ganglion, which is located in the intraconal space between the optic nerve and the LR muscle. We speculate that the toxin would have reached the ciliary ganglion by diffusion from the LR muscle, given the proximity of the ciliary ganglion to the LR. Although there was a good audible response with the EMG machine confirming the intramuscular location of the needle, it is possible that the needle could have advanced beyond the muscle into the intraconal space. Alternatively, its action could be at the parasympathetic neuromuscular junctions in the sphincter pupillae of the iris, although this is unlikely as it would require an intraocular injection or an idiosyncratic reaction to the BT. Tonic pupils have also been reported in patients with systemic botulism.[13] There have been no documented cases in the literature of pupillary abnormalities following botulinum toxin injection, although it has been postulated that this may precipitate acute closed angle glaucoma following treatment of blepharospasm.[10] To the best of our knowledge, this is the first documented clinical case of pupillary abnormality following BT injection. Although pupillary changes following BT injection are a rare phenomenon, the treating physician should be aware of this side effect. The pupillary changes are reversible as shown in this case.

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Sir,

Bilateral ptosis and gaze palsies following radioactive seed treatment of tectal plate tumours

We report two cases of bilateral ptosis and associated gaze palsies that developed after temporary insertion of ^{125}I radioactive seeds in the treatment of tectal plate lesions. This is the first time that this has been described as a complication of this procedure.

Case 1

A 26-year-old girl was referred with bilateral, symmetrical ptosis and complete downgaze palsy. At the age of 16, she was diagnosed with a low-grade ependymoma in the pineal region and subsequently underwent Gamma knife stereo-radiosurgery, transoccipital transtentorial excision, endoscopic third ventriculostomy, and ventriculo-peritoneal shunt insertion. Histology of the lesion demonstrated a choroid plexus papilloma. In 2003, there was further recurrence

of the tumour and she was treated with interstitial radiosurgery by implantation of an 11.1 mCi ^{125}I seed giving an isodose of 60 Gy over 21 days. Six months following the removal of the seed, she began to develop her ocular symptoms and a repeat MRI scan showed an area of radionecrosis around the lesion (Figure 1).

On examination, best-corrected vision was 6/5 bilaterally with no pupillary abnormalities or papilloedema. She had a large right-sided exotropia with jerk horizontal nystagmus in all gaze positions. She had bilateral ptosis; her palpebral apertures measuring 6 mm right and 7 mm left (Figure 2). There was restriction of both down- and upgaze with absent convergence, but dextro and laevo versions were normal. She was fitted with 15 D base-down (15Δ BD) fresnel prisms to alleviate the symptoms.

Case 2

A 27-year-old man was referred with bilateral ptosis, oscillopsia, and vertical diplopia. Initially, he was diagnosed with a type I Arnold Chiari malformation with mild hydrocephalus and underwent an endoscopic third ventriculostomy. Repeat scanning revealed an enlarging lesion in the tectal plate region, which, on biopsy, was diagnosed as an astrocytoma. An 18.85 mCi ^{125}I seed was inserted, giving a 60 Gy isodose over 25 days. Repeat scanning in 2004 showed tumour recurrence and a further 13.7 mCi ^{125}I seed was inserted and removed after 25 days. After the first seed was removed, he began to suffer ophthalmic symptoms.

On examination, his vision was 6/9 right, 6/6 left with no pupillary abnormalities or papilloedema. There was a right exotropia with concurrent hypertropia. Cover testing revealed a right IV palsy. He had hypometric horizontal saccades with normal vertical saccades and convergence. Downbeating nystagmus was present in all positions of gaze, owing to the Arnold Chiari malformation, but much more pronounced in downgaze. His palpebral apertures measured 5 mm right and 6 mm left in primary gaze. He was fitted with 3Δ fresnel prism base-up to his left lens to counter the vertical diplopia.

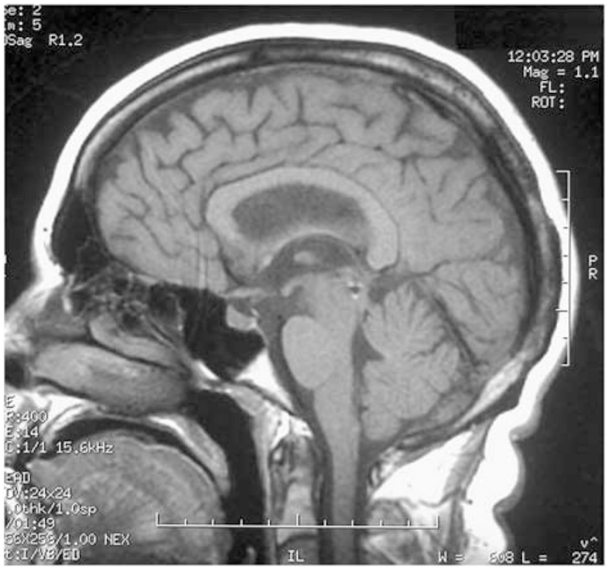

Figure 1 MRI showing radionecrosis.

