Letters

RESEARCH LETTER

Analysis of Trends in US Melanoma Incidence and Mortality

The incidence of and mortality from invasive melanoma in the United States has risen steadily for at least the past 2 decades. Similar trends are being seen worldwide despite numerous efforts to enhance primary prevention and early detection, and these increasing rates are having an impact on the public health and economic burden of disease. In 2009, we reported on the status of US melanoma incidence at that time. The purpose of this study was to provide updated information on trends in melanoma incidence and mortality that will help to elucidate the current state of this cancer in the United States.

Methods | The absolute number of invasive melanomas reported in 2016 were obtained for comparison with similarly obtained data in 2009. Calculations were made to determine the lifetime risk of developing a melanoma based on estimated annual incidence, average life expectancy, and the base years’ US population after correcting for persons with multiple primary melanomas. Raw incidence rates were calculated for 2016 and compared with 2009 to determine the cumulative increase. Compound annual growth rates (CAGR) were then calculated to determine the annual percentage growth rate over the 7-year study interval. Institutional review board approval was not applicable because this study did not report on data involving human subjects.

Results | An estimated 76,380 Americans will be diagnosed with invasive melanoma in 2016. Melanoma raw incidence rates per 100,000 population also climbed from 22.2 to 23.6 (0.9% CAGR). The current lifetime risk of an American developing invasive melanoma is 1 in 54 compared with 1 in 58 when we last reported in 2009 (Figure 1). In situ melanoma incidence has risen more rapidly over the studied period (3.0% CAGR) with the lifetime risk of developing in situ melanoma rising from 1 in 78 to 1 in 58 during the studied period. In combination with the estimated 68,480 cases of in situ melanoma in 2016, the lifetime risk for being diagnosed with invasive or in situ melanoma is now 1 in 28. The annual number of population-adjusted melanoma deaths has risen at a 1.5% CAGR (raw mortality rates per 100,000 population increasing from 2.8 to 3.1) with a current estimate that 10,130 Americans will die from melanoma in 2016 (up from 8,650 in 2009) (Figure 2).

Discussion | The overall burden of disease for melanoma is increasing and rising rates are not simply artifact owing to increased detection of indolent disease. Actual incidence rates may be higher than noted in this study because melanoma is not a reportable disease in many states and some tumors that are biopsied and excised in an outpatient setting may miss hospital tumor registries if they are processed in nonhospital pathology laboratories. The incidence of melanoma in situ is increasing at a faster rate than that of invasive melanoma and the incidence of thin invasive tumors are also increasing at a faster rate than thicker tumors. Nevertheless, the absolute number of thicker tumors is still materially increasing which is having an impact on the mortality rate. Five-year survival rates are also rising, likely owing to the increasing ratio of thin to thicker tumors, and this will hopefully continue to improve.

Other studies have proposed that invasive melanoma incidence rates are rising more rapidly than mortality, suggesting that earlier detection is having an impact. However, despite the 2014 Surgeon General’s Call to Action to Prevent Skin...
Cancer, this study’s results demonstrate that the incidence of invasive melanoma in the United States is increasing on a lesser trajectory in the last 7 years than the mortality rate, suggesting that we may not yet be seeing the effect of earlier detection on melanoma mortality.

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Patient-Acquired Photographs for the Management of Postoperative Concerns

Telemedicine has improved accessibility and convenience for dermatologic care, especially for the management of medical concerns and for screening of skin cancers. The ubiquity of technology that is able to take photographs (eg, smartphones and digital cameras) has allowed for patient-directed use of teledermatology. Its applicability to dermatologic surgery is somewhat limited, although self-acquired patient photographs have been used for assistance with identification of biopsy sites. Our quality improvement study assessed the utility of patient-directed photography for triaging and managing concerns that occur after dermatologic surgery.

Methods | The University of Texas Southwestern Medical Center Institutional Review Board approved this study. As this was a retrospective internal quality improvement study, patient consent was waived. Patients who underwent a procedure performed by any of the Mohs surgeons at The University of Texas Southwestern Medical Center from November 17, 2015, to March 17, 2016, were included in this study. All patients who called with a postoperative concern (other than questions regarding wound care or pain control) were triaged by 1 of 2 Mohs surgeons (D.S. and R.I.N.) or 2 fellows (S.R.J. and M.S.M.), who followed a script to assess the patients’ concerns. Patients were offered the opportunity to email a photograph of the surgical site. All patient photographs were uploaded to the electronic medical record. Patients with photographic assessment of active bleeding or infection were requested to return for an in-office postoperative visit immediately. All patients who called were also offered a postoperative visit, but those who declined in-office assessment received a follow-up telephone call 1 to 3 days after the initial call to ensure that the patient was improving. Two of 3 dermatologic surgeons (S.R.J., M.S.M., and R.I.N.) blindly evaluated all photographs to assess interobserver concordance.

Results | Of the 877 patients who underwent procedures during the study period, 50 (5.7%) called with a postoperative concern. Most calls were regarding head and neck sites in patients who had undergone Mohs surgery (Table). Five calls (10.0%) involved concerns for active bleeding, hematoma, or infection, while the remaining 90.0% were of low urgency (Figure). Of the 50 patients who called, 43 (86.0%) provided photographs for evaluation, and 100% reported satisfaction (assessed at follow-up visit or via a telephone call) with assessment of the photograph, with a mean satisfaction score of 4.81 of 5 (where 5 indicates most satisfied). Seven patients (14.0%) did not send a photograph, citing the inability to do so or sensitivity of the involved site (eg, genitalia). Convenience was the most cited reason for preference of evaluation of a photograph (42 of 43 [97.7%]).

All patients who sent a photograph reported alleviation of their concerns after receiving recommendations via the telephone. Twenty of the 43 patients (46.5%) evaluated by photograph were also seen in the clinic for suture removal or wound check, at which time there was also no change in assessment or management by the health care professional. Patients who were not followed up in the clinic were called, and all reported improvement of symptoms or concerns in the time since the surgery. Blinded review of patient photographs without clinical history demonstrated 95.3% concordance (41 of 43 photographs) in assessment among dermatologic surgeons. Reasons given for the 2 discordant cases are that one was a questionable infection for which clinical history was imperative (eg, worsening erythema and drainage) and the other was difficult to distinguish between hypergranulation vs hemorrhagic crust on a granulating mucosal lip.

Discussion | In this study, while all patients who called were offered a postoperative visit, most preferred to electronically transmit photographs for evaluation. All patients reported improvement of their symptoms following telephone triaging. Patients demonstrated a future preference for the use of photographs as opposed to a postoperative visit, citing convenience and rapid