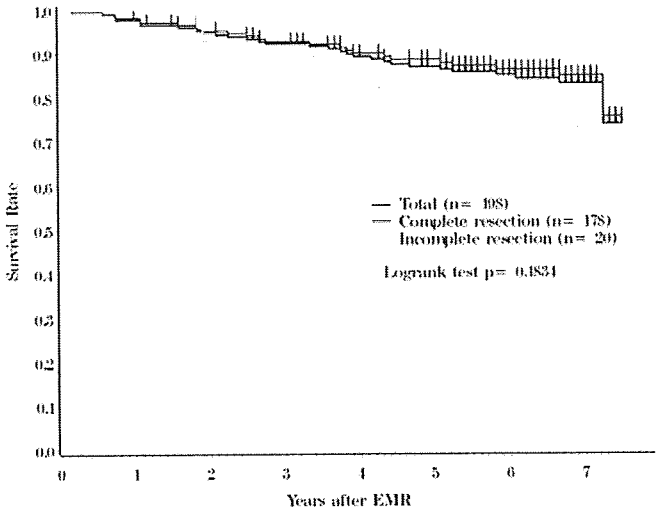
*** Excluding 291 treatment unknown, missing cases concerning treatment type**

cStage	Endoscopic treatment (%)		Chemotherapy and/or radiotherapy (%)		Surgery				Total (%)	
					Palliative operation (%)		Esophagectomy (%)			
0	74	(18.3%)	6	(0.6%)	0		10	(0.5%)	90	(2.5%)
I	245	(60.6%)	99	(9.7%)	18	(22.0%)	460	(21.7%)	822	(22.7%)
IIA	4	(1.0%)	108	(10.6%)	13	(15.9%)	403	(19.0%)	528	(14.6%)
IIB	2	(0.5%)	49	(4.8%)	14	(17.1%)	264	(12.4%)	329	(9.1%)
III	19	(4.7%)	366	(36.0%)	27	(32.9%)	732	(34.5%)	1144	(31.6%)
IV	7	(1.7%)	70	(6.9%)	1	(1.2%)	32	(1.5%)	110	(3.0%)
IVA	3	(0.7%)	58	(5.7%)	0	(0.0%)	78	(3.7%)	139	(3.8%)
IVB	14	(3.5%)	175	(17.2%)	3	(3.7%)	100	(4.7%)	292	(8.1%)
Unknown	36	(8.9%)	85	(8.4%)	6	(7.3%)	42	(2.0%)	169	(4.7%)
Total	404		1016		82		2121		3623	
Missing	13		8		0		5		26	

II. Clinical Results in Patient Treated Endoscopically in 2001

Table 21 Treatment modalities in patients receiving endoscopy

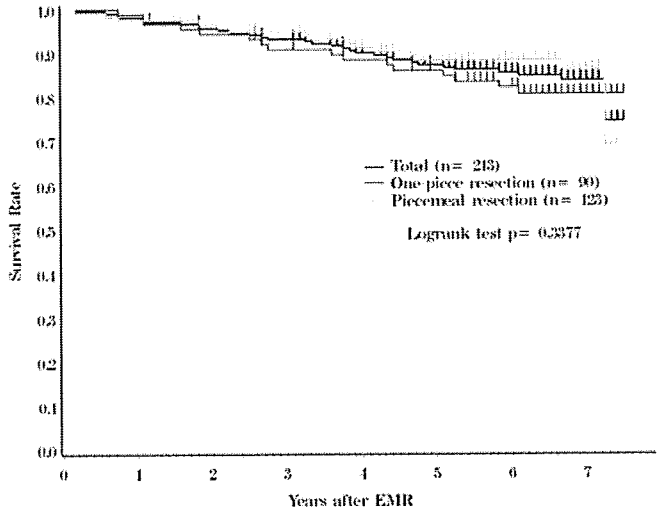
Treatment modarities	Cases (%)
Endoscopic treatment only	341 (81.8%)
Endoscopic treatment +radiotherapy	21 (5.0%)
Endoscopic treatment + chemotherapy	16 (3.8%)
Endoscopic treatment + chemoradiotherapy	36 (8.6%)
Endoscopic treatment + chemoradiotherapy + others	1 (0.2%)
Endoscopic treatment + others	2 (0.5%)
Total	417
Missing	0



	Years after EMR						
	1	2	3	4	5	6	7
Total	97.9%	94.8%	92.1%	89.2%	86.9%	84.9%	83.0%
Complete resection	97.6%	95.1%	92.6%	89.9%	88.5%	86.2%	84.8%
Incomplete resection	100.0%	92.9%	89.3%	85.7%	77.7%	77.7%	73.1%

EMR: Endoscopic mucosal resection

Figure 1 Survival of patients treated by EMR



	Years after EMR						
	1	2	3	4	5	6	7
Total	98.1%	95.6%	93.2%	90.1%	87.3%	85.6%	83.8%
One-piece resection	98.9%	94.4%	90.9%	88.5%	86.0%	82.1%	82.1%
Piecemeal resection	97.5%	96.6%	94.9%	91.3%	88.3%	88.3%	86.4%

