

Treatment of Small Choroidal Melanoma: An Internet Survey

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Citation

P Finger, M Kurli, J Shulman. *Treatment of Small Choroidal Melanoma: An Internet Survey*. The Internet Journal of Ophthalmology and Visual Science. 2006 Volume 5 Number 1.

Abstract

Purpose: To perform an internet-based survey of practice patterns related to the diagnosis and management of small choroidal melanomas (SCM).

Methods: A 25-question survey was designed using internet-based software including 1 multiple-choice question and 1 request for permission to contact the respondent. Responses were collected by the internet-based proprietary software program.

Results: The 27 respondents include eye cancer specialists from 12 countries, including the Americas, Europe, and Japan. Data included clinical characteristics for the diagnosis of SCM, nomenclature used to define tumor size, characteristics that necessitate treatment, indications for metastatic surveys, available treatments and their efficacy.

Tumor growth was the most important factor in the diagnosis of SCM (67% of respondents). Fifty-nine percent would observe a SCM for growth prior to intervention. Once growth is documented, 83% recommended treatment.

Conclusions: The Internet was used to assess practice patterns of geographically-dispersed eye cancer specialists concerning the diagnosis and treatment of SCM.

INTRODUCTION

Ophthalmic oncology is a relatively small subspecialty within ophthalmology. For example, The Eye Cancer Network has not been able to identify an ophthalmic oncologist in many countries. Many eye cancer specialists are routinely called upon to make life and death decisions without the possibility of subspecialty second opinions. Geography clearly limits the international exchange of ideas and potential for cooperation in case management.

This study examines the use of the Internet to foster international communication and examine current practice patterns; we utilized a commercially available internet-based polling service. We chose an initial subject "treatment of small choroidal melanomas," that is both controversial and poorly defined. Internet-based surveys were sent to eye cancer specialists around the world. Keeping in mind their hectic schedules, the poll was kept short and easily completed. Despite its brevity, questions were written as to define practice patterns including tumor diagnosis, classification, metastatic surveys, and treatment. Herein, we

examine the success of this method of polling and present the results of the survey.

METHODS

A 25-question survey was designed using a proprietary internet-based software service (Zoomerang™, Market Tools Inc., Mill Valley California USA, <http://info.zoomerang.com>). This survey included 23 questions that could be answered as "yes or no," as well as one multiple choice and one optional request for physician identification. The e-mail addresses of known ocular tumor specialists were entered into Zoomerang's confidential online database. Then, the service created and distributed a hyperlink to the survey each week for three consecutive weeks. Once a respondent opted out of the survey, Zoomerang made sure no additional e-mail requests were sent to that person. Recipients with spam-blocking software may not have received these bulk e-mails. One e-mail was returned with addressee unknown.

RESULTS

Of the 142 ophthalmic oncologists who were contacted via Zoomerang™, 51 (36%) viewed the questionnaire and 27 (19%) completed the survey. Participants included physicians from 11 countries, including the Czech Republic, England, France, Germany, Italy, Japan, The Netherlands, the United States of America, Spain, Turkey and Venezuela. Twenty-two respondents (81%) said that they could be contacted with questions related to the survey.

It is important to note that most of these 27 respondents included physicians with combinations of fellowship or apprenticeship training in ophthalmic oncology, titles of Director of Ophthalmic Oncology Services at their center, had participated in the Collaborative Ocular Melanoma Study or were officers of international ophthalmic oncology related organizations. In addition, a PubMed search utilizing respondent's last names, first initial and the key word melanoma yielded 562 articles (mean = 21).

Questions could be grouped into several categories including: demographic information about the respondents, clinical characteristics used to diagnose small choroidal melanoma, tumor size definition nomenclature, characteristics for initiating treatment, indications for metastatic surveys (staging), methods of treatment, opinions about available treatments and their efficacy.

To survey the characteristics necessary for the diagnosis of small choroidal melanoma, respondents were asked to indicate when a small pigmented choroidal tumor would be considered a melanoma.^{1,2,3} Respondents picked, when orange pigment is noted over its surface (17%), when tumor-leakage causes a serous retinal detachment (21%), when tumor thickness exceeds 2 mm (17%), and when all three aforementioned characteristics simultaneously present (13%). Documented tumor growth was the most important factor for 67% of respondents.

Fifty-nine percent would observe a small choroidal melanoma for growth prior to treatment, but once change is documented 83% recommended treatment. Only one respondent (4%) indicated that small choroidal melanomas should be observed until they become medium-sized before treatment is indicated. Of interest, 96% of respondents believed that all small cutaneous melanomas should be removed.

Seventy percent of respondents are using Collaborative Ocular Melanoma Study (COMS) staging criteria; while

only 9% are using the newly devised AJCC-UICC tumor node-metastasis (TNM) classification of uveal melanoma.^{4,5}

Indications for obtaining systemic medical surveys were less clear. Half of respondents perform initial medical surveys on their small melanoma patients, increasing to 79% should the melanoma be noted to grow. The remaining respondents did not feel metastatic surveys were warranted.

