BACKGROUND AND OBJECTIVES:

In the literature, drainage to epitrochlear and popliteal sentinel lymph nodes (SLN) are analyzed for whole or distal extremity (below elbow or knee) melanomas that are not topographically homogeneous with respect to tendency of drainage to interval SLNs. We hypothesize that acral (hand and foot) skin has a uniform frequency of drainage to interval SLNs, which is higher than reported for distal extremity melanomas.

METHODS:

One hundred healthy subjects were enrolled. Fifty subjects had standard four extremity lymphoscintigraphies by radiocolloid injection into an interdigital web space as in lymphodynamic studies. On another 50 subjects, either targeted upper (n = 25) or lower (n = 25) extremity lymphoscintigraphies were performed utilizing injection sites that likely drain to interval SLNs. Acral skin drainage to interval SLNs was analyzed for interindividual variability and injection site dependence.

RESULTS:

There was considerable interindividual variability in drainage of each injection site to interval SLNs. Hand skin had a uniform 50% frequency of drainage to epitrochlear-midhumeral SLNs with both injection sites. This frequency was higher than the epitrochlear SLN frequencies reported for distal extremity melanomas. Foot skin had 10% and 90% frequencies of drainage to popliteal SLNs from standard and targeted injection sites, respectively. Foot skin largely simulates the tendency of drainage reported for distal extremity melanomas while lateral heel represents a limited zone that almost uniformly drains to popliteal SLNs.

CONCLUSIONS:

Despite dissimilarities between hand and foot, acral skin drainage to interval SLNs is high enough to obligate a thorough interval SLN exploration in acral primaries.