

Oncologists' Experience with Patients with Second Primary Cancer and the Attitudes toward Second Primary Cancer Screening: A Nationwide Survey

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Purpose

Screening for second primary cancer (SPC) is one of the key components to survivorship care. We aim to evaluate the oncologists' experience with SPCs and assess the current practice, perceived barriers, and recommendations related to SPC screening.

Materials and Methods

A nationwide survey was conducted with a representative sample of 496 Korean oncologists. A questionnaire based on the findings from our previous qualitative study was administered.

Results

More than three-fourths of oncologists (76.3%), who participated in the study, had experience with SPC patients. Over half of them (51.9%) stated that it was an embarrassing experience. While the current management practice for SPC varies, most oncologists (80.2%) agreed on the necessity in proactively providing information on SPC screening. A short consultation time (52.3%), lack of guidelines and evidence on SPC screening (47.7%), and patients' lack of knowledge about SPCs (45.1%) or SPC screening (41.4%) were most frequently reported as barriers to providing appropriate care for managing SPC. Oncologists recommended the development of specific screening programs or guidelines in accordance to the type of primary cancer (65.9%), the development of an internal system for SPC screening within the hospital (59.7%) or systematic connection with the national cancer screening program (44.3%), and education of oncologists (41.4%) as well as patients (48.9%) regarding SPC screening.

Conclusion

Many oncologists reported the occurrence of SPC as an embarrassing experience. Given the variations in current practice and the lack of consensus, further studies are warranted to develop the optimal clinical strategy to provide SPC screening for cancer survivors.

Key words

Oncologists, Second primary neoplasms, Early detection of cancer, Experience, Attitude

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Introduction

With improved cancer survival, second primary cancer (SPC) has become an important health issue among cancer survivors. Cancer survivors are at an increased risk for developing cancers compared to the general population [1,2]. In the United States, where cancer survivors comprise 3.5% of the total population [3], approximately 10% of all new cancers are diagnosed from a population of cancer survivors, and 8% of survivors have been affected by cancer more than once [4-6]. In Korea, cancer survivors comprise 2% of the total population [7], and an estimated 3% to 4% of all new cancer cases have been diagnosed among survivors.

The development of SPC can lead to poor survival [8]. Because cancer screening can reduce the risk of dying from selected cancers via their early detection [9], screening for SPC should be included as one of the key components of survivorship care [10]. However, SPCs are often undetected during a regular oncological follow-up process [11], and SPC cancer screening practices have not been optimal [12-14]. Although cancer patients have an increased risk of SPC compared to the general population, their cancer screening rates were either slightly higher or similar compared to the general population [15-18].

The lack of information concerning SPC and knowledge among cancer patients were identified as the key barriers to SPC screening [19,20]. Cancer survivors could not differentiate SPC from 'recurrence' or 'metastasis' and could not make the distinction between 'cancer screening' and 'routine surveillance tests.' Many survivors said that they would have undergone screening for SPC if they were aware of it and would have liked to receive information related to SPC from their physicians [19]. However, only 21.5% of them received a recommendation for SPC screening from their doctors [20]. Because oncologists are key personnel for educating survivors and guiding SPC screening [19], we explored oncologists' experience, current practice, perceived barriers, and appropriate care models and recommendations to develop appropriate clinical strategy for SPC screening in our previous qualitative study [21]. In this nationwide study, we aimed to quantify the issues using a representative sample of Korean oncologists.

Materials and Methods

1. Study design and subjects

The present study is part of a nationwide survey that was

conducted to explore medical care and treatment views of physicians involved in cancer care. Physicians at the National Cancer Center and 12 participating government-designated regional cancer centers across Korea participated in the survey. The current study was approved by the Institutional Review Board of the National Cancer Center of Korea.

Of the 901 physicians invited to participate in this study, 680 agreed to (75.5% participation rate) and completed the study survey. We administered questions regarding SPCs only to 505 oncologists who see cancer patients for diagnosis and treatment of primary cancer, while the rest—175 physicians who provide other supportive care or services (e.g., radiologist, pathologist, cardiologist, rehabilitation specialist, pain specialist, and psychiatrist)—were excluded from the study. Additionally, 19 oncologists who did not answer the questions regarding SPCs were excluded from the analyses, leaving a final total of 486 subjects in the current study.

2. Measures

We developed a questionnaire based on the findings from our previous qualitative study [21]. The questionnaires included questions regarding the oncologists' experiences with SPC patients, feelings they had when their patients developed SPCs, current SPC screening practice, barriers to providing SPC screening information, and appropriate care models and recommendations to develop the appropriate clinical strategy for SPC screening. The survey also inquired about age, gender, specialty, years since board certification, and patient volume (average number of outpatients per week).

