Conjugate deviation of downgaze in the toxic shock syndrome

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Summary: A patient with the toxic shock syndrome presented with conjugate deviation of downgaze and impaired ocular movement. Focal neurological signs are rare in this syndrome and disordered eye movement has not been previously reported.

Introduction

The toxic shock syndrome (TSS) is an acute illness characterized by fever, headache, confusion, generalized erythroderma, conjunctival hyperaemia, diarrhoea, hypotension and oliguria (Anon., 1980). TSS has been associated with tampon usage in menstruating women and in these cases the vagina is usually colonised by toxin producing strains of *Staphylococcus aureus*. Although confusion may occur, focal neurological signs are not recognized to be a feature of this syndrome (Shands *et al.*, 1980). We report a patient with the TSS who presented with conjugate deviation of downgaze.

Case report

A 16 year old Caucasian schoolgirl was admitted with a 2 d history of malaise, myalgia and a sore throat. On the day of admission she vomited several times and her level of consciousness deteriorated. Her only medication had been single doses of oral ampicillin and prochlorperazine which she had vomited intact.

On examination she was semi-conscious but would localize to pain. She was pyrexial (39°C), peripherally cyanosed and had striking conjunctival injection (Figure 1). Her blood pressure was 100/50 mmHg. She was found to be menstruating and an offensive tampon (Super Tampax) was removed. The only focal neurological sign was conjugate spasm of downgaze which was unaffected by the doll's eye manoeuvre or by intravenous procyclidine (Figure 1). Investigations showed neutrophil leucocytosis and slightly raised bilirubin and aspartate transaminase levels, with normal arterial blood gases. An electroencephalogram

showed a diffuse increase in theta and delta activity but both the cerebrospinal fluid and a computed tomographic scan were normal. Blood cultures were negative but a high vaginal swab grew *Staphylococcus aureus* of phage type 29/52/79/42E/81/+ which was subsequently shown to produce enterotoxin F.

Treatment was commenced with flucloxacillin and during the following 48 h her conditions improved although the spasm of downgaze persisted. After 3 d the doll's eye manoeuvre could move the eyes to the primary position but not above the horizontal meridian. Four days later her eye movements appeared full but optico-kinetic nystagmus could not be elicited in the vertical plane until 10 d after her admission. During her clinical recovery she developed a desquamating rash on her hands.

Discussion

Conjugate deviation of downgaze is an unusual disorder of ocular movement and implies a selective impairment of upward gaze tonus. It always denotes a disturbance of the brainstem and is usually the result of compression of the mid-brain tectum (Plum & Posner, 1980). However, metabolic disturbances such as hepatic coma or hypoglycaemia and intoxication with sedative drugs may produce a similar clinical picture (Simon, 1978).

The clinical presentation and laboratory investigations leave no doubt that this patient suffered from the toxic shock syndrome. The persistence of the ocular signs and their insensitivity to procyclidine suggests that the transient ingestion of prochlorperazine was not related to their genesis. It was also unlikely to have been due to an anoxic encephalopathy since the arterial PO_2 was persistently normal. Although confusion and seizures may occur in the TSS, focal neurological signs are rare (Shands *et al.*, 1980).

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Figure 1 Photograph illustrating conjunctival hyperaemia and conjugate deviation of downgaze.

Disordered vertical gaze has not been reported, and it seems likely that in our patient this was part of the illness itself, although the mechanism by which it occurred is not clear.

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