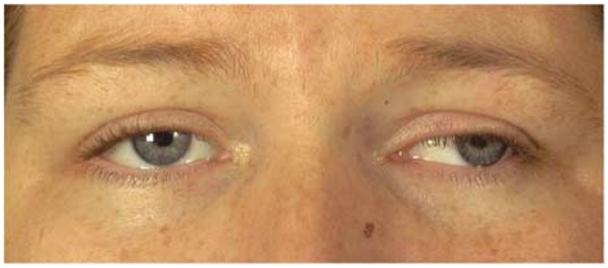

Figure 2 Bilateral ptosis and right exotropia.

Comment

The tectal plate is a layer of mingled grey and white substance in the tectum of the mesencephalon, from which arise the superior and inferior colliculi. The nuclear complex of the III cranial nerve lies in the ventral aqueductal grey matter of the rostral midbrain, at the level of the superior colliculus. The IV nucleus is continuous caudally with the III complex. As demonstrated by Warwick,[1] the III nuclear complex is made up of subnuclei subserving individual extraocular muscles. The cells to the ipsilateral inferior rectus are located most dorsally and laterally, the cells to the ipsilateral medial rectus are most ventrally, and the cells serving the ipsilateral inferior oblique are sandwiched between. Cells projecting to the *contralateral* superior rectus are found medially on either side of the midline and the cells subserving both levator palpebrae superioris (LPS) muscles lie in a single, midline structure located dorsally in the caudal portion of the nucleus.

^{125}I seeds can deliver a very high dose of radiation (100–500 Gy) to a well-circumscribed area, which enable them to destroy slow-growing tumours after implantation. The seeds are frequently used in the treatment of both neurological and prostate tumours.[2,3] Neurological deficits that have been reported following radiation have been attributed to various causes including vasogenic oedema and localised radiation necrosis.[4–6]

Lesions affecting the oculomotor nucleus are rare tending to produce bilateral effects owing to the subnuclei arrangement. Our cases developed bilateral, symmetrical ptosis indicating damage to the single, midline subnucleus serving LPS. Our first case showed restriction of both up- and downgaze, indicating damage to both the superior and inferior rectus nuclei. Unfortunately, Dolls eye movements were not performed but would be expected to overcome this restriction in the short term. The absence of convergence can be attributed to damage to the superior colliculus and its connections to the lateral suprasylvian area of the parieto-occipital cortex.[7] Our second case is owing to damage of both the LPS and IV nuclei, indicating an area of damage on the posterior aspect of the nuclei arrangement.

These two cases illustrate the clinical correlation between anatomy and function in a very complicated area of human physiology. Given the unfortunate symptoms experienced by our patients, it is relatively straightforward to explain why such a treatment received for their brain tumours has led to gross problems with their ocular motility. The fact that two patients have complained of such problems within a short period of time must indicate that, although this has not been reported previously, these side effects do occur. Patients must be made aware of the possibility of their occurrence in order to give fully informed consent.

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Sir,

Giant fornix syndrome: a recently described cause of chronic purulent conjunctivitis and severe ocular surface inflammation, with a new diagnostic sign on CT

Case report

A 75-year-old lady initially presented with a red, sticky right eye for several weeks with copious yellow discharge. She had no prior ophthalmic history. Her medical history included rheumatic fever resulting in mixed mitral valve disease and pulmonary hypertension.

At presentation, she was noted to have a small peripheral corneal epithelial defect with mild infiltrate and was diagnosed as having blepharoconjunctivitis and marginal keratitis and treated with guttae chloramphenicol and topical steroid (maxidex). Lid hygiene was also advised. A conjunctival bacterial swab grew *Staphylococcus aureus*, sensitive to, among others, chloramphenicol.

One week later, the epithelial defect had improved but there had been little improvement in the discharge and she was kept under outpatient review as she suffered recurrent episodes of purulent discharge. Repeated cultures grew *S. aureus* with identical sensitivities. The absence of a mucocele was noted and syringing and