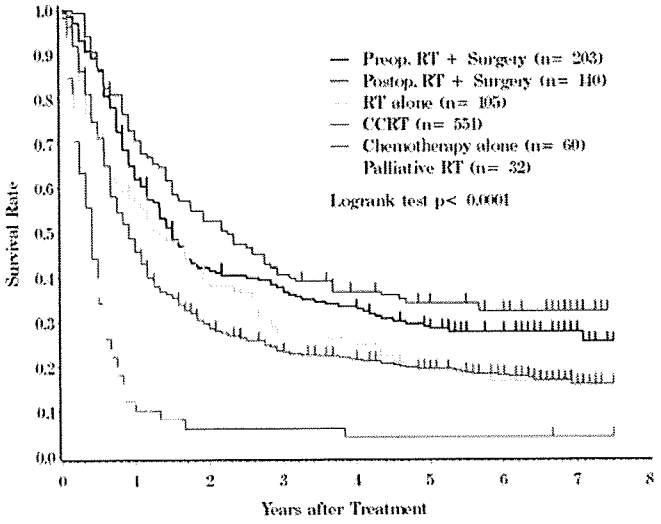
Figure 2 Survival of patients in relation to type of EMR

III. Clinical Results in Patients Treated with Chemotherapy and / or Radiotherapy in 2001

Table 34 Dose of irradiation with or without chemotherapy (non-surgically treated and curative cases)

Dose of irradiation (Gy)	Chemotherapy with (%)		Chemotherapy without (%)		Preop RT (%)		Postop RT (%)	
0	0		0		0		0	
-29	6	(1.6%)	0		10	(3.9%)	7	(3.8%)
30-39	14	(3.7%)	4	(4.0%)	97	(38.0%)	8	(4.4%)
40-49	16	(4.2%)	5	(5.0%)	118	(46.3%)	73	(40.1%)
50-59	36	(9.5%)	6	(6.0%)	9	(3.5%)	47	(25.8%)
60-69	248	(65.8%)	68	(68.0%)	18	(7.1%)	45	(24.7%)
70-	57	(15.1%)	17	(17.0%)	3	(1.2%)	2	(1.1%)
Total	377		100		255		182	
Median (min - max)	60 (2 - 115.4)		64 (30 - 84)		40 (2 - 71.2)		50 (2 - 70)	
Missing	6		0		12		22	

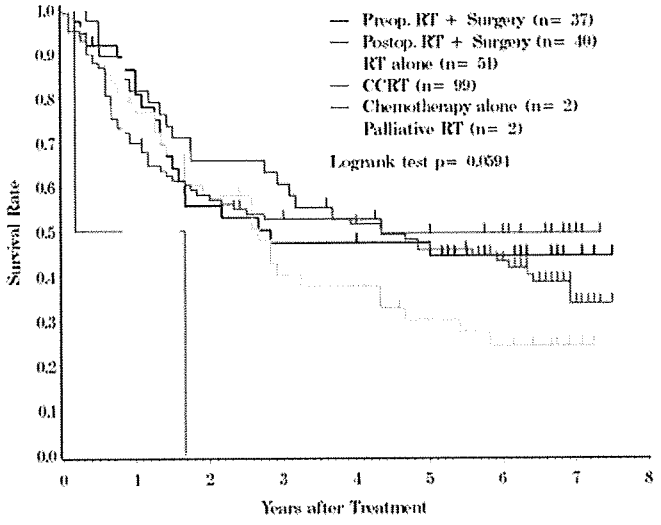
RT: radiotherapy



	Years after Treatment						
	1	2	3	4	5	6	7
Preop. RT + Surgery	61.9%	41.5%	37.7%	33.4%	28.4%	27.8%	27.8%
Postop. RT + Surgery	70.6%	52.6%	40.6%	36.7%	34.2%	32.4%	32.4%
RT alone	56.6%	38.0%	27.5%	26.2%	19.6%	16.7%	16.7%
CCRT	45.6%	28.6%	23.4%	21.6%	19.3%	18.0%	15.9%
Chemotherapy alone	10.1%	6.0%	6.0%	4.0%	4.0%	4.0%	4.0%
Palliative RT	11.9%	4.0%	-	-	-	-	-

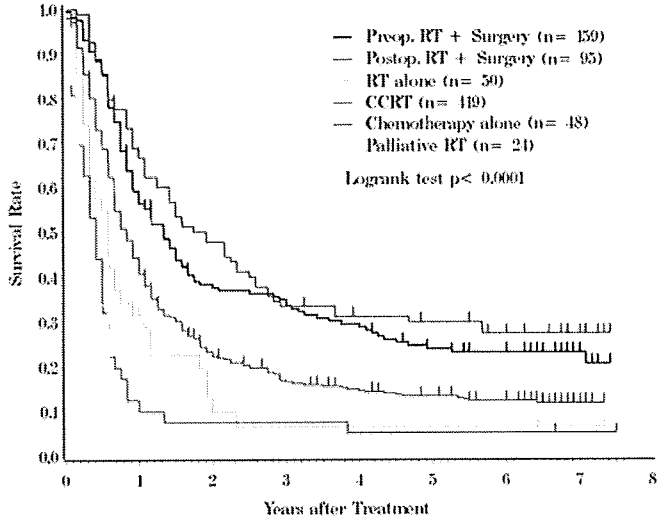
RT: radiotherapy
CCRT: concurrent chemoradiotherapy

