Managing patients with choroidal melanoma in the COVID-19 era: a personal perspective

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At the time of writing this article, the COVID-19 pandemic is severely disrupting the care of patients with choroidal melanoma in Britain and elsewhere. Vast numbers of individuals are developing severe illness with thousands of fatalities. Many ophthalmic workers have died (such as Li Wenliang) or are absent from duty because of illness or isolation. Others are redeployed at COVID-19 units. Patients are avoiding medical care, because they are afraid of catching coronavirus. Routine community optometry has largely been suspended. Non-urgent hospital clinic appointments are being deferred, as are surgical procedures, laser sessions and intravitreal injections of antiangiogenic agents. This lull will inevitably be followed by a surge of referrals and a backlog of patients needing assessment and treatment. Patients with choroidal melanoma will present with more advanced disease with lost opportunities for conserving vision and the eye in some cases. There will inevitably be deaths from metastatic disease, undoubtedly stirring concerns about whether any fatalities might have been prevented if the COVID-19 epidemic had not delayed treatment. The immediate crisis is expected to be followed by long-term national and personal financial difficulties, which will diminish healthcare resources and which will make it unaffordable for many patients to attend hospital clinics, especially if these are located far from their home. COVID-19 may permanently disrupt healthcare if it causes perennial epidemics, like influenza. These constraints demand drastic improvements in clinical practice to avoid unnecessary costs for patients and to conserve healthcare resources while maintaining quality of care after the COVID-19 epidemic subsides.

This article briefly describes the management of patients with choroidal melanomas in Britain in the years preceding this epidemic and attempts to predict how the care of these patients will evolve in future months and years.

In the UK, choroidal melanomas are currently treated at supraregional ocular oncology centres in Glasgow, Liverpool, London and Sheffield, with proton beam radiotherapy at the Clatterbridge Cancer Centre. These are funded by the National Health Service (NHS), which requires strict targets and standards to be met. The author is investigating a diagnostic clinic at Oxford Eye Hospital as a prototype for reducing the need for patients to travel to distant oncology centres for investigation and follow-up and to provide education on ocular oncology to local ophthalmologists and optometrists.

Almost all choroidal melanomas are detected by optometrists, who mostly refer patients to ophthalmologists directly. This is done using paper forms, briefly describing the lesion with free text, almost never submitting photographs and often requesting a hospital appointment within 2 weeks as mandated by the NHS protocol for suspected cancer. An ongoing audit at Oxford indicates that the large majority of patients referred with pigmented fundus lesions have choroidal naevi with negligible risk of malignancy.

Patients with suspected choroidal melanoma are referred on to an ocular oncology centre for treatment. Plaque radiotherapy is generally the first choice, with proton beam radiotherapy, stereotactic radiotherapy, local resection and/or laser therapy in selected cases. Enucleation is performed as a last resort, almost invariably under general anaesthesia as an inpatient. Long-term ophthalmic surveillance of patients with suspicious naevi and treated choroidal melanomas is usually undertaken at ocular oncology centres, with reviews every 6 months for several years and then once a year indefinitely. In most centres, all patients undergo liver imaging to detect metastases performed preoperatively then every 6 months for 5 years, then annually. Patients with metastatic disease receive curative therapy in the hope of prolonging life, if possible in clinical trials.

Ideally, in future, community optometrists will all have facilities for ocular imaging, with enhanced diagnostic skills thanks to better training, education-as-needed and novel aids using artificial intelligence, currently under development in several centres. Images of suspicious lesions will be sent to a virtual clinic together with relevant medical records for expert review, thereby avoiding hospital consultations, except in the minority of patients requiring special investigations or face-to-face meetings with an ophthalmologist. Ocular oncologists will conduct similar virtual clinics, reviewing submitted images and data so that only patients needing treatment will have to travel to distant oncology centres.

At the oncology centre, patients will ideally receive a one-stop service, undergoing treatment 1 or 2 days after counselling and assessment at the ocular oncology centre, as successfully practised by the author in Liverpool for many years. Communication will be enhanced by giving patients audio or video recordings...
of their actual consultations. Time in hospital can be minimised by judiciously shifting from general to local anaesthesia, from in-patient to day-case surgery, from brachytherapy to proton beam or stereotactic teletherapy and, in selected cases, avoiding fiducial markers for proton beam radiotherapy (figure 1). Local tumour recurrence, toxic tumour syndrome and other complications and side effects will be avoided by better treatment selection, possibly deploying evidence-based prognostic tools using artificial intelligence.

Patients’ needs for psychological support will be met virtually if appropriate. Long-term ocular surveillance will be conducted at local hospitals with ocular oncologists remotely reviewing images, advising on management and holding telephone or video consultations with patients as needed. Such monitoring could also be provided by community optometrists having relevant training and certification, emulating successful nurse-led clinics in Liverpool.

Preoperative and long-term postoperative systemic screening for metastases will probably need to be restricted to high-risk patients who would also be eligible for systemic adjuvant or curative therapy for metastatic disease. Metastatic risk will increasingly be estimated using novel online tools, such as LUMPO. Prognostication will be enhanced by genetic tumour analysis using methods such as next-generation sequencing. Liquid biopsies may reduce the need for trans-retinal or trans-scleral surgical tumour sampling, as with other cancers.

Curative treatment of metastases may need to be restricted to patients in clinical trials of novel therapies. A shift from paper case notes to electronic medical records should make it possible to audit all these measures rigorously and continuously to ensure patient safety and to optimise efficiency and outcomes also providing more complete datasets for research.

It will be interesting to see how many of these predictions are realised. The COVID-19 catastrophe may prove a powerful impetus to innovation, greatly improving the management of patients with choroidal melanoma in the long run.

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