cal recurrence, in-transit metastases, and lymphadenopathy that escape patient self-detection. This conclusion also has been reached by authors evaluating methods of follow-up of breast cancer.[4–8]

Advocating routine radiographic and laboratory studies to search for asymptomatic distant metastases is difficult to justify because treatment seldom provides a lasting survival benefit. Fewer than 10% of study patients, less than 1% of the entire registry, were alive and free of disease after diagnosis of distant recurrence, thereby supporting this view. This era of health-care reform requires consideration of the financial cost of follow-up. Although decisions about patient care cannot be completely directed by cost analysis, justification of expensive evaluations that infrequently discover treatable conditions is difficult. For example, the cost per patient for an intensive postoperative surveillance program over 5 years—consisting of 12 physician visits, 7 chest x-rays, and 7 sets of liver chemistries—would be $1193.50, based on current charges. The financial outlay for each of the 32,000 new patients diagnosed with melanoma each year would be significant and hard to advocate because less than 20% will recur and most with distant metastases will not benefit from treatment.

Intuition and common sense justifies careful and intensive postoperative surveillance for melanoma. Our observations suggest this may not be true. This small retrospective evaluation requires confirmation with larger studies, especially those containing a larger group of asymptomatic patients, before practice patterns can be safely changed. Complete abandonment of patients after surgical treatment of melanoma is incorrect because some are salvaged with wide excision of local recurrence or lymphadenectomy for regional recurrence. Patient symptoms often accurately predict recurrence; however, they are not infallible. Thus, a thorough periodic physical examination by an experienced physician must remain a part of the surveillance program. The intervals between physician visits could be safely lengthened without influencing overall survival if patients are educated to recognize the signs of local, in-transit, and regional recurrences, especially because these are the most common sites of recurrence and are readily detectable by the patient. The absence of effective therapy for distant melanoma metastases makes routine radiographic and biochemical analyses of questionable value. Hopefully, this study will stimulate further investigation and development of more effective strategies for postoperative melanoma recurrence surveillance.

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Discussion

DR. HIRAM C. POLK, JR. (Louisville, Kentucky): Dr. McDonald, Dr. Copeland, Ladies, and Gentlemen, the data on follow-up of melanoma patients is very, very sparse. Therefore, this paper is thought provoking, will be valuable, and will be referenced widely.

There are three main purposes for follow-up of the cancer patient. One is the quality assurance issue to determine if you are doing as good a job as you are supposed to. The second is to determine and detect treatable recurrence. And the third, which was not addressed in this paper and is fairly important in the melanoma patient is, of course, the detection of new primaries.

It looks as if at least 5% of patients who are cured of melanoma in their lifetime will develop a new primary melanoma. And, of course, early detection makes treatment very much more sensible.

I think also another factor—and Marshall alluded to it—often is general good doctoring. You can talk to the patient, and you can often make them feel a lot better about how they are doing. So that's an element of the follow-up process that's very useful.

Much of number one, high-quality assurance, has already been done in the 1950s and 1960s in this country, and the database at the University of Alabama is one of the best in the world. And the quality of standard there is high.

It's of very little value to follow patients, for example, with colorectal cancer, because you can do so little about the recurrences. There is some value in breast cancer because many of those patients are amenable to further retreatment.

Just as Dr. Urist and Dr. Shumate showed in their paper, two thirds of all patients who recur with melanoma recur local/regionally. And all the crepe he hung about untreatable distant metastases does *not* apply to those two thirds of patients. They can be retreated for cure, and you cure at least a third of them. So that's a huge salvage rate in the melanoma patient who has local/regional detected recurrence.

Interestingly enough, half of all of the *second* recurrences are still local/regional. So there is a great deal we can do about that. This substantial salvage as reported in the manuscript in some detail, has over 30% long-term cure of patients whose local/regional recurrence was detected at examination.

One of the philosophic problems in this is how surgical oncology has abdicated the field of cancer care to the medical oncologists. The unwillingness to see, to follow, and to care about our own patients has been a big part of this problem. The follow-up of the melanoma patient is a good place to reverse that trend, because all it requires is a good physical examination and careful evaluation of your patients.