Figure 3 Survival of patients treated by chemotherapy and / or radiotherapy



	Years after Treatment						
	1	2	3	4	5	6	7
Preop. RT + Surgery	80.8%	55.7%	47.3%	47.3%	44.4%	44.4%	44.4%
Postop. RT + Surgery	81.6%	65.8%	60.5%	52.5%	49.4%	49.4%	49.4%
RT alone	76.7%	58.0%	40.3%	37.8%	30.0%	24.3%	24.3%
CCRT	69.9%	57.0%	52.7%	51.5%	45.7%	43.1%	33.7%
Chemotherapy alone	50.0%	-	-	-	-	-	-
Palliative RT	50.0%	-	-	-	-	-	-

Figure 4 Survival of patients treated by chemotherapy and / or radiotherapy (cStage I-IIA)



	Years after Treatment						
	1	2	3	4	5	6	7
Preop. RT + Surgery	56.5%	37.6%	34.9%	29.4%	23.8%	23.1%	23.1%
Postop. RT + Surgery	66.6%	47.8%	33.3%	31.0%	29.9%	27.3%	27.3%
RT alone	31.6%	9.7%	6.5%	6.5%	6.5%	6.5%	6.5%
CCRT	40.8%	22.2%	16.9%	14.8%	13.2%	12.1%	12.1%
Chemotherapy alone	9.8%	7.4%	7.4%	4.9%	4.9%	4.9%	4.9%
Palliative RT	5.6%	-	-	-	-	-	-

Figure 5 Survival of patients treated by chemotherapy and / or radiotherapy (cStage IIB-IVB)

IV. Clinical Results in Patients Treated by Esophagectomy in 2001

Table 45 Tumor locations

Locations	Cases (%)	
Cervical	87	(4.1%)
Upper thotacic	240	(11.3%)
Middle thoracic	1019	(48.1%)
Lower thoracic	591	(27.9%)
Abdominal	129	(6.1%)
EG	12	(0.6%)
EG-Junction (E=G)	19	(0.9%)
Unknown	11	(0.5%)
Total lesions	2108	
Total cases	2108	
Missing	18	

Table 46 Approaches to tumor resection

Approaches	Cases (%)	
Cervical approach	94	(4.4%)
Right thoracotomy	1691	(79.9%)
Left thoracotomy	49	(2.3%)
Left thoracoabdominal approach	47	(2.2%)
Laparotomy	65	(3.1%)
Transhiatal (without blunt dissection)	12	(0.6%)
Transhiatal (with blunt dissection)	83	(3.9%)
Sternotomy	15	(0.7%)
Others	52	(2.5%)
Unknown	8	(0.4%)
Total	2116	
Missing	10	

EG: esophago-gastric

Table 47 Endoscopic surgery

Endoscopic surgery	Cases (%)	
None	1796	(85.1%)
Thoracoscopy-assisted	175	(8.3%)
Laparoscopy-assisted	76	(3.6%)
Thoracoscopy + Laparoscopy-assisted	35	(1.7%)
Mediastinoscopy-assisted	15	(0.7%)
Laparoscopy + Mediastinoscopy-assisted	1	(0.05%)
Others	3	(0.1%)
Unknown	10	(0.5%)
Total	2111	
Missing	15	

Table 48 Fields of lymph node dissection according to the location of the tumor

*** Excluding missing 29 cases concerning location**

Locations	Cevical		Upper thoracic		Middle thoracic		Lower thoracic		Abdominal		EGJ		Total	
Region of lymphadenectomy	Cases (%)		Cases (%)		Cases (%)		Cases (%)		Cases (%)		Cases (%)		Cases (%)	
None	3	(3.4%)	10	(4.2%)	40	(3.9%)	14	(2.4%)	2	(1.6%)	1	(3.2%)	70	(3.4%)
C	36	(41.4%)	10	(4.2%)	52	(5.1%)	18	(3.1%)	1	(0.8%)	0		117	(5.6%)
C+UM	21	(24.1%)	4	(1.7%)	0		0		0		0		25	(1.2%)
C+UM+MLM	2	(2.3%)	10	(4.2%)	18	(1.8%)	5	(0.8%)	1	(0.8%)	0		36	(1.7%)
C+UM+MLM+A	14	(16.1%)	132	(55.7%)	383	(37.7%)	146	(24.7%)	12	(9.3%)	0		687	(32.9%)
C+UM+A	5	(5.7%)	5	(2.1%)	1	(0.1%)	1	(0.2%)	0		0		12	(0.6%)
C+MLM	1	(1.1%)	0		1	(0.1%)	0		0		0		2	(0.1%)
C+MLM+A	0		0		3	(0.3%)	1	(0.2%)	0		0		4	(0.2%)
C+A	2	(2.3%)	1	(0.4%)	2	(0.2%)	0		0		0		5	(0.2%)
UM	0		0		5	(0.5%)	7	(1.2%)	1	(0.8%)	0		13	(0.6%)
UM+MLM	0		5	(2.1%)	22	(2.2%)	3	(0.5%)	1	(0.8%)	0		31	(1.5%)
UM+MLM+A	1	(1.1%)	46	(19.4%)	397	(39.1%)	265	(44.9%)	43	(33.3%)	5	(16.1%)	757	(36.2%)
UM+A	0		1	(0.4%)	1	(0.1%)	2	(0.3%)	1	(0.8%)	0		5	(0.2%)
MLM	1	(1.1%)	1	(0.4%)	7	(0.7%)	7	(1.2%)	0		0		16	(0.8%)
MLM+A	0		4	(1.7%)	52	(5.1%)	97	(16.4%)	49	(38.0%)	16	(51.6%)	218	(10.4%)
A	0		6	(2.5%)	23	(2.3%)	20	(3.4%)	17	(13.2%)	9	(29.0%)	75	(3.6%)
Unknown	1	(1.1%)	2	(0.8%)	9	(0.9%)	4	(0.7%)	1	(0.8%)	0		17	(0.8%)
Total	87		237		1016		590		129		31		2090	
Missing	0		3		3		1		0		0		7	

