AUDIT ARTICLE

Audit of 100 consecutive basal cell carcinoma specimens at a secondary care centre in the UK

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Abstract

Objective: To audit basal cell carcinoma resections against standard guidelines.

Methods: The retrospective study was done at the Department of Pathology, Sherwood Forest Hospital, Nottinghamshire, United Kingdom, from July 2020 to December 2020 and comprised basal cell carcinoma cases regardless of age and gender. All parameters laid down by the Royal College of Pathologists were matched with the data. Also, incompletely resected specimens were separated, and reasons for incomplete resection were taken into account, and compared with the British Association of Dermatologists 2018 guidelines.

Results: Of the 100 consecutive cases, 67(67%) were nodular and nodulocystic, 8(8%) were superficial multifocal, 7(7%) each were infiltrative and mixed nodular and infiltrative, 6(6%) were mixed nodular and superficial, and 5(5%) were mixed superficial and infiltrative. All 100(100%) pathology reports contained the mandatory information set by the Royal College of Pathologists. There were 7(7%) incompletely excised cases. The rate of incomplete excision was also within the acceptable range defined by the British Association of Dermatologists 2018 guidelines.

Conclusion: All basal cell carcinoma resections were in line with the standard guidelines.

Key Words: Basal cell carcinoma, Audit, RCPath.

(JPMA 73: 572; 2023) **DOI: 10.47391/JPMA.6502**

Submission completion date: 22-05-2022 **— Acceptance date:** 27-10-2022

Introduction

Clinical audit is a quality improvement process that seeks to improve patient care and outcome through a systematic review that ensures that what is being done is correct, and tells you what you should be doing to improve the healthcare system further[1]. Basal cell carcinoma (BCC) is a common locally invasive keratinocyte cancer. It is the most common form of skin cancer. It normally affects photo-exposed areas, such as the scalp, the cheeks and the nose. It is mainly observed in the Caucasian population, and is seen in 33-39% in men and 23-28% in women[2]. The cause of BCC is multifactorial. Most often there are deoxyribonucleic acid (DNA) mutations in the patched protein gene PTCH 1 and P53 tumour suppressor genes. This leads to production of pyrimidine dimers and causes loss of heterozygosity of tumour suppressor genes as a result of microsatellite instability. Other causes include ultraviolet (UV) radiation, genetic defects and exposure to exogenous carcinogens, such as arsenic and polycyclic aromatic hydrocarbons.[3]

BCC is usually a risk for elderly males of Caucasian race[4]. Some rare syndromes, such as Rombo syndrome, Christol syndrome and Gorlin syndrome, put individuals at a risk of developing nodular BCC[4]. There are several clinical variants of BCC, including nodular, nodulocystic, infiltrative and superficial, and multifocal. Nodular, being the commonest, comprises 60-80% of the cases. BCC rarely metastasises and is usually not staged unless it is very large and poses a risk of spread. Treatment of choice for all types of BCCs is resection with adequate margins, which is considered the first-line therapeutic method. About 3-5mm margins are included along with the tumour[5]. After excision there is usually a 5-year follow-up plan. Tumours that are 1.5cm or bigger in size show recurrences in 12% cases. All pathologists should abide by a standard reporting system so that no parameter is missed in the report.

The current study was planned to audit BCC resections against standard guidelines.

Materials and Methods

The retrospective study was done at the Department of Cellular Pathology, Sherwood Forest Hospital, Nottinghamshire, United Kingdom, from July 2020 to December 2020 and comprised consecutive BCC cases regardless of age and gender.

The reports were checked against the Royal College of Pathologists (RCPath) 2019 guidelines[5].

Parameters checked included BCC subtype, perineural

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and vascular invasion, completeness of excision and distance from the margins. Completeness of excision was compared with the RCPath guidelines. More than 1mm was considered as completely excised and tumour positive at the margin as incompletely excised.

Also, incompletely resected specimens were separated, and reasons for incomplete resection were taken into account, and compared with the British Association of Dermatologists (BAD) 2018 guidelines[6].

Results

Of the 100 consecutive cases, 67(67%) were nodular and nodulocystic, 8(8%) were superficial multifocal, 7(7%) each were infiltrative and mixed nodular and infiltrative, 6(6%) were mixed nodular and superficial, and 5(5%) were mixed superficial and infiltrative (Figure).

