ral association of proptosis/diplopia with the episodes of right-sided cardiac failure and the clearcut resolution of the diplopia simultaneous with resolution of the right heart failure strongly supports a causal link. Contrary to expectation, however, at out-patient follow-up, transient obstruction of venous blood flow by neck root compression did not reproduce proptosis or diplopia in this patient. It may be that sustained, prolonged, elevation of venous pressure (as occurred with the two episodes of right heart failure) is required to alter the compliance characteristics of the tumour sufficient for congestive expansion. In addition, the patient was unable to tolerate neck root compression in the supine posture for more than 2 minutes because of marked orthopnoea. Although fluctuating proptosis is occasionally a feature of cavernous haemangioma,[3] accentuation of proptosis by venous flow obstruction in the root of the neck is not documented in the literature as a reliable physical sign. Similarly, change in proptosis with change in posture has not been described in a large series of cases.[1]

The cause of the gran mal seizure in association with the initial presentation of this patient's diplopia was not thought to be related to the orbital lesion. The CT scan did not show any evidence of cerebral infarction or other abnormality that would readily explain the ictal event. The seizure did occur in association with marked systemic hypoxia (due to pulmonary embolism), which lowers seizure threshold. The patient has been hospitalised subsequently on two occasions with seizures. He has recovered completely on both occasions, without signs of residual neurological deficit.

We are not aware of any reported case of right heart failure presenting with recurrent diplopia due to recurring acute congestive expansion of a cavernous haemangioma. Recurrent congestive expansion of a cavernous haemangioma in association with right-sided cardiac failure should be considered as a cause of recurrent proptosis.

Summary points

- cavernous haemangioma is the most common benign orbital tumour in adults
- the natural history of these tumours is one of slow expansion and gradual onset of symptoms
- rarely, subclinical cavernous haemangiomas may undergo acute congestive expansion with associated acute proptosis and visual distortion, as with acute right heart failure

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Primary lymphoma of the bladder treated successfully with mitozantrone gel

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Summary
We describe a young man who presented with a short history of painless haematuria. Subsequent investigations and biopsy of lesions found in his bladder at cystoscopy confirmed the diagnosis of primary lymphoma of the bladder. Computed tomography studies confirmed the disease was localised to his bladder. Unfortunately, the tumour was not eradicated by radiotherapy. However, it was successfully treated with intravesical mitozantrone given in a novel gel formation. Three years after diagnosis the patient remains well with no evidence of recurrence.

Keywords: lymphoma; bladder; mitozantrone

A 22-year-old man presented with a 4-week history of painless haematuria. He had no other symptoms and was otherwise healthy. He had no significant medical or surgical history and clinical examination was entirely normal. Routine blood tests, urine microscopy and culture, and urine cytology failed to detect any abnormality. Excretory urography was also normal.

He underwent rigid cystoscopy. Two discrete nodules (1 cm and 0.5 cm in diameter) were found in the trigone and base of his bladder and these were resected. Histological examination confirmed them to be small cell, or primary lymphoma of the bladder of the mucosa-associated lymphoid tissue (MALT) type. Computed tomography (CT) of the pelvis, abdomen and thorax confirmed the disease to be restricted to his bladder. Bone marrow aspirate was also normal. The patient underwent radiotherapy (20 courses, total tumour dose 4000 cGy). At cystoscopy 3

months later there was no obvious evidence of tumour, but random biopsies from the affected area confirmed histologically the presence of lymphoma. He then underwent six cycles of intravesical mitozantrone, prepared by mixing 10 mg of mitozantrone in 15 ml of KY-gel™ (Johnson & Johnson Ltd, Maidenhead, UK) and administering the mixture into the urethra and bladder via a syringe fitted with a urethral tip. The patient tolerated the treatment well and did not suffer any side-effects.

Subsequent regular cystoscopic examination and biopsy of the bladder base and trigone have failed to detect any signs of recurrent disease. Serial magnetic resonance imaging of the pelvis, abdomen and thorax performed during the follow-up period have also failed to show any signs of lymphoma.

Summary/learning points

- painless haematuria should be investigated thoroughly
- primary lymphoma of the bladder is an extremely rare condition but is usually radiosensitive
- intravesical mitozantrone is useful in the treatment of bladder tumours and can be administered in a gel

Discussion

Malignant primary lymphoma of the bladder is a rare condition, accounting for only 0.2% of all extranodal lymphomas and 0.1% of primary bladder tumours.[1] Only a relatively small number of cases have been reported in the world literature.

The disease usually presents in middle-age, most commonly with haematuria.[2 3] Recurrent cystitis is a common symptom, but was not present in this patient. Treatment with early radiotherapy seems to give the best outcome; surgical intervention, including radical cystectomy, has no effect on prognosis.[4] In our patient the tumour persisted or recurred after radiotherapy and an alternative treatment was therefore necessary.

Mitozantrone is used systemically in the treatment of lymphoma and other tumours, and is effective in the treatment of recurrent superficial bladder tumours when administered locally.[5 6] It is a synthetic anthraquinone with structural similarities to doxorubicin but exhibits a lower side-effect profile. In the treatment of recurrent superficial bladder tumours, a dose of 20 mg is effective and at this dose there is little systemic absorption from the bladder.[5 6] We chose the smaller dose of 10 mg because the drug was administered intravesically in a gel formulation, and was thus less likely to be diluted and more likely to remain in contact with the affected area of the bladder for longer. The risk of side-effects with the lower dose was also reduced. The gel formulation is a new concept in the treatment of bladder tumours situated in the region of the bladder base. The drug was easy to administer, did not require catheterisation, and hopefully resulted in longer contact of the drug with the trigone and bladder base.

There were no adverse effects from this treatment. This is the first reported case of mitozantrone used to treat primary lymphoma of the bladder.

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