C: bilateral cervical nodes

UM: upper mediastinal nodes

MLM: middle-lower mediastinal nodes

A: abdominal nodes

Table 49 Extent of lymph node dissection

Grade of dissection (D)	Cases (%)
DX	32 (1.5%)
D0	141 (6.7%)
DI	265 (12.5%)
DII	948 (44.9%)
DIII	726 (34.4%)
Total	2112
Missing	14

Table 50 Reconstruction route

Reconstruction route	Cases (%)
None	31 (1.5%)
Antethoracic	238 (11.2%)
Retrosternal	746 (35.3%)
Intrathoracic	267 (12.6%)
Posterior mediastinal	778 (36.8%)
Others	17 (0.8%)
Unknown	39 (1.8%)
Total	2116
Missing	10

Table 51 Organs used for reconstruction

Organs used for reconstruction	Cases (%)
None	29 (1.3%)
Whole stomach	120 (5.4%)
Gastric tube	1731 (77.9%)
Jejunum	81 (3.6%)
Free jejunum	49 (2.2%)
Colon	104 (4.7%)
Free colon	14 (0.6%)
Skin graft	0
Others	86 (3.9%)
Unknown	7 (0.3%)
Total lesions	2221
Total cases	2118
Missing	8

Table 58 Histological classification

Histological classification	Cases (%)
Not examined	5 (0.2%)
SCC	1894 (90.5%)
SCC	219 (10.5%)
Well diff.	452 (21.6%)
Moderately diff.	856 (40.9%)
Poorly diff.	367 (17.5%)
Adenocarcinoma	40 (1.9%)
Barrett's adenocarcinoma	18 (0.9%)
Adenosquamous cell carcinoma	15 (0.7%)
(Co-existing)	6 (0.3%)
(Mucoepidermoid carcinoma)	2 (0.1%)
Adenoid cystic carcinoma	2 (0.1%)
Basaloid carcinoma	21 (1.0%)
Undiff. carcinoma (small cell)	9 (0.4%)
Undiff. carcinoma	3 (0.1%)
Other carcinoma	0
Sarcoma	1 (0.0%)
Carcinosarcoma	14 (0.7%)
Malignant melanoma	7 (0.3%)
Dysplasia	2 (0.1%)
Other	27 (1.3%)
Unkown	27 (1.3%)
Total	2093
Missing	33

SCC: Squamous cell carcinoma

Table 59 Depth of tumor invasion

pT-category	Cases (%)
pTX	17 (0.8%)
pT0	27 (1.3%)
pTis	25 (1.2%)
pT1a	171 (8.2%)
pT1b	472 (22.6%)
pT2	271 (13.0%)
pT3	911 (43.6%)
pT4	169 (8.1%)
Other	0
Unknown	27 (1.3%)
Total	2090
Missing	36

Table 60 Subclassification of superficial carcinoma

Subclassification	Cases (%)
Not superficial carcinoma	1369 (66.4%)
m1 (ep)	62 (3.0%)
m2 (lpm)	59 (2.9%)
m3 (mm)	93 (4.5%)
sm1	77 (3.7%)
sm2	113 (5.5%)
sm3	175 (8.5%)
Unknown	115 (5.6%)
Total	2063
Missing	63

ep: epithelium

lpm: lamina propria muosa

mm: muscularis mucosa

Table 61 Pathological grading of lymph node metastasis

Lymph node metastasis	Cases (%)
n (-)	818 (39.9%)
n1 (+)	302 (14.7%)
n2 (+)	536 (26.2%)
n3 (+)	197 (9.6%)
n4 (+)	149 (7.3%)
Unknown	46 (2.2%)
Total	2048
Missing	78

Table 62 Numbers of metastatic nodes

Numbers of lymph node metastasis	Cases (%)
0	907 (42.7%)
1-3	629 (29.6%)
4-7	275 (12.9%)
8-	215 (10.1%)
Unknown	100 (4.7%)
Total	2126
Missing	0

Table 63 Pathological findings of distant organ metastasis

Distant metastasis (M)	Cases (%)	
MX	36	(1.7%)
M0	2026	(95.7%)
M1	55	(2.6%)
Total	2117	
Missing	9	

Table 64 Residual tumor

Residual tumor (R)	Cases (%)	
RX	112	(5.4%)
R0	1681	(81.0%)
R1	133	(6.4%)
R2	149	(7.2%)
Total	2075	
Missing	51	