3. Statistical analysis

Descriptive statistics were used to provide responses to the questions. Chi-squared tests were used for the comparison of the responses in accordance to the subgroups. All statistical analyses were conducted using STATA ver. 12.0 (STATA Corp., College Station, TX), and a p-value of less than 0.05 was considered to be statistically significant.

Results

1. Study participants

The mean age of cancer care physicians was 42.6 years, and the mean time since board certification was 11.6 years. Among the 486 study participants, 384 (79.1%) were male. The sample comprised surgical oncologists (n=274, 56.4%),

Table 1. Characteristics of the oncologists (n=486)

Characteristic	Value
Age (yr)	42.6±7.8
Time since board certification (yr)	11.6±7.7
Gender	
Male	384 (79)
Female	102 (20.1)
Specialty	
Surgical oncologists	274 (56.4)
Medical oncologists	182 (37.4)
Radiation oncologists	30 (6.2)
Patient volume (No. of outpatients/wk)	117.5±77.4

Values are presented as mean±standard deviation or number (%).

Table 2. Oncologists' experience with patients who developed second primary cancer during follow-up (n=371)^{a)}

Response	No. (%)
Embarrassed as the doctor in charge	178 (51.9)
Sorry to the patients	114 (30.7)
The patient seemed not to accept the situation	137 (37.0)
Patients seemed to blame me	96 (25.9)

^{a)}Each choice is not mutually exclusive and one person can choose more than one item.

medical oncologists (n=182, 37.4%), and radiation oncologists (n=30, 6.2%). The mean number of patients per week was 117.5 (standard deviation, 77.4) (Table 1).

2. Personal experiences of oncologists with SPCs

More than three-fourths of the oncologists surveyed (76.3%) had reported that their own patients developed SPCs while being followed-up after primary cancer treatment. With regard to the feelings they had about their own patients who developed SPCs, approximately half of the oncologists (48.1%) stated that they felt embarrassed being the doctor in charge, and one-third (30.7%) felt sorry for the patients. As many as 37.0% of oncologists felt that patients appeared to not have accepted the situation, and 25.9% felt that patients blamed them (Table 2).

3. Current practice of screening for SPCs

The current practice of information provision varies regarding screening for SPCs. Some oncologists (39.1%) reported that they proactively provided information on the necessary screening for SPCs to most patients. Others (28.2%) proactively provided information on necessary screening for SPCs to only high-risk patients. While another group (30.9%) did not typically discuss screening for SPCs during routine practice.

In addition, oncologists differ in how they deal with the necessary second cancer screening. Of those (43.4%) that reported they prescribe necessary screening tests alone, many (24.5%) provide information regarding the national cancer screening program, which is a basic cancer screening package provided to all Koreans over 40 years of age (Appendix 1). A portion of oncologists (27.4%) refer their patients to private comprehensive screening programs,

Table 3. Current practice of second primary cancer screening (n=486)

Response	No. (%)
Provision of information on SPC screening	
Proactively provide information on necessary screening for SPCs to most patient	190 (39.1)
Proactively provide information on necessary screening for SPCs to only high risk patient	137 (28.2)
Do not usually comment on screening for SPCs in routine practice	150 (30.9)
Missing	9 (1.9)
Ways dealing with the needs for SPC screening	
Prescribe necessary screening tests	211 (43.4)
Provide information about national cancer screening program	119 (24.5)
Refer patients to the individual comprehensive screening program	133 (27.4)
Others	18 (3.7)
Missing	5 (1)

SPC, second primary cancer.

Table 4. Barriers to the provision of information on SPC screening (n=486)

Response	No. (%) ^{a)}
Oncologists' own lack of knowledge about SPC screening (e.g., not knowing the screening methods, follow-up of abnormal findings of the screening test)	176 (36.2)
Lack of guideline and evidence on the screening for SPCs	232 (47.7)
Patients' lack of knowledge about SPCs (e.g., confusion with metastasis or recurrence, etc.)	219 (45.1)
Patients' lack of knowledge about SPC screening (e.g., not knowing the needs for screening other than routine surveillance)	201 (41.4)
Short consultation time	254 (52.3)
Lack of system for SPC screening (e.g., lack of connection to comprehensive screening program or survivorship clinic within the center)	183 (37.7)
Lack of connection to the national cancer screening program	164 (33.7)

SPC, second primary cancer. ^{a)}Each choice is not mutually exclusive and one person can choose more than one item.

