

“Put your money where your mouth is”

A statistical review of presurgical clinical diagnoses of eye lid tumours: a retrospective study of 1170 lesions over 20 years

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Introduction:

For the last 20 years a single named consultant has led a ‘one-stop’ tumour service at the Princess Alexandra Eye Pavilion, Edinburgh. Patients are reviewed in clinic and then undergo primarily excisional biopsies for suspected periocular malignancies. In rare cases, benign lesions may be excised if they interfere with vision or irritate the eye. This practice is based on the hypothesis that the presurgical clinical diagnosis, when performed by a consultant oculoplastic surgeon, has a high sensitivity and positive predictive value for identifying malignancy.



(BCC, SCC, Keratoacanthoma)

Aim:

We aimed to test our above hypothesis, thereby confirming that a ‘one-stop’ tumour clinic can minimise unnecessary surgical intervention for benign lesions and importantly streamline the patient journey from referral to treatment, reducing hospital footfall, particularly relevant at present due to the COVID pandemic.

Method:

Written records were kept for each patient who attended and underwent surgery at the ‘one-stop’ tumour clinic. For all patients the presurgical clinical diagnosis, the operative procedure and the histopathology report were recorded. A retrospective analysis was performed over a 20 year period, between the dates 01/01/2000 and 01/01/2020, to identify the correlation between presurgical clinical diagnosis and formal histopathology. We then examined the sensitivity, specificity, positive predictive values (PPV), negative predictive values (NPV) and the accuracy of presurgical clinical diagnosis for malignant periocular tumours.

Results:

In total 1170 biopsies were performed. 99.7% of these biopsies were excisional, performed with a 2mm margin. The presurgical diagnosis matched the histopathology in 86.2%. Of the 1170 lesions, 76.4% were found to malignant and 23.6% were found to be benign. We identified a presurgical clinical diagnostic sensitivity for malignant eyelid tumours of 98.9% and a PPV of 90.8%.

	Total	Sensitivity	Specificity	PPV	NPV	Accuracy
BCC	841	99.1%	73.2%	90.8%	94.9%	92.0%
SCC	22	61.1%	98.6%	57.9%	98.7%	97.4%
Sebaceous Ca	5	100.0%	99.6%	50.0%	100.0%	99.6%
Merkel Cell Ca	2	100.0%	100.0%	100.0%	100.0%	100.0%

We found that the specificity (proportion of people without the disease who will have a negative result) BCCs increased with career length and may be a good indicator of a surgeon’s experience

	2000-2005	2005-2010	2010-2015	2015-2020
BCC specificity	58.5%	60.4%	75%	87.8%



Tricholemmoma, as shown above, can display a pearly rolled edge, telangiectasia, loss of cilia, imitating BCCs. Unsurprisingly tricholemmoma proved to be the most difficult lesion diagnose, with a 9 lesions over 20 years, but 0 accurate pre-operative diagnosis.

Conclusion:

For years now the NHS has reported issues dealing with a growing number of patient referrals in a timely fashion. A significant burden is the diagnosis and treatment of outpatient skin cancer¹. Recently ‘see and treat’ one-stop clinics for skin cancer have been advocated by the NHS. They are designed to speed-up cancer diagnosis and reduce the health implications of the disease². The ability to provide a successful one-stop periocular tumour clinic is dependent on the sensitivity of the physician’s presurgical diagnosis to ensure that malignant lesions are recognized and removed accordingly with an excision biopsy³ and benign lesions can be discharged. Diagnostic sensitivity and accuracy improves with experience⁴, emphasizing the need for the service to be run by surgeon dealing with skin cancer on a regular basis.

The current COVID pandemic has caused us all to look at the service we provide and to adapt our current practice to reduce the risk of disease transmission. Having shown a high sensitivity and PPV, we suggest that a ‘one-stop’ periocular tumour clinic run by an experienced surgeon is safe, efficient and should become the standard practice for all departments moving forward in the COVID era.

References

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