Table 75 Causes of death

*** As of August 19, 2008**

Cause of death	Cases (%)	
Death due to recurrence	791	(72.8%)
Death due to other cancer	41	(3.8%)
Death due to other disease (rec+)	24	(2.2%)
Death due to other disease (rec-)	138	(12.7%)
Death due to other disease (rec?)	9	(0.8%)
Operative death*	30	(2.8%)
Postoperative hospital death**	35	(3.2%)
Unknown	18	(1.7%)
Total of death cases	1086	
Missing	5	

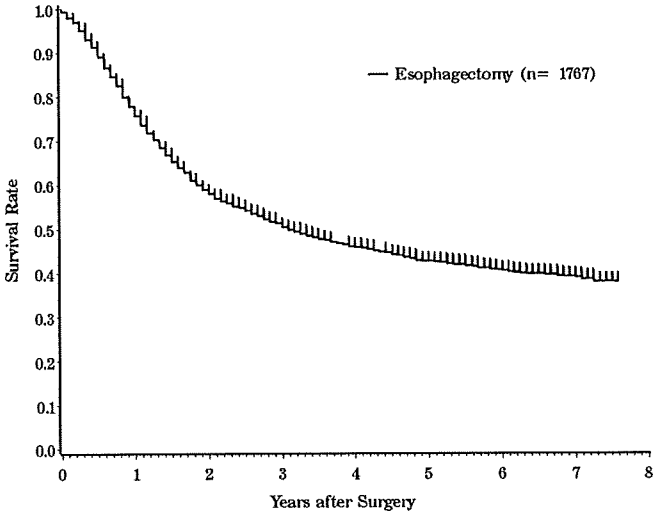
rec: recurrence

*** Death in 30 days or less, **Death after 30 days**

Follow-up period (years)	
Median (min - max)	2.41 (0.00 - 7.58)

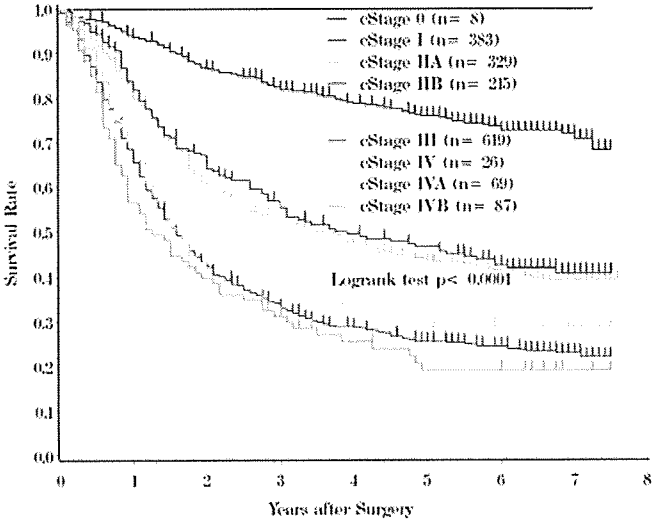
Table 76 Initial recurrent lesion

Initial recurrence lesion of death cases	Cases (%)	
None	975	(40.1%)
Lymph node	483	(19.9%)
Lung	184	(7.6%)
Liver	176	(7.2%)
Bone	115	(4.7%)
Brain	29	(1.2%)
Primary lesion	138	(5.7%)
Dissemination	74	(3.0%)
Anastomotic region	10	(0.4%)
Others	69	(2.8%)
Unknown	179	(7.4%)
Total of recurrence lesion	2432	
Total	2028	
Missing	98	



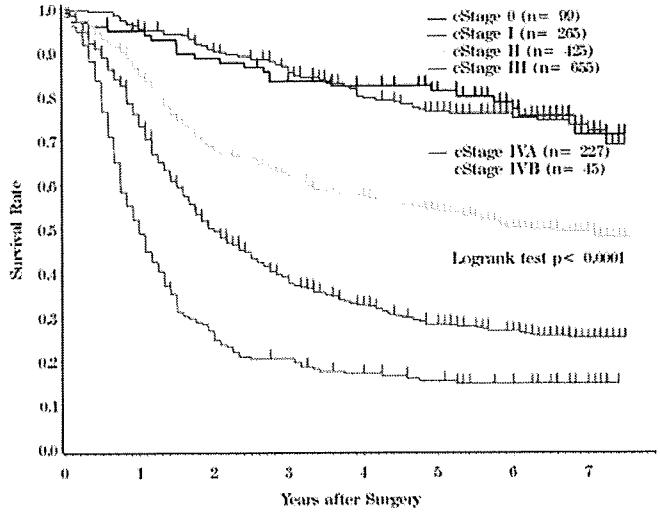
	Years after Surgery						
	1	2	3	4	5	6	7
Esophagectomy	75.8%	58.0%	51.2%	46.1%	42.6%	40.5%	39.2%

