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A 5-year follow-up study of 633 cutaneous SCC excisions: Rates of local recurrence and lymph node metastasis☆

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Summary *Background:* A 5-year follow-up study of 633 cutaneous squamous cell cancer (SCC) excisions was performed by collecting data on rates of local recurrence (LR) and lymph node (LN) metastasis.
Methods: A retrospective analysis of patients was performed across four regional plastic surgery centres (Stoke Mandeville Hospital, Aylesbury; John Radcliffe Hospital, Oxford; Salisbury District Hospital, Salisbury and Queen Alexandra Hospital, Portsmouth) assessing rates of LR and LN metastasis.
Results: We report 5-year outcomes from 598 SCCs (95% follow-up rate). The total recurrence rate (LR and LN metastasis) was 6.7% (n = 40) at 5 years, with 96% of these occurring within 2 years. Median time to LR was 9 months (1–57), with 76.9% (n = 20) undergoing further wide local excision. Median time to LN metastasis was 5.5 months (1–18 months). There were two cases of disease-related death. Only 15% (n = 6) of incomplete excisions recurred. Interestingly, 19.1% (n = 9) of 47 SCCs with perineural invasion on original histopathology recurred versus only 5.6% (n = 31) of the 551 SCCs without perineural invasion (p = 0.005).

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Conclusions: This study is one of the largest studies to date following up 598 SCC excisions at 5 years with total recurrence rates comparable to those in current published literature. We report perineural invasion as a significant predictor of recurrence and that 96% of total recurrence occurred within 2 years. This is in contrast to current UK guidelines (75% at 2 years, 95% at 5 years), thus suggesting that shorter length of hospital follow-up may be reasonable.

Introduction

The rate of local recurrence (LR) and/or lymph node (LN) metastasis in primary cutaneous squamous cell cancer (SCC) is reported to be 4.4%-7.5%.[1,2] Risk factors for predicting which SCCs are likely to recur or metastasise remain unclear. Previous large volume series in the literature have suggested the inclusion of primary tumour thickness, histological grade, anatomical location, size of primary tumour and perineural invasion along with key prognostic indicators.[1-4] However, there remains no consensus agreement between studies for what exactly constitutes a 'high-risk' SCC, largely because of the heterogeneous nature of patient and practitioner groups studied.

Current UK guidelines for the multi-professional management of primary cutaneous SCC state that a patient who has had excision of a high-risk SCC should be kept under close medical observation for recurrent disease for at least 2 and up to 5 years.[4] This recommendation is based upon the previously reported data demonstrating that 75% and 95% of LRs and metastases are detected within 2 years and 5 years respectively.[5]

In 2009, we retrospectively analysed surgically excised cutaneous SCCs across four Plastic & Reconstructive Surgery centres in the Oxford and Wessex regions.[6] This included 633 eligible SCC excisions, which constituted one of the largest case series in the literature. A significant proportion of these were large SCCs (42%, i.e. greater than 2 cm), and we reported an incomplete excision rate of 7.6% (n = 48). The great majority of these were incomplete at the deep margin (94%, n = 45), which suggested that excision guidelines should not be based on radial margins alone. The purpose of this follow-up study was to assess LR and LN metastasis in the same cohort of patients at 5 years in an attempt to examine time to recurrence and to identify risk factors that could predict recurrence.

Methods

A retrospective case series review of the original study cohort of 633 SCCs across four regional Plastic Surgery centres (John Radcliffe Hospital, Oxford; Stoke Mandeville Hospital, Aylesbury; Salisbury District Hospital, Wessex and Queen Alexandra Hospital, Portsmouth) was performed assessing for LR and/or LN metastasis at 5 years. Of the original 633 SCCs, a total of 598 SCCs were accurately identified for case note review (94.5% follow-up rate), leaving 35 SCCs lost to follow-up.

Data collected included time to recurrence, management of recurrence and treatment outcomes. Original histological and demographic data were examined in those patients identified as having had LR and/or LN metastasis (not haematogenous spread).

Statistical analysis was performed using the t-test for parametric data and the Fisher's test for non-parametric data.

Results

Recurrence rate

Of the 598 cutaneous SCCs that were successfully followed-up, there was a total recurrence rate – i.e. all SCCs with LR and/or LN metastasis – of 6.7% (n = 40) at 5 years. The rate of LR alone at 5 years was 4.3% (n = 26). The rate of LN metastasis alone was 1.3% (n = 8). Six patients (1%) presented with concurrent LR and LN metastasis. In the LN alone group (n = 8), 75% (n = 6) of the metastases were detected by clinical examination and 25% (n = 2) by radiological assessment. In the concurrent LR and LN groups, 100% (n = 6) were detected by clinical examination.

Further management

In the LR group, the majority (76.9%, n = 20) were treated with further wide local excision. Three patients were managed with radiotherapy alone. In the LN metastasis alone group (n = 8), five patients underwent a completion lymphadenectomy. The remainder were unfit for further surgical intervention, and two patients were recorded as having died of secondary metastasis.

Time to presentation

The median time to recurrence was found to be 9 months (1–57 months) for LR and 5.5 months (1–18 months) for LN metastasis. For LR alone, 88% recurred within 2 years. For SCCs with LN metastasis alone and SCCs with concurrent LR and LN metastasis, 100% had presented within 2 years of follow-up (Table 1). Therefore, 96% of total recurrence (i.e. LR and/or LN metastasis) had occurred within 2 years of primary tumour excision.

Clinical and histological features

By anatomical site, the majority of recurrences occurred following a primary SCC excision from the head and neck