A sporadic case of dentatorubral pallidolysian atrophy (DRPLA) with CAG repeat expansion but no clinical abnormalities in the father

Dentatorubral pallidolysian atrophy (DRPLA) is an autosomal dominant neurodegenerative disorder characterised by various combinations of myoclonus, epilepsy, ataxia, choreoathetosis, and dementia. We report a family with a history of DRPLA, which was identified by the presence of a CAG repeat expansion in the gene encoding huntingtin. The disease predominantly occurs as an inherited condition and is more common in Japan than in other countries. A unique feature of this family is the absence of clinical features in the father, even though he had a CAG repeat expansion in the DRPLA gene, which is thought to represent the second mechanism to explain how the CAG repeat length may expand more efficiently in women. This case highlights the importance of genetic testing and counseling for carriers of the DRPLA gene.
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Preoperative treatment was followed by a
phase of rapid neurological deterioration and
fatal outcome. A postmortem examination
confirmed the clinical diagnosis of
Friedreich's ataxia.

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Malignant distress on eye contact after severe head injury

We report a patient with severe head injury who
developed a very specific pattern of
symptoms of distress on eye contact. It is
likely that this neurobehavioural syndrome
contributed to the decline of his mental and
physical state which started three years after
injury.

The patient was described as having been
a quiet, private person who enjoyed solitary
pursuits. He disliked being in the company
of people who were disabled. At the age of
32 he had a severe closed head injury. Brain
CT showed left temporal lobe contusions and
an extradural haematoma at the base of
skull, which was evacuated. He was in a
coma for about four months. Two years
after injury he was underweight and had
severe contractures with no functionally use-
ful movement.

At his best, about three years after injury,
he was able to walk with the aid of a frame
and assistance and was beginning to be able
to feed himself. His most reliable cognitive
response was following basic commands. At
times he was able to indicate "yes" and "no",
and name objects and colours, but this was
mostly unreliable. He had severe dysarthria.

His best verbal output consisted of singing
a few words of a well known song. He had
never, since the accident, shown any definite
recognition of anybody, including his wife.

About two weeks after his injury he began
to show increasing signs of tension and
irritability during therapy. It seemed as
though he wanted to be left alone. It was
noted that "eye contact was reported to
provoke anger—noise."

Since that time he has continued to show
a behaviourally syndrome consisting of symp-
toms of distress and agitation in relation to
eye contact. Other social cues—for example,
entering his room but avoiding eye con-
tact—also cause distress but to a much
lesser degree.

Symptoms of distress include wailing, gri-
macing, spinalotrich posturing, and re-
petitioning of limbs, with facial
engorgement and profuse sweating. These
symptoms last for as long as the observer's
gaze is maintained. The symptoms subside
within a few seconds of disengagement from
eye contact. All three authors, as well as sev-
eral nurses involved in his care, have inde-
pendently noted the ability of eye contact
to provoke distress. Nursing staff have found
that averting their eyes temporarily relieved
his distress. His eye movements lack normal flu-
cy. He tends to fixate on objects, particu-
larly faces and eyes, and has difficulty
directing his gaze away. As a consequence
eye contact tends to be maintained, with a
fixed unblinking stare, until the observer
looks away.

Specific behaviour therapy aimed at
increasing exposure to eye contact was
unsuccessful. The symptom was associated
with a steady decline in his mental and phys-
ical state such that by 1994, seven years
after injury, he had to be nursed continu-
ously on his bed. His weight dropped from
20 kg to 51 kg. Brain CT in January 1991 showed
gross hydrocephalus with periventricular
lucency but insertion of a ventriculoperi-
toneal CSF shunt at that time had no effect
on his mental state. Over the past year com-
bined treatment with trifluoperazine and
moclobemide have been associated with a
slight improvement in his mental and physi-
cal state.

To test the hypothesis that the distress
was indeed related specifically to eye con-
tact, rather than some other aspect of a per-
son's face or simply the presence of human
contact, we carried out the following brief
experiment. In a state of rest, lying awake
in his recliner with his eyes open, the patient
was approached by an unfamiliar member
of staff who stood almost facing him about
three feet away. In one condition the staff
member looked directly at the patient, and
thereby invariably made eye contact; in the
other condition the staff member faced
the patient at the same angle, but with eyes
averted by about 30° from the patient. An
observer, hidden from view, noted the time
taken to become agitated (defined as bang-
ing his arm on the chair). The rate of eye
blinking during the two conditions was also
noted. The testing condition was terminated
by the person walking away as soon as the
patient became agitated, or after 10 minutes
if there was no sign of agitation by this time.
A total of 12 sessions were studied, six of
each condition, carried out on three separate
days. The order of testing was counter bal-
ced.

The mean time to agitation was very sig-
nificantly shorter in the eye contact condi-
tion than in the eyes averted condition
(mean 93 (SD 114) s vs 510 (SD 221) s; P =
0.006; figure). The rate of eye blink was
significantly slower in the eye contact condi-
tion (0.67 (SD 0.78) vs 1.87 (SD 0.42) blinks/min; P =
0.034).

Our patient showed two problems. One
was distress on eye contact. The other was
an apparent inability to disengage his eyes
from eye contact.

It is known that eye contact may be asso-
ciated with arousal and this link seems
to develop early in life. In animals directed
gaze at another may be used as a form of
threat (Rudyard Kipling's Mowgli "discover-
ed that if he stared hard at any wolf, the
wolf would look away"). The tendency to
gaze aversion in monkeys develops during
the first year of life. Cells in the superior
temporal sulcus of the monkey are specifi-
cally tuned to detect eye contact or averted
gaze. In humans various studies have shown
that eye contact increases arousal. Hutt and

The time taken from the experimenter approaching the patient to the first agitated movement being observed is plotted for each trial. For each of the six trials, carried out over three days, there were two
conditions, one with both eye contact was made, the other with eyes averted. The trials were
terminated after 10 minutes if there was no sign of agitation by this time.

Eye contact No eye contact

Time to agitated movement (s)

Eyelinkings 1-6

600

300

150

0

Trials 1-6

143

114

Letters to the Editor

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