Figure 6 Survival of patients treated by esophagectomy



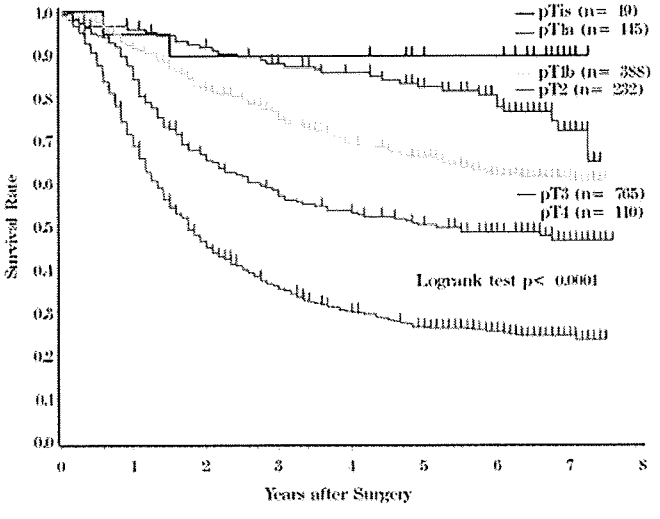
	Years after Surgery						
	1	2	3	4	5	6	7
cStage 0	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
cStage I	93.6%	86.6%	82.4%	78.9%	75.9%	72.5%	71.8%
cStage IIA	80.1%	60.9%	53.4%	47.6%	43.6%	41.6%	39.3%
cStage IIB	81.9%	64.1%	56.4%	49.5%	46.7%	42.5%	40.8%
cStage III	65.6%	42.2%	33.9%	28.9%	25.5%	24.4%	22.9%
cStage IV	34.6%	19.2%	11.5%	11.5%	11.5%	11.5%	11.5%
cStage IVA	68.9%	43.1%	40.0%	33.8%	29.0%	29.0%	29.0%
cStage IVB	56.6%	39.8%	31.2%	25.5%	19.1%	19.1%	19.1%

Figure 8 Survival of patients treated by esophagectomy in relation to clinical stage (UICC-cTNM)



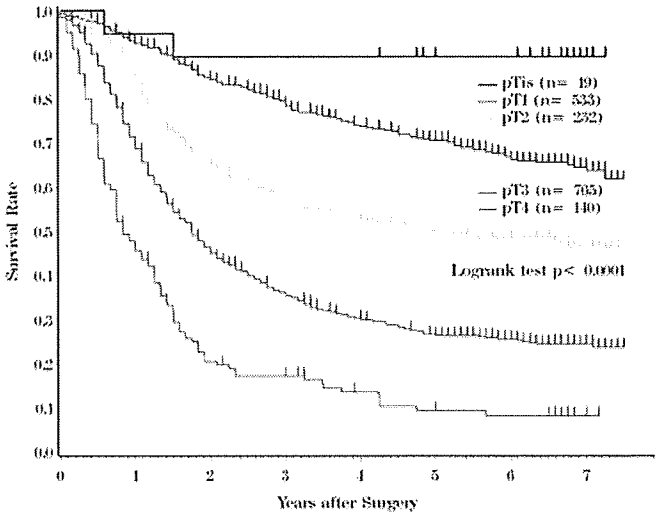
	Years after Surgery						
	1	2	3	4	5	6	7
cStage 0	94.9%	88.6%	83.4%	82.3%	81.1%	77.0%	71.3%
cStage I	95.4%	90.3%	86.3%	80.0%	76.5%	75.0%	73.4%
cStage II	84.7%	67.8%	62.7%	57.5%	54.0%	50.1%	49.2%
cStage III	73.2%	49.4%	38.7%	32.7%	28.1%	26.6%	25.0%
cStage IVA	48.9%	24.6%	20.4%	17.0%	15.3%	14.7%	14.7%
cStage IVB	23.0%	12.8%	7.7%	2.6%	-	-	-

Figure 7 Survival of patients treated by esophagectomy in relation to clinical stage



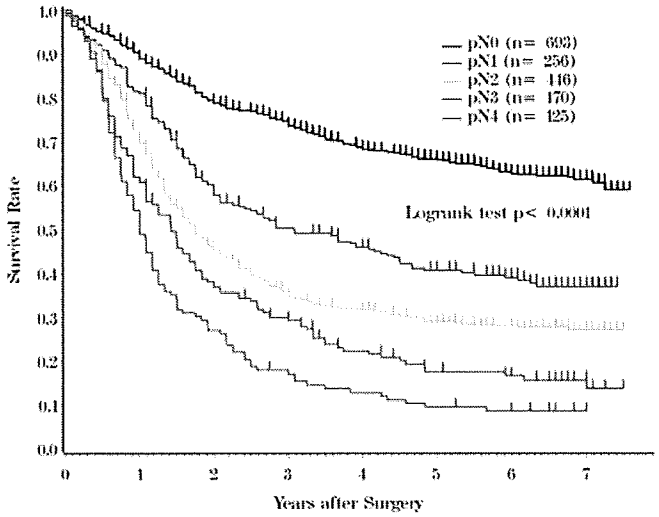
	Years after Surgery						
	1	2	3	4	5	6	7
pTis	94.7%	89.5%	89.5%	89.5%	89.5%	89.5%	89.5%
pT1a	95.8%	91.5%	87.8%	85.5%	82.2%	77.4%	72.0%
pT1b	91.4%	81.8%	76.3%	69.4%	66.1%	61.7%	61.3%
pT2	84.1%	65.2%	65.2%	53.5%	50.0%	48.4%	46.4%
pT3	68.5%	44.9%	35.9%	30.1%	26.3%	25.4%	24.4%
pT4	45.6%	20.3%	17.2%	13.4%	9.3%	8.1%	8.1%