Treatment methods vary from country to country and are influenced by availability.^{6,7,8} In this section, we sought information on the most widely used most recently popularized methods of treatment. We found that 17% of respondents used transpupillary thermotherapy (TTT) alone, while 46% would use TTT in combination with radiation therapy (Table I).^{9,10}

Figure 1
Table 1: Treatment of Small Choroidal Melanoma

No.	Involved in care of small choroidal melanomas	Treatment of small tumors				Radiation of small tumors				Differences in complications between T-125, Ru-106, Pd-103	
		TTT alone	TTT & RT alone	RT alone	Proton beam	COMS dosimetry	Averse of ABS recommendation	Ru-106 used	Tumor apex as prescription point		
1	Yes	N	N	Y	N	Y	Y	N	Y	Y	Y
2	Yes	N	N	Y	N	Y	N	N	Y	Y	Y
3	Yes	N	N	Y	N	Y	N	N	Y	Y	Y
4	Yes	N	Y	N	N	Y	N	N	Y	Y	Y
5	Yes	Y	N	N	N	N	N	N	N	N	Y
6	Yes	N	Y	Y	Y	N	N	Y	Y	Y	Y
7	Yes	N	Y	Y	N	Y	Y	Y	N	Y	Y
8	Yes	N	N	Y	N	N	Y	N	Y	Y	Y
9	Yes	N	Y	Y	Y	N	Y	Y	N	Y	Y
10	Yes	Y	N	N	N	Y	N	Y	Y	Y	Y
11	Yes	N	Y	N	N	Y	Y	N	Y	Y	Y
12	Yes	N	Y	Y	Y	Y	Y	N/A	Y	Y	Y
13	Yes	N	N	Y	N	N	Y	N	Y	Y	Y
14	Yes	N	Y	Y	N	N	N/A	N	N	Y	Y
15	Yes	N	N	Y	N	N	N	N	Y	N	N
16	Yes	N	Y	N	N	Y	N	N	Y	Y	Y
17	Yes	N	N	Y	N	N/A	N/A	N	Y	Y	Y
18	Yes	N	N	Y	N	Y	N	N	N	N	N
19	Yes	Y	N	N	N	N	Y	Y	Y	Y	Y
20	Yes	N	N	Y	N	Y	Y	N	Y	Y	Y
21	Yes	N	Y	Y	N	N	Y	Y	N	N	N
22	Yes	N	N	Y	N	N	N	N	N	N	N
23	Yes	N	Y	Y	Y	Y	Y	N	N	Y	Y
24	Yes	Y	Y	Y	N	N	Y	N	Y	Y	Y
25	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
26	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
27	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TTT=Transpupillary Thermotherapy; RT=Radiotherapy;
COMS=Collaborative Ocular Melanoma Study; ABS=American Brachytherapy Society;
Ru=Ruthenium-106; I=Iodine-125; Pd=Palladium-103; N/A=no answer

Radiation therapy (plaque or proton) was used by 75% of respondents. Twenty-two percent employ proton beam and 26% use ruthenium-106 plaques. Nearly half of respondents are using the COMS dosimetry standard (prescription point set at a minimum of 5 mm from the inner sclera); while 59% were aware of the American Brachytherapy Society's 2003 recommendation to use the tumor's apex as the prescription point for iodine-125 irradiation.¹¹ Eighty-three percent of respondents believe there is a difference in complication rates and distribution after iodine-125, ruthenium-106 or palladium-103 plaque radiation therapy (Table I).

DISCUSSION

Early detection and prompt treatment has decreased the rates of metastatic death for patients with breast, lung, skin, colon and prostate cancer.^{12,13,14,15} The concept that early detection saves lives, led to the widespread creation of cancer screening programs.

Thus, mammograms, dermatologic inspections, colonoscopy, and prostate specific antigen (PSA) evaluations are all geared toward finding small tumors before they metastasize. In various areas of medicine, scientific studies have demonstrated that the larger the tumor size the greater the risk of metastatic disease.^{12,13,14,15}

Similarly, the Collaborative Ocular Melanoma Study has shown that tumor size (specifically largest tumor diameter) is one of the two most important and statistically significant risk factors for metastatic death.^{16,17} Despite these findings, the treatment of small choroidal melanomas is a controversial subject.^{18,19,20} Unlike other specialties, ophthalmic oncologists may watch a small cancer grow prior to recommending treatment. This practice pattern is likely due to the occurrence of indeterminate choroidal tumors, our charge to preserve vision, and the relatively small occurrence of metastatic disease (among patients with small choroidal melanomas). These factors are balanced against the risk of treatment-related vision loss.

This international study has revealed that most ophthalmic oncologists are waiting for evidence of small choroidal melanoma growth prior to consideration of treatment. Once growth is documented, most are classifying the tumors by COMS criteria, performing systemic medical surveys and treating their patients with local radiation therapy.

Though TTT is still used as monotherapy, most physicians are adding radiation to this treatment. There exists considerable variability in the methods of radiotherapy and expectations for source-dependent radiation-related side effects.

This study demonstrates how the internet can be used to facilitate an international poll of subspecialists, and to examine their methods of diagnosis and treatment of small choroidal melanoma. It is our hope that internet-based surveys such as this one can be used to further communication between experts and help define current practice patterns.

ACKNOWLEDGEMENT

This study was supported by The EyeCare Foundation, Inc., New York City, New York, USA.

The authors have no proprietary interest in the materials, methods or internet-polling site mentioned in this study. Dr. Finger owns the URL <http://www.eyecancer.com>.

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REPRINT REQUESTS

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