So I think that close follow-up of the patient, adjusted for thickness and duration since the time the patient was treated is really, really worthwhile.

Indeed, some years ago, Dr. John Spratt and I wrote some papers about the nonfollow-up of selected patients, colorectal cancer, it works okay, but that's a nonissue here because recurrent disease there is so seldom treated for cure.

There are some other key issues in this paper.

One is how often you should see the patient and what examination should be done. It takes 5 to 7 minutes, in the new vernacular, of face-to-face time with a patient to do an assessment of these patients. It need not be expensive. Physical examination is the best test.

Indeed, one of my former colleagues, and a member of this Association, regularly did scans in the follow-up of his melanoma patients. You'd be interested to know that there were more false-positives than there were true-positives detected in that process. There is no place for scanning in the regular follow-up of the melanoma patient. You need to keep it simple.

The intervals can be lengthened, depending on how thick the primary is and how far you are out from the initial time.

Although metastatic disease is poorly treated, do remember, as I have said for the third time, local/regional recurrence is highly curable. In the last 12 months, we have seen 758 melanoma patients in follow-up, an average of just under two times apiece. During that period of time, we detected 11 recurrences, 8 of which were asymptomatic and 3 were symptomatic. Now one interpretation of that is the melanoma patient in Kentucky is dumber than the one in Alabama. On the other hand, 8 of our 11 recurrences were asymptomatic.

It's interesting, of those 11 patients, 2 patients had disseminated disease, 9 had local/regional disease that was amenable to retreatment. What's also important in that same period of time is we detected seven new primaries. All were invasive melanomas, but all were less than a millimeter thickness, suggesting that they are easily curable.

It costs our patients, including their x-rays, $148 a year to have the follow-up examination. This turns out, if you want to play the mathematics game, to be about $7,000 for each new cancer or recurrence that was detected. You and you alone, and maybe some of our legislators, can decide whether that's effective.

This is an exceptionally good paper. It will set the standard for how we ought to study this, and I think it poses many, many good questions for all of us. I enjoyed it. Thank you.

DR. COURTNEY M. TOWNSEND, JR. (Galveston, Texas): Dr. McDonald, Dr. Copeland, Fellows, and Guests. I, too, enjoyed this paper and believe that it is very important for those of us who care for and take care of patients with melanoma. It's dramatic, new information that will set the standard for further analysis of the patterns of follow-up.

It has shown, I think, that our preconceived notions about what we are supposed to do and how we are supposed to do it may, in fact, be wrong. The thesis is that the best way to take care of the patient is to find the recurrence and find it early because you can treat it. I thought that the 31% long-term survival for local recurrence only patients was not necessarily so happy, but wondered what the mechanism is for the lack of success for patients who have only a local recurrence treated.

Is this due to the fact that local recurrence is really a manifestation of systemic disease? Why did the group II patients differ from the group I patients? That is, those who presented themselves rather than at the time scheduled. Did they really all present early? Or did some of them miss some of their previously assigned appointments? Were there differences between the initial pathologic stage, although only 15% of patients had lymph nodes resected? Is there any other way you could try to discern why those patients who had thicker lesions didn't particularly fare any worse? And, finally, does this really reflect the fact that survival after recurrence is dependent upon systemically active treatment, and we don't have that yet? Thank you very much.

DR. HAROLD J. WANEBO (Providence, Rhode Island): President McDonald, Members, and Guests. I think this is an interesting paper, and I rise to maybe put forth an opposing viewpoint.

One of their problems is that the title, "Melanoma Recurrence Surveillance: Patient or Physician Based?" had really been very elegantly shown to be both. I think it's really not a question that these patients came at unscheduled visits and that this somehow is an error. Actually, this is good. This is part of the education program in a very intensive follow-up clinic. So, I submit to you that the follow-up of those patients who came in the unscheduled visits, represents an intergral part of the follow-up system. I suspect that these patients came back at unscheduled times because they had been well educated by their doctors.

