

Sir,
Treatment of invasive ocular surface squamous neoplasia with proton beam therapy

Ocular surface squamous neoplasia (OSSN) has the potential for causing significant ocular and systemic morbidity and mortality. We present two cases of invasive OSSN successfully treated with proton beam therapy (PBT). Both were non-resectable due to deeper scleral invasion.

Case reports

Case 1

A 73-year-old patient was referred to the Ocular Oncology Service with a nodular lesion in the lower fornix (Figure 1a). Incisional biopsy revealed widespread carcinoma *in situ* with invasive focus (Figures 1c and d). Four cycles of topical MytomycinC (MMC, 0.02%) were administered; however, tumour growth continued.

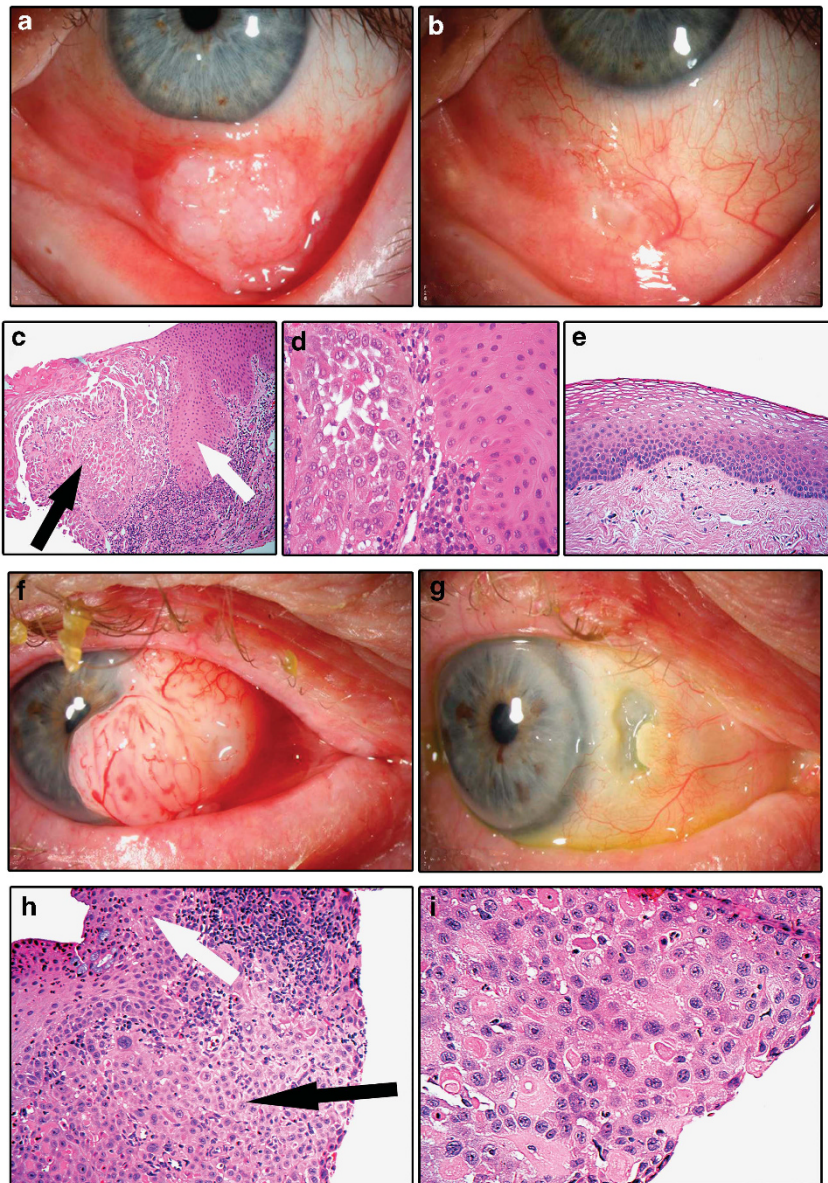


Figure 1 (a) Case 1 on presentation. (b) Case 1 at 9 months post treatment. (c) Haematoxylin and eosin (H&E)-stained section showing the *in situ* squamous carcinoma on the left (black arrow) and hyperplastic, non-neoplastic epithelium to the right (white arrow). Note the sharp demarcation between the neoplastic *in situ* disease and the non-neoplastic hyperplastic epithelium. (d) Higher power of plate C (H&E), showing the acantholytic, eosinophilic, atypical squamous cells of the *in situ* squamous carcinoma on the left. (e) Post treatment biopsy showing (H&E) conjunctiva with squamous metaplasia of the epithelium, without dysplasia. (f) Case 2 on presentation. (g) Case 2 at 8 months post treatment. (h) H&E-stained section showing the invasive squamous carcinoma (black arrow), undermining the overlying epithelium (white arrow). (i) Higher power of plate H (H&E), showing the invasive squamous carcinoma cells.

Hence treatment with PBT was recommended. Treatment planning was guided by measurement of tumour dimensions using ultrasonography.

Four fractions of 5310 cGy were given over 4 days. The lesion resolved completely over several months (Figure 1b). The patient remains recurrence free for 2 years as confirmed by serial map biopsies (Figure 1e).

Case 2

An 83-year-old patient was referred with a large limbal lesion encroaching on the cornea (Figure 1f).

Incisional biopsy revealed invasive OSSN (Figures 1h and i).

Treatment with PBT was administered primarily as described above.

Complete resolution at 3 months was found. The patient remains recurrence free at year follow-up.

Comment

The standard treatment for OSSN is surgical excision with safety margin and cryotherapy to the edges.¹ MMC, 5-fluorouracil, interferon,² and radiotherapy (including external beam radiotherapy and brachytherapy)³ have been used as adjuvant treatment with variable success rates.

PBT, a type of external beam radiotherapy, delivers a high dose of ionizing radiation to the tumour with minimal damage to surrounding tissues. It has been used successfully to treat head and neck SCCs,⁴ carcinomas elsewhere,⁵ as well as other ocular tumours (mainly choroidal melanoma).⁶ Only one case is reported in the literature for which PBT was successfully used as primary treatment for invasive OSSN⁷ and we report the first two successful cases in United Kingdom. A case series in which PBT was used for recurrent OSSN or where the surgical margins were involved after excision was published with encouraging results.⁸

In both presented cases, PBT has regressed the tumour without recurrence. Both patients received a 6-week course of topical steroids post treatment. No immediate side effects were noted, however one developed a cataract 2 years later, and the second developed a patch of scleral thinning that was stable on follow-up. We suspect it was an area of deeper tumour invasion that melted away with treatment (Figure 1g).

We believe that PBT should be considered for OSSN when surgical excision is not possible.

Conflict of interest

The authors declare no conflict of interest.

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Sir, Appointment duration in the eye clinic: the same across different subspecialties?

Current trends in the NHS include increased productivity and greater clinic subspecialisation while also being committed to ensuring high-quality patient-centred care.¹ Patients are more likely to be happy with their care if they are satisfied with waiting times, being more likely to comply with advice, improving health outcomes.² With current drives to increase efficiency and subspecialisation of ophthalmology out-patient clinics, there are pressures to define a standard number of patients seen per session. Should it be assumed that the same number of patients can be seen across different subspecialties?

We prospectively assessed appointment duration for 364 consecutive patients (44.8% new referrals) seen by a single doctor (HB) over a 2-month period in a district general hospital setting. We compared the