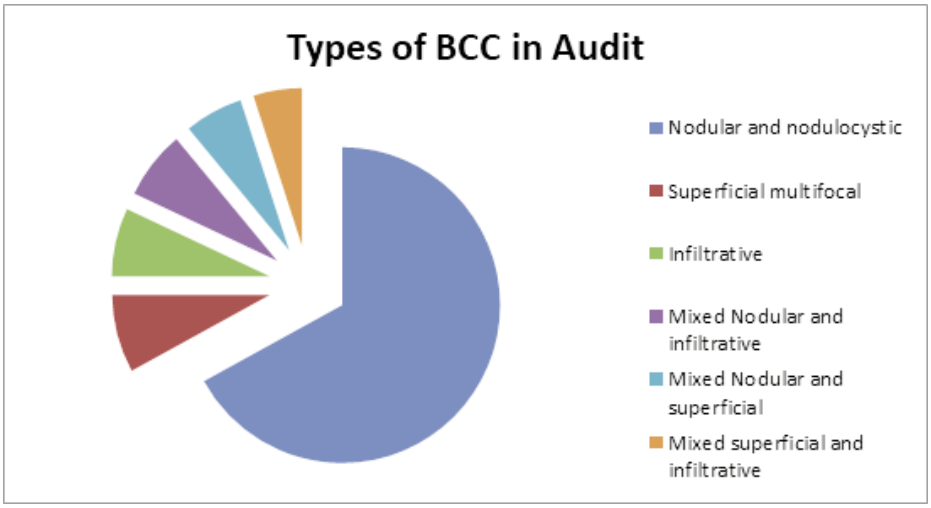

Figure: Types of basal cell carcinoma (BCC) in the audit.

All the 100(100%) pathology reports contained the mandatory information set by RC Path.

There were 7(7%) incompletely excised cases, which were infiltrative and mixed infiltrative and multifocal types. These were on face and head-and-neck area. The rate of incomplete excision was also within the acceptable range defined by BAD.

Discussion

All the 100 cases in the audit contained the mandatory information as set in the RCPath 2019 guidelines for reporting primary cutaneous BCC[5]. The mandatory information includes site, size and type of BCC, completeness of excision, perineural or vascular invasion and distance from the margins. These parameters, when documented in the report, are considered to be in complete concordance with RCPath dataset.

Further, 7(7%) cases of incomplete resections were in line with the BAD 2018 guidelines[6] which define an acceptable range of 4.7-7% cases. Besides, 6(86%) of these 7 cases were on the high-risk areas (face centre, scalp and ears). These were mostly infiltrative, superficial and multifocal type BCCs on morphology. The RCPath guidelines define margin clearance as either involved or not involved which is 1mm. In rare cases, the margin is free but <1mm. This is taken as marginally complete excision. In this eventuality, the RCPath guidelines are likely to support clear but close margins <1mm (marginally complete)[5].

As per the BAD guidelines, re-excision of incompletely excised BCCs reveals presence of residual tumour in 45% cases. These can benefit from re-excision or Moh's micrographic surgery (MMS), respectively. Risk of recurrence is highest when both lateral and deep margins are involved (17% with peripheral and 33% if deep margins are involved)[6]. The reasons for 7 cases of incomplete excision in the current study were looked into, and the possible explanations included unpredictable extent of subclinical tumour spread, the operator's experience, the anatomical site of the lesion, the histological subtype, and multiple BCCs operated in one go[7].

BAD did a national audit in 2014 on skin cancer excision. BCC audit reported 79% of the skin lesions, while squamous cell carcinoma (SCC) was in 18% lesions. These were also confirmed histologically. Regarding completeness of excision, <3% of BCCs were incompletely excised. The explanation of incomplete excision was primary diagnosis unknown at the time of surgery and multiple lesions excised at a time.[8]

A follow-up of previously treated BCC patients was done at Belfast, and an audit was undertaken to determine the rate of reoccurrence and the number of new primary tumours in patients, and to determine the completeness of excision. Two years of follow-up was completed by 53% patients and 1-year follow-up by 78%. The rate of reoccurrence was low, with BCC recurring within 2 years of excision. The risk of developing a new BCC was 11.6%

in the first year and 6.3% in the second year.[9]

A retrospective audit was done at an advanced care centre to investigate the associations between clinical, pathological and therapeutic parameters of facial BCC and the recurrence rates in patients. A total of 70 patients met the inclusion criteria. All BCCs had been referred, and 50.7% had had previous surgery. Recurrence of BCC was seen in 11 patients.[10]

Dermatologists in the United Kingdom collected data on 10 consecutive non-micrographic excisions for BCC and 5 for SCC. Diagnostic accuracy and complete excision rates remained high. Complication rates may be under-reported owing to lack of follow-up. It was concluded that histopathology reporting had a greater chance of being complete if synoptic reports were generated.[10]

Another study highlighted some of the challenges and limitations of MMS. Early referral for multidisciplinary management is recommended when MMS resection margins are inadequate or uncertain, especially in high-risk SCC cases.[11]

Most of the incomplete excisions in the current study were in high-risk areas. As per BAD guidelines[6], these should be treated with MMS, but at the study site, they were treated with simple excisions. It is recommended that such cases should be discussed and referred to undergo MMS wherever and whenever possible. Documentation should be done if MMS has been discussed in the multidisciplinary team meeting. Orientation of sample is also recommended, as 39% of cases in the current audit were un-oriented.

The findings of the audit were presented to in-house pathologists and dermatologists, and a re-audit was planned.

Conclusion

All BCC resections were reported in line with the standard RCPath and BAD guidelines.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

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