Now the question about the value of the follow-up routine, "Is there any value in doing follow-up after previous surgery?" I think the database at Alabama has been used to support a lot of our biases. As you all know, one of the questions addressed in the WHO study about the regional node dissection, was whether there was a survival difference in patients having elective *versus* delayed regional node dissection. As you know, there was not a difference in that randomized trial. One of the corollaries of that trial, however, was that it stated very clearly the importance of having close follow-up on the patients who did not have an immediate dissection for intermediate thickness melanomas because patients who were followed closely who did have nodal disease requiring dissection had an equivalent result to those who had an elective dissection and were found to have microscopic disease.

So I think one of the questions I'm going to ask Marshall is about the follow-up in those patients with intermediate thickness melanoma—i.e., would he continue to follow those patients closely? And, lastly, we have looked at our own data on 106 patients treated for recurrent melanoma. We have had a somewhat similar, rigorous follow-up program with all of the biases and so forth. But in this group, we have some success in patients that developed pulmonary metastases. There were 21 who were operated, 18 who were resected; and the cure rate in that group at 5 years was 19%.

The results that we had with regional lymph node metastases was about 11% overall, which is somewhat similar to what you have reported. So I think you can retrieve a group of these patients with recurrence, suggesting that there is value in a monitoring program.

The question then to Dr. Urist would be, do you have a more efficient algorithm for following these patients now based on the data you have presented? It doesn't have to be cost effective, but hopefully, it's efficient for following these patients.

I enjoyed listening to this paper and the opportunity to discuss it. Thank you.

DR. CHARLES R. SHUMATE (Closing Discussion): Good morning. I'd like to thank the discussants, all three, for their insightful and kind comments. It's also a pleasure to address Dr. Polk's comments, as he is not only my former professor, but my continuing professor.

First of all, Dr. Polk, we did not evaluate the number of new primaries. Those data are not available in our database, although they could probably be retrieved. And I agree that it is an issue that we need to address, but I would assume that we would be seeing the typical 3% to 5% new primary rate, except in those patients with atypical nevi in which you might expect a higher recurrence rate.

One thing Dr. Polk alluded to and the question from Dr. Wanebo concerns how we are following patients. Part of the reason for writing this paper, is we noticed that we were beginning to extend our follow-up for better prognostic melanomas. In general, our current approach for *in situ* disease is to see those patients once a year, merely to screen for the development of a new melanoma. Patients who have melanomas less than 1 mm thick are seen at 6 months postoperatively, 12 months postoperatively, and then yearly thereafter. Usually these patients also see their dermatologist or family doctor at regular intervals as well. For patients with poor prognostic melanomas in general greater than 1.5 or 2 mm in thickness or other poor prognostic features, we see them more frequently, and it may range anywhere from 3- to 6-month intervals for the first 2 years, and then 6 months for years 3 through 5, depending exactly on their prognostic features.

Dr. Townsend asked some questions which we grappled with quite a bit in writing this paper. First of all, in the patients who had a lymph node dissection at the time of their primary treatment, 40% did have pathologically positive nodes. Many of these patients were treated in an era in which elective lymph node dissections were being performed, and some of those patients actually did not have clinically positive nodes but pathologically positive nodes. In terms of a difference in the time to recurrence for those patients, we chose not to evaluate the survival intervals for two reasons. One is that the use of elective lymph node dissection is controversial in this group of patients. Secondly, once you began subsetting these patients to that degree, we were down to 10 or 12 patients in each group, and we did not feel that this was enough to draw a statistically valid conclusion.

If you did look just at the wide local excision group—and I have to admit, curiosity got the best of me there—the survival intervals, both disease free and overall, were similar between the two groups, i.e., we saw no difference.

Dr. Wanebo, in terms of the treatment of the distant metastases, overall, we only had 4% to 5% in groups I and II who had long-term, disease-free survival. We had only a small number of patients with pulmonary-only metastases, only approximately 10 or 12, so we did not subset analyze that group. But, in general, the long-term survivors with distant metastases in our database, and our entire database was less than 1%.

I would like to thank very much the Association for the opportunity to present our data. Also, my wife Pam and I very much appreciate the kind hospitality you have extended. Thank you very much.