Table 5. Care models and recommendations suggested by the oncologists (n=486)

Response	No. (%)
Most appropriate care model to improve SPC screening	
Direct provision of SPC screening by oncologists themselves	111 (22.8)
Cooperative SPC screening program in the same hospital by other physicians	280 (57.6)
Provision of SPC screening by local hospitals or clinics of patients' vicinity	75 (15.4)
Having patients to get SPC screenings depending on their own needs	16 (3.3)
Missing	4 (0.8)
Recommendations ^{a)}	
Developing specific screening program or guideline by type of primary cancer	317 (65.9)
Educating oncologists about the SPC screening	199 (41.4)
Educating patients about the needs for SPC screening after the primary treatment	235 (48.9)
Allocating resources for oncologists to have sufficient time for the SPC screening consultation	133 (27.7)
Developing internal system for SPC screening within the hospital	287 (59.7)
Developing systematic connection with the national cancer screening program	213 (44.3)

SPC, second primary cancer. ^{a)}Each choice is not mutually exclusive and one person can choose more than one item.

which are commonly provided by university hospitals (Table 3).

4. Attitudes toward screening for SPCs

Most oncologists (80.2%) agreed to the need for proactive provision of information regarding screening for SPCs. However, many barriers were identified by oncologists: short consultation times (52.3%), lack of guidelines and evidence for SPC screening (47.7%), patients' lack of knowledge about SPCs (45.1%) or SPC screening (41.4%), lack of a system for SPC screening (37.7%), their own lack of knowledge about SPC screening (36.2%), and lack of connections with the national cancer screening program (33.7%) (Table 4).

Regarding the appropriate care model for SPC screening,

more than half of oncologists (57.6%) indicated the need for a cooperative SPC screening program within the cancer center that is managed by physicians other than the oncologists who performed the follow-up on patients for their primary cancer. Approximately one-fourth of oncologists (22.8%) prefer direct provision of SPC screening by oncologists alone, and 15.4% answered that SPC screening is better provided by local hospitals or clinics within the patients' vicinity.

Several recommendations were suggested by the oncologists: developing specific screening programs or guidelines according to the type of primary cancer (65.9%), developing an internal system for SPC screening within the hospital (59.7%), educating patients about the needs for SPC screening after primary treatment (48.9%), developing a systematic connection with the national cancer screening program

(44.3%), educating oncologists about SPC screening (41.4%), and allocating resources for oncologists to have sufficient time for SPC screening consultation (27.7%) (Table 5).

Discussion

Screening for SPC is a relatively new issue in survivorship. Although SPC screening has become a key issue for survivor care, no clinical strategy has been established. In addition, oncologists were not trained to manage the issues during their career development. To our knowledge, this is the first quantitative study to examine oncologists' experiences with patients who develop SPC and the current practices related to SPC screening, as well as recommendations to develop appropriate clinical strategy in providing SPC screening.

More than three-fourths of oncologists had patients who developed SPCs during follow-up, and more than half of these oncologists stated that they were embarrassed by the situation. Approximately one-third of oncologists felt that a significant portion of patients appeared to not have accepted the situation and blamed their oncologists; additionally, the oncologists felt sorry for their patients. As revealed in our study, the cause may be because most oncologists usually do not provide any information or recommend SPC screening during their routine practice [21]. Indeed, only 21% of cancer patients reported that SPC screening was recommended by their physicians [20].

A large variation existed in the oncologists' current practice of SPC screening, ranging from no recommendations, referral to other programs, and direct provision by the oncologists themselves. These findings may partly reflect the oncologists' individual situations, such as clinical burden, self-perceived identity as an oncologist, personal interests, knowledge, training in these issues, and environmental conditions [21]. However, such unwarranted variations in care suggest poor quality of care regarding SPC screening. In addition to this variation in individual oncologists' general patterns of dealing with SPC screening, actual decisions on SPC screening are reportedly made on a case-by-case basis, since SPCs are provided at the patient's request, rather than proactively [21], leading to further variations in the screening practices.

Considering the increasing number of SPCs, most oncologists agreed to the need for proactive provision of SPC screening information. However, several barriers and potential solutions were recognized that are related to (1) the health system, (2) the provider, and (3) the patient.

In concordance with the previous qualitative study, a short consultation time was identified as the most common barrier

against the guidance of appropriate screening for SPC. In Korea, oncologists see 20-60 patients in a single session (lasting 3-4 hours), and the average consultation time is only 7 minutes [22]. Preventative care is performed less frequently with shorter consultation times [23]. Referral of cancer survivors to a systematic cancer screening program would overcome this clinical environmental barrier, and approximately 40% of the respondents of this study felt that the lack of such a system was a significant barrier to providing adequate SPC screening.

