relate with survival of melanoma patients, *i.e.*, level, thickness, size, ulceration, and anatomic location,[2] most acral lesions, including specifically acral lentiginous melanomas, fall into the poor prognosis group. Results of treatment by several investigators are summarized in Table 7, and reflect generally poor survivals. Day et al.[11] reported on 151 patients, analyzing 13 independent variables, and found primary location on the foot to be one of three independent risk factors, along with thickness and mitosis rate. In the series reported here, 26 of 34 (76.5%) ALM patients had lesions thicker than 1.5 mm, and ulceration was present in all but a few of the small, early lesions. It is apparent that some form of adjuvant therapy is indicated, in addition to wide local excision and regional lymph node dissection (RLND). In the authors' experience, the addition of adjunctive regional chemotherapy by isolated limb perfusion has been effective and provides high dose chemotherapy with minimal toxicity, and, perhaps equally important, avoids compromising the host immune system.[20] The five-year cumulative survival for 68 Stage I patients with AM, Levels III, IV, and V, is 60.8% at five years and 39.4% at ten and 15 years. Additional systemic adjuvant therapy may also be appropriate in extremely high-risk patients.

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Discussion

DR. ROBERT BEAZLEY (New Orleans, Louisiana): Dr. Krementz and his colleagues at the Tulane Medical Center have reviewed a clinicopathologic group of malignant melanoma, a new variant entitled acral lentiginous melanoma. From reading the manuscript and from listening to the talk, I wonder if there's really any difference between acral lengitinous melanoma and acral type melanoma. We're probably talking about the same thing, but there is some question of whether or not we'll ever be able to make this decision, because of the pathologic difficulties that Dr. Krementz alluded to. The area of ulceration, the extensive size of the lesion, and the inappropriate biopsy specimens

taken sometimes make it very difficult to decide. But when one looks at the survival figures, which overlap the two groups, I think that there is a good possibility that most all acral lesions are probably of the acral lentiginous variant.

I think that the survival figures for acral lentiginous melanoma are probably worse than they are for the superficial spreading melanoma on the lower extremity, and a little bit worse than nodular melanoma, but not terribly so. Certainly, Dr. Krementz's survival figures are considerably better than those published in the world literature for subungual melanomas and plantar surface melanomas, and this brings to question what the role of isolated perfusion is in the management of this type of lesion. Certainly, the biologic factors of this disease should be unfavorable, because these lesions are ulcerated, they're on the plantar surface of the foot and subject to trauma continuously, one would think they would do very badly. However, his survival statistics, of roughly 50% over all, seem inordinately good, and I question the effectiveness of isolated limb perfusion in this entity.

Another question which remains unanswered is the role of lymphadenectomy.

DR. HAROLD J. WANEBO (Charlottesville, Virginia): I'm also priviledged to be asked by Dr. Krementz to discuss his paper. Certainly, he's to be commended for bringing to our attention this fact, that there is a group of melanomas called acral melanomas. These are just melanomas in the distal aspect of the extremities. Most of us do not see enough subungual melanomas to develop a large personal experience with them, so it's important to have a group of these together, so we can talk and see what their history is.

Regarding prognostic factors, it's obvious that, in addition to Clarks level, tumor thickness, or ulceration, the site is obviously important and I think this is one factor that he has brought home. Thus, the term "acral" probably describes a melanoma with distinctive biology. The lentiginous type of melanoma, when it occurs in the head and neck area (Hutchinson melanotic freckle) has a favorable prognosis—whereas when it occurs in the distal parts of extremities (acral melanoma), it obviously has a much worse prognosis, primarily because it is a thicker lesion, I would suspect.

In other areas, at the cutaneous/mucosal interfaces—for example, anorectal melanoma—which also falls into this type, has a very grim prognosis around the 12% range; which is much worse than the acral melanomas reported today.

One of the problems that I think would be worth looking into—at least pathologically—are there distinctive differences between nodular melanomas and superficial spreading melanomas and the acral lentiginous melanomas? And I would suspect that if you measured these, and then related them to prognosis, they might be quite similar. Thus, very thick or thin acral lentiginous melanoma would behave similarly to thick or thin nodular melanoma, or superficial spreading melanoma.

Regarding management, I think most would agree with the need for amputations for the subungual lesions—of the toes and fingers. As you saw, the results even in this series were rather poor with that group of patients. I would ask two questions: What is the selection process in determining the need for lymph node dissection or perfusion? Does one use the thickness of the lesion, or are all patients treated by the same procedure?

Second, what are the relationships of these lesions to the occurrence of nodal metastases?

DR. EDWARD T. KREMENTZ (Closing discussion): For all intents and purposes, the behavior of acral melanoma and acral lentiginous melanoma is essentially the same; acral melanoma being an anatomic definition and acral lentiginous melanoma being the clinicopathologic variant.

I think the role of perfusion is that it reduces the incidence of local recurrence, reduces the incidence of satellitosis, which is something under 5% in our cases, and probably adds 15% or more to the 5 year salvage.

ALM is a lesion in which node dissection is indicated. Most of the lesions are going to be thick, wide, and ulcerated when you see them, so they fall in the category that requires lymph node dissection.

Finally, level by level and millimeter by millimeter, the prognosis is pretty much the same for all of these variants of melanoma.