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Observational study of type of surgical training and outcome of definitive surgery for primary malignant melanoma

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The incidence of primary cutaneous malignant melanoma continues to rise,[1] coinciding with narrower excision margins of normal skin being recommended around primary melanomas.[2 3] The bulk of surgery for primary melanoma is now done on an outpatient basis under local anaesthesia. This change has occurred at a time when training in dermatological surgery has developed, leading to a much higher proportion of excisions of primary melanoma being done by dermatologists. In 1979 in the west of Scotland only 3% of all primary melanomas were removed by dermatologists. By 1998 this figure had risen to 40%. Plastic surgeons now excise 26% of primary melanomas compared with 65% 20 years ago, and general surgeons excise 34% compared with 32%.

We aimed to establish if the change in type of surgeon removing primary cutaneous malignant melanoma has affected the prognosis, and also whether any evidence exists for a specialist treatment effect such as has been observed for breast cancers, with better outcomes for surgeons carrying out breast cancer surgery regularly.[4]

Participants, methods, and results

We identified 4159 melanoma patients from the files of the Scottish melanoma group. All patients had had their primary melanoma removed between 1979 and 1998. We divided the surgeons performing the definitive excision of the primary melanoma into dermatological, plastic surgery, or general surgery training. We recorded age, sex, tumour thickness, presence of ulceration, and maximum diameter of the primary tumour and noted mortality and cause of death up to 1998. We also looked at the effect within the three surgical groups of treating up to six or more than six primary melanomas annually.

An average of 10 years' follow up information was available for all patients. To test for an association between tumour thickness and type of surgical experience we used the χ^2 statistic for trend, aggregated over the period of diagnosis. We used the Cox proportional hazards model to compare the survival of patients in relation to surgical experience,[5] with adjustment for thickness, ulceration, and maximum diameter of tumour and sex, age, and deprivation category of patients.

The table shows the division of patients by tumour thickness, ulceration, maximum diameter of primary melanoma, and outcome by surgical training. Dermatologists treated a significantly higher proportion of thin melanomas ($P<0.001$). The proportion of ulcerated melanomas was higher in the plastic surgery group than in the dermatological group ($P<0.001$) and higher in the general surgical group than the plastic surgery group ($P<0.001$).

After adjustment for thickness, the best outcome was in the dermatological surgeon treatment group

Details of melanomas treated, by surgical groups adjusted for type of surgical training. Values are numbers (percentages) unless stated otherwise

Characteristics of melanomas	Dermatologist surgeon (n=1076)	Plastic surgeon (n=1691)	General surgeon (n=1392)	Total (n=4159)
Primary tumours <1.5 mm thick	739 (69)*	809 (48)	589 (42)	2137 (51)
Primary tumours 1.5-3.49 mm thick	217 (20)	447 (26)	342 (25)	1006 (24)
Primary tumours ≥3.5 mm thick	120 (11)	435 (26)	461 (33)	1016 (24)
No of primary tumours ulcerated	129 (12)*	432 (26)*	499 (36)	1060 (25)
Relative hazard ratios† (95% CI) (risk of death)				
Adjusted for thickness‡	1.0	1.33 (1.07 to 1.65)	1.41 (1.14 to 1.75)	P=0.008
Adjusted for thickness and ulceration	1.0	1.22 (0.97 to 1.54)	1.23 (0.97 to 1.55)	P=0.19
Adjusted for thickness, ulceration, and maximum diameter	1.0	1.14 (0.88 to 1.48)	1.18 (0.90 to 1.54)	P=0.48

*P<0.001 for comparison of proportion of thin melanomas treated by dermatological surgeons compared with other surgeons; also for proportion of ulcerated melanomas both between dermatological and plastic surgeons and between plastic and general surgeons.
†Sex, age, deprivation category, and year of diagnosis were considered in the model but did not contribute any significant impact on surgical training differences.
‡Thickness of primary tumour has been entered as a stratification variable owing to non-proportionality of the hazard functions.

(P=0.008). Statistical significance was lost when adjustment was made for ulceration and then for maximum diameter. We found no evidence that surgeons in any of the three categories who performed more than six primary melanoma excisions annually had better outcomes than those who performed fewer excisions.

Comment

Survival of melanoma patients does not depend on the surgical background of the person removing the primary tumour. The object of this study was to provide an evidence base for primary care guidelines on appropriate specialist referral. The data show that the growth in dermatological surgeons excising primary melanomas has had no adverse affect on patient outcome. We found no evidence that any type of surgeon performing excisions of primary melanomas regularly had a better outcome than those who carried out fewer excisions, possibly because wide local excision is a relatively simple procedure. We therefore provide an evidence base to recommend referral of suspected primary melanomas to the dermatological, plastic surgery, or general surgical service with the shortest surgical waiting time.

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Drug points

Dysgeusia and burning mouth syndrome by eprosartan

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Eprosartan is an angiotensin II receptor antagonist. Dysgeusia and burning mouth syndrome attributed to angiotensin converting enzyme inhibitors have been reported.[1] Several case reports related to angiotensin II receptor antagonists have also been published. We report the case of a patient in whom oral eprosartan induced reversible taste disturbance and burning mouth sensation on two occasions. This case was reported to the Catalan pharmacovigilance centre.

A 48 year old woman with a 10 year history of essential hypertension was being treated with valsartan 160 mg daily. She had no other medical condition and was not taking any other drugs. She started taking eprosartan 600 mg daily because her blood pressure remained uncontrolled with valsartan. Three weeks later she complained of a metallic taste and a burning sensation in her mouth. The oral cavity was normal and no underlying medical causes were identified. She stopped taking eprosartan and one week later her taste had returned to normal. The dysgeusia was not attributed to eprosartan and she started taking the drug again. A few days later, dysgeusia and the burning sensation in her mouth returned. She stopped taking eprosartan and her taste recovered in two days.

Taste disorders related to angiotensin II receptor antagonists had not been described in clinical trials,[2] but several cases of dysgeusia have been reported in patients treated with losartan[3–5] and with valsartan.[6] To our knowledge, this is the first reported case of dysgeusia induced by eprosartan and the first case of dysgeusia induced by angiotensin II receptor antagonists with positive rechallenge. Dysgeusia with losartan but not with angiotensin converting enzyme inhibitors has been reported to occur in the same patient, suggesting that angiotensin converting enzyme inhibitors or angiotensin II receptor antagonists produce this effect by acting through different mechanisms.[5] Because the incidence of dysgeusia in patients treated with drugs from these two therapeutic groups is low,[1 2] it is possible that this adverse effect appears only in patients with some predisposing condition.

In our case report, the temporal sequence of events—and, in particular, positive rechallenge—and the lack of underlying concomitant diseases or other drugs strongly suggest that the association between dysgeusia, burning mouth syndrome, and eprosartan was causal. Because these effects occurred with eprosartan but not with valsartan at equivalent doses, however, our observation does not favour the theory of an effect due to the angiotensin II receptor antagonist class of drug. Factors predisposing to this adverse effect remain to be identified and the mechanism remains to be elucidated.

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