Figure 9 Survival of patients treated by esophagectomy in relation to the depth of tumor invasion (pT)



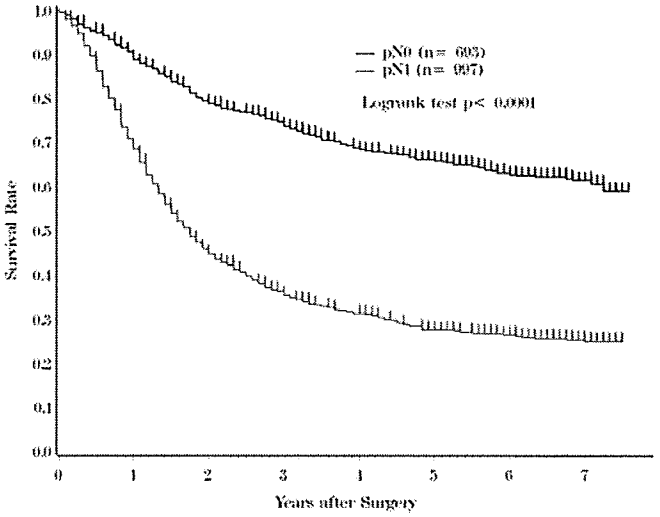
	Years after Surgery						
	1	2	3	4	5	6	7
pTis	94.7%	89.5%	89.5%	89.5%	89.5%	89.5%	89.5%
pT1	92.6%	84.4%	79.4%	73.8%	70.5%	66.0%	64.3%
pT2	84.1%	65.2%	65.2%	53.5%	50.0%	48.4%	46.4%
pT3	68.5%	44.9%	35.9%	30.1%	26.3%	25.4%	24.4%
pT4	45.6%	20.3%	17.2%	13.4%	9.3%	8.1%	8.1%

Figure 10 Survival of patients treated by esophagectomy in relation to the depth of tumor invasion (UICC-pTNM: pT)



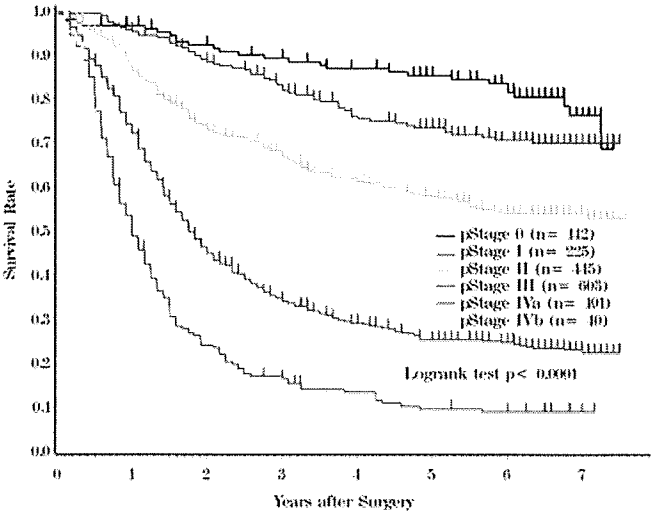
	Years after Surgery						
	1	2	3	4	5	6	7
pN0	88.8%	78.8%	74.3%	68.7%	65.8%	62.6%	61.3%
pN1	81.0%	57.6%	50.3%	45.8%	40.6%	39.1%	37.1%
pN2	69.6%	45.4%	36.0%	31.7%	29.0%	28.1%	27.2%
pN3	60.6%	36.9%	30.0%	22.3%	17.5%	16.7%	15.6%
pN4	48.8%	26.9%	18.0%	12.8%	9.4%	8.5%	8.5%

Figure 11 Survival of patients treated by esophagectomy in relation to lymph node mentastasis (pN)



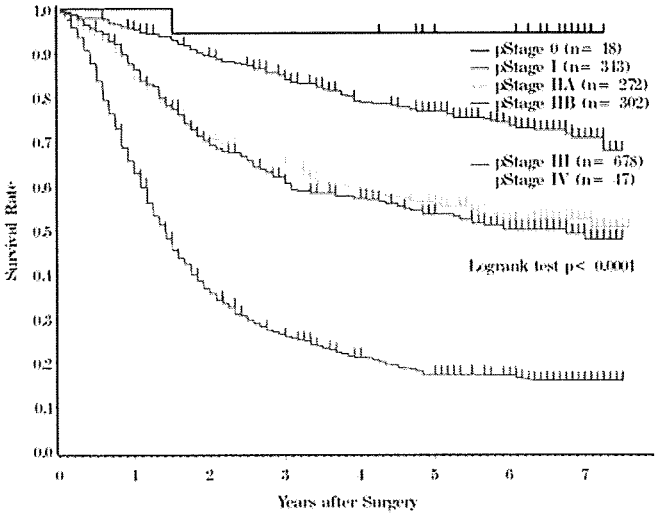
	Years after Surgery						
	1	2	3	4	5	6	7
pN0	88.8%	78.8%	74.3%	68.7%	65.8%	62.6%	61.3%
pN1	68.3%	44.8%	36.3%	31.3%	27.5%	26.4%	25.4%

