Author's response to reviews

Title: Radiation Retinopathy: Case Report and Review

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Author’s response to reviews: see over
Dear Sir,

After reading the reviewer’s comments I have amended the manuscript as outlined below.

**Reviewer 1 comments**

1. I have put in brackets after Rads the equivalent dose in the up-to-date radiation term (Gray)

2. I have altered the text to include the pertinent positives:

   On examination the visual acuity was noted to be 6/36 left eye and 6/9 right eye. He had bilateral medial lower lid ectropion accounting for the epiphora. Anterior segment examination and intraocular pressures were normal. Posterior segment examination revealed marked retinal ischemia present in the posterior pole and macular region of both eyes.

3. I have analyzed our case and included stated differences between diabetic retinopathy and radiation retinopathy to make it more clear how the diagnosis was reached:

   The distribution of the retinal changes with severe ischaemic changes in the posterior retina more than in the anterior retina, the relative lack of microaneurysms compared to the high numbers of cotton wool spots and blot haemorrhages and the rapid nature in which the retinopathy developed made the diagnosis of radiation retinopathy likely. Additionally the temporal onset of the retinopathy in relation to the radiotherapy (1 year post treatment) and the dose delivered further supported this diagnosis.

4. I have used the staging system by Finger et al to stage our patient and included this in the text.

   Our patient was initially asymptomatic and found to have cotton wool spots, retinal haemorrhages, exudates, choriodopathy and retinal ischaemia involving posterior pole and peripheral retina. These findings relate to stage 2 of Finger’s radiation retinopathy classification, stage 2 carries a guarded prognosis for vision having a moderate risk of visual loss. The patient rapidly progressed over 4 months to stage 4, where visual loss did occur and retinal neovascularisation along with vitreous haemorrhage was present

**Reviewer 2 comments**

1. I have included the most up to date status of the patient, including the current level of vision and follow-up.

   The total area of treatment in RE was 2595mm2 and in the LE 1825 mm2. At review in September 2006 the visual acuities were counting fingers in the RE and 6/60 aided in the LE. The retinopathy is stable.
Reviewer 3 comments

1. I have included the diabetic screening, smoking status and BP results of this patient.

A 55 year old male was referred from the oncology department with epiphora. His medical history included type 2, Insulin treated, Diabetes Mellitus of 10-years duration and controlled hypertension. He smoked between 20-39 cigarettes per day

2. I have provided more detail of the effects on diabetes and the patients state of diabetic retinopathy to help elucidate the real risk of radiation retinopathy. I have also included the rates of incidence of radiation retinopathy to patients generally.

3. I have included evidence for PRP causing regression in radiation retinopathy and also included results stating that cases treated with early PRP are less likely to develop maculopathy. I have emphasised the fact that monitoring of visual acuity especially in high risk cases may prevent further visual deterioration if treated early.

Unfortunately, I was unable to gain access to information relating the to the dose of radiation the critical eye structures received. This was not recorded in the notes.

I hope this information is helpful in further consideration of this article.

Kind Regards

Abha Gupta