Oncologists generally preferred not to be actively involved in the provision of SPC screening. More than 70% of the oncologists preferred to refer their patients to other physicians, either in their own institution or in community clinics. The latter finding reflects the oncologists' low level of interest in participating in primary care services [24], including SPC screening [21]. Personal identity as a cancer treatment specialist and the lack of an opportunity to be educated about preventive services and cancer screening could be the potential explanations for this lack of interest [21]. While cancer survivors expect oncologists to cover all of their health problems, including SPCs, oncologists were more likely to focus on active treatment of the disease [10,21]. Such discrepant expectations were also reported in a United States study, in which the rate of agreement between oncologists and their patients about SPC screening was only 29% [10].

The lack of clear guidelines for SPCs was also considered as a major barrier in providing adequate SPC screening. The cause may be that oncologists lack confidence about their guidance for SPC screening if no guidelines exist for such screening. Furthermore, in our previous study, a portion of oncologists reported that some survivors showed negative attitudes in response to their recommendation for SPC screening, simply because they suspected that oncologists would obtain more financial benefit from prescribing the screening test [21]. Therefore, without clear guidelines, the oncologists would have difficulties for guiding SPC screening to patients, and they could be suspected of over-prescribing by their patients.

Over 45% of the oncologists stated that a patient's lack of knowledge concerning SPCs or SPC screening was also among the significant barriers to appropriate SPC screening practice. Previous studies have shown that patients do not undergo SPC screening due to a lack of information [19], and inadequate knowledge about SPC screening was associated with lower adherence to cancer screening practice [20].

The results of the current study seem to support previous findings, because medical dialogue is the 'interaction' between the patient and physician. Many oncologists were willing to provide consultation about SPC screening when their patients prompted the issue. Therefore, providing patients with adequate knowledge could be a good interven-

tion [25].

Several recommendations are suggested in accordance with the above barriers. From a perspective of the system, the development of an internal connection for SPC screening within the cancer center was suggested. This "institution-based shared care model" was preferred due to the facilitated information that is shared through electronic medical records, easy access and communication with primary care physicians if necessary, and patient's preference for being treated at the same institution where they undergo cancer treatment [21]. By contrast, communication with physicians at local primary care clinics is more complicated due to technological difficulties and legal problems. From the physician's perspective, the development of primary cancer-specific programs or guidelines would enable oncologists to be more confident in guiding appropriate screening for SPCs. Finally, patient education about the need for SPC screening after primary treatment would encourage patients, facilitate discussion, and increase acceptance regarding the appropriate SPC screening.

One significant limitation of our study was its specificity to Korea, where healthcare is provided in a fee-for-service system with universal health insurance coverage with the existence of a national cancer screening program. Therefore, the results cannot be generalized to other countries with different healthcare systems.

Conclusion

In summary, our study revealed that SPCs are a common experience for oncologists, a finding that is embarrassing and difficult to manage effectively. Current practice varies; however, most oncologists that were surveyed agreed to the need for a proactive provision of information regarding SPCs. Many barriers were identified, including a short consultation time and the lack of established guidelines,

oncologists' own knowledge, patients' knowledge, and systematic programs. A cooperative SPC screening program within a cancer center that is managed by physicians other than the oncologists was the most preferred option. Other recommendations included the development of specific screening programs or guidelines according to the type of primary cancer and the development of a systematic connection for SPC screening within the hospital or with a national cancer screening program to educate oncologists, as well as patients about SPC screening. Given the variations in the current practice and the lack of consensus, further studies are warranted to develop the optimal clinical strategy to provide SPC screening for cancer survivors.

Conflicts of Interest

Conflict of interest relevant to this article was not reported.

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Appendix

Appendix 1. National cancer screening program in Korea

Cancer	Target population	Frequency	Test or procedure
Stomach	40 and over (adults)	Every 2 yr	Endoscopy or upper gastrointestinal series
Breast	40 and over (women)	Every 2 yr	Mammography and clinical breast examination
Cervix	30 and over (women)	Every 2 yr	Pap smear
Liver	40 and over high-risk group ^{a)}	Every 6 mo	Sonography and α -fetoprotein
Colorectal	50 and over (adults)	Every 1 yr	Fecal occult blood testing → colonoscopy or barium enema

^{a)}Those who are hepatitis B surface antigen positive or anti-hepatitis C virus positive or have liver cirrhosis.