Figure 12 Survival of patients treated by esophagectomy in relation to lymph node mentastasis (UICC-pTNM: pN)



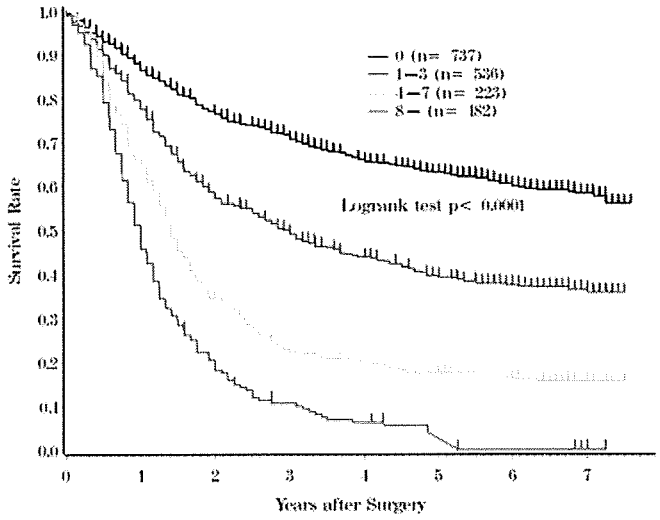
	Years after Surgery						
	1	2	3	4	5	6	7
pStage 0	96.4%	92.0%	89.0%	86.7%	85.1%	81.4%	76.0%
pStage I	95.1%	88.2%	82.6%	75.8%	73.2%	70.4%	69.7%
pStage II	86.1%	72.6%	67.7%	61.6%	57.6%	53.8%	53.8%
pStage III	71.8%	44.7%	34.6%	28.9%	25.0%	24.5%	22.8%
pStage IVa	48.6%	23.8%	16.8%	13.2%	9.4%	8.7%	8.7%
pStage IVb	23.8%	8.9%	6.0%	-	-	-	-

Figure 13 Survival of patients treated by esophagectomy in relation to pathological stage



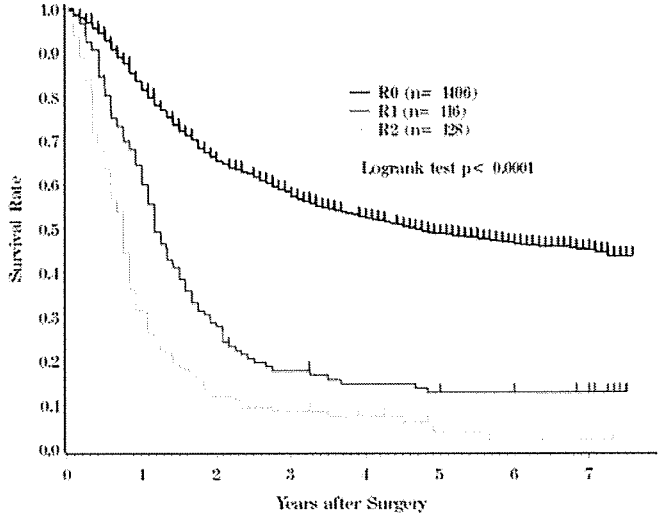
	Years after Surgery						
	1	2	3	4	5	6	7
pStage 0	100.0%	94.4%	94.4%	94.4%	94.4%	94.4%	94.4%
pStage I	95.3%	89.2%	84.6%	79.1%	76.8%	76.8%	70.8%
pStage IIA	84.4%	70.6%	66.5%	59.8%	55.9%	52.5%	52.5%
pStage IIB	86.2%	69.1%	62.0%	57.2%	53.5%	50.0%	49.1%
pStage III	62.8%	35.7%	26.3%	21.1%	17.2%	16.9%	15.8%
pStage IV	24.0%	14.4%	9.6%	4.8%	2.4%	2.4%	2.4%

Figure 14 Survival of patients treated by esophagectomy in relation to pathological stage (UICC-pTNM)



	Years after Surgery						
	1	2	3	4	5	6	7
0	86.3%	76.4%	71.4%	66.0%	63.0%	59.9%	58.3%
1-3	77.6%	57.2%	49.9%	43.8%	39.3%	37.6%	36.5%
4-7	64.5%	34.6%	22.9%	20.3%	17.5%	16.3%	15.6%
8-	45.7%	18.2%	10.6%	6.2%	3.9%	3.9%	3.9%

Figure 15 Survival of patients treated by esophagectomy in relation to number of metastatic nodes



	Years after Surgery						
	1	2	3	4	5	6	7
R0	81.5%	65.2%	58.2%	52.6%	48.8%	46.6%	45.3%
R1	59.9%	27.7%	17.7%	14.7%	12.8%	12.8%	12.8%
R2	31.5%	12.0%	8.6%	7.5%	4.0%	2.0%	2.0%

Figure 16 Survival of patients treated by esophagectomy in relation to residual tumor (R)

Reference

N-category in: The Japanese Classification of Esophageal Cancer, 9th edition, Japan Esophageal Society