Is An Image-Based Eyelid Lesion Management Service Safe and Effective?

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Introduction

The coronavirus disease 2019 (COVID-19) pandemic has posed challenges for healthcare providers (1), while also bringing about new opportunities for virtual health service models. However, the majority of ophthalmology services are still operating through a traditional 'face-to-face' model of care (2).

In a previous study (3) we described a model of managing benign eyelid lesions in a virtual pathway, comparing retrospectively the outcomes from imaging graded by a masked ophthalmologist versus clinical assessment of patients by an ophthalmologist, the gold standard. In 95 cases, agreement was impressive between the masked ophthalmologist ($K = 0.708$) with the gold standard clinical encounter.

Following this preliminary study NHS GCC implemented a virtual image-based clinical service at our site in Gartnavel General Hospital, for the assessment of benign eyelid lesions. Herein, we report upon the preliminary results of our first service audit for year 1.

Aims

The aim of this evaluation was to review the feasibility and effectiveness of the eyelid photo clinic. Secondary objectives included evaluation of missed malignant lesions.

Methodology

New patients from September 2020 to September 2021 were directed into an medical photographer-led clinic. The clinical photographs were reviewed at a later date by separate, independent oculoplastic consultants who made a clinical diagnosis and management plan based on the referral, history and images (figure 1).



Figure 1. Patient pathway through the GGC NHS virtual eyelid clinic

Results (1)

Demographics

- 809 patients with a slight female predominance were included (Table 1). Referral sources are outlined in figure 2.

Table 1. Patient demographics

Sex	(n)	(%)
Female	436	54
Male	373	46

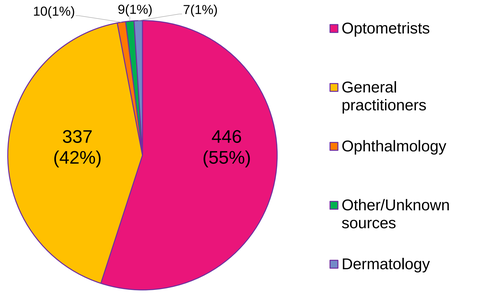


Figure 2. Referral sources to the NHS GCC virtual eyelid clinic

Assessment time

- Mean referral-to-assessment times demonstrated a sustainable, significant reduction over the first 12 months (93 days vs 22 days; p < 0.001)

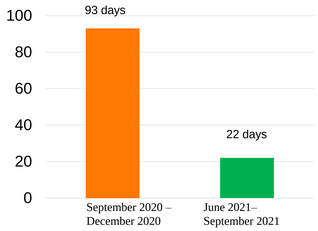


Figure 3. Mean referral-to-assessment times for the virtual eyelid clinic: months 1-4 compared to months 8-12

Results (2)

Patient outcomes

- One-third of patients were discharged following review of clinical photographs
- Almost half of referrals were referred to the minor ops clinic for excision biopsy
- 10% of patients were converted to a face-to-face assessment following virtual assessment, of which 22% required surgery

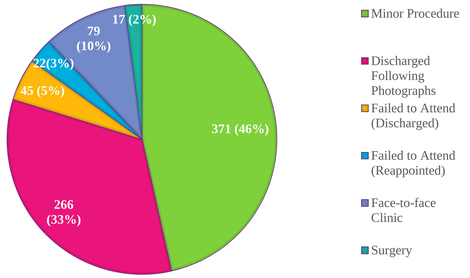


Figure 3. Outcomes for patients attending the NHS GCC virtual eyelid clinic

Safety

- Figure 4 depicts the numbers of suspected and confirmed malignant lesions during the study period.

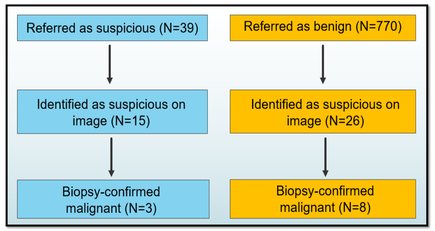


Figure 4. The number of lesions classified as suspicious for malignancy

Results (3)

Did we miss any malignancies?

- 6-month interval data was available for 302 (37%) of referrals
- Re-referral rate was 27 (9%)
  - 17 for recurrent chalazion
  - 10 for 'other benign lesion'
- No cases of re-referral for suspected malignancy were identified.

CONCLUSIONS

- An image-based eyelid lesion management service is an accurate and safe method of virtually assessing lid lesions:
  - Current average waiting times from referral-to-assessment are less than one month
  - Increased service efficiency with 33% discharge rate without further assessment or intervention
- Our outcomes from this service are encouraging thus far and shows scope for expansion into other high-volume areas of ophthalmic service provision.
- A re-referral rate of approximately 10% needs to be factored into designing such pathways in conjunction with evidence of cost-effectiveness.

References

(1) Wang, C, Horby, P.W,. Hayden, F.G., *et al.* A novel coronavirus outbreak of global health concern.The Lancet, Volume 395, Issue 10223, 470 - 473

(2) Tham Y., Husain R., Teo KYC., *et al.* New digital models of care in ophthalmology, during and beyond the COVID-19 pandemic. *British Journal of Ophthalmology* 2022;**106:452**-457.

(3) Hind, J., Edington, M., McFall, K. *et al.* An image-based eyelid lesion management service—evaluation of a pilot. *Eye* (2021).