ATAXIA-TELANGIECTASIA IN CHILDREN

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Sajid Maqbool, Zulfiqar Ayub, Waqar Hussain (Department of Paediatrics, Shaikh Zayed Hospital, Lahore.)

This rare familial autosomal recessive hereditary disorder is characterized by progressive cerebellar ataxia, oculocutaneous telangiectasia, recurrent sinopulmonary infections, immunologic defects, endocrine and integumental abnormalities and predisposition to lymphoreticular malignancy. We report two such cases with unsteady gait, failure to thrive and recurrent infections.

CASE 1

Eleven year old boy presented with the complaints of inability to walk properly and repeated chest and gastrointestinal infections and epistaxis. The child was born by an assisted breech delivery and his weight, though not recorded, was below average. He sat supported at one year of age, started walking independently at 2 years of age and is not toilet trained up till now. He was completely immunized but was not able to carry out most of his functions. With continuing deterioration and after numerous episodes of respiratory and gastrointestinal infections, he was presented to us. Family history revealed parental consanguinity and no history of similar problem was elicited in his parents and relatives. The child has four younger siblings. Of these, three brothers are healthy but a sister has similar complaints. Central nervous system examination revealed good memory, well oriented but below average in intelligence. Cerebellar dysfunction was noted by presence of motor ataxia, dysarthria, dysdiadochokinesia, dyssynergia and pendular knee jerk. Nystagmus was not elicitable. Deep tendor reflexes were diminished and babinski was downgoin. Sensory system was intact. Eye movements were initiated with difficulty on command and they halted before the movement was completed. Ophthalmoscopic examination revealed bilateral conjunctival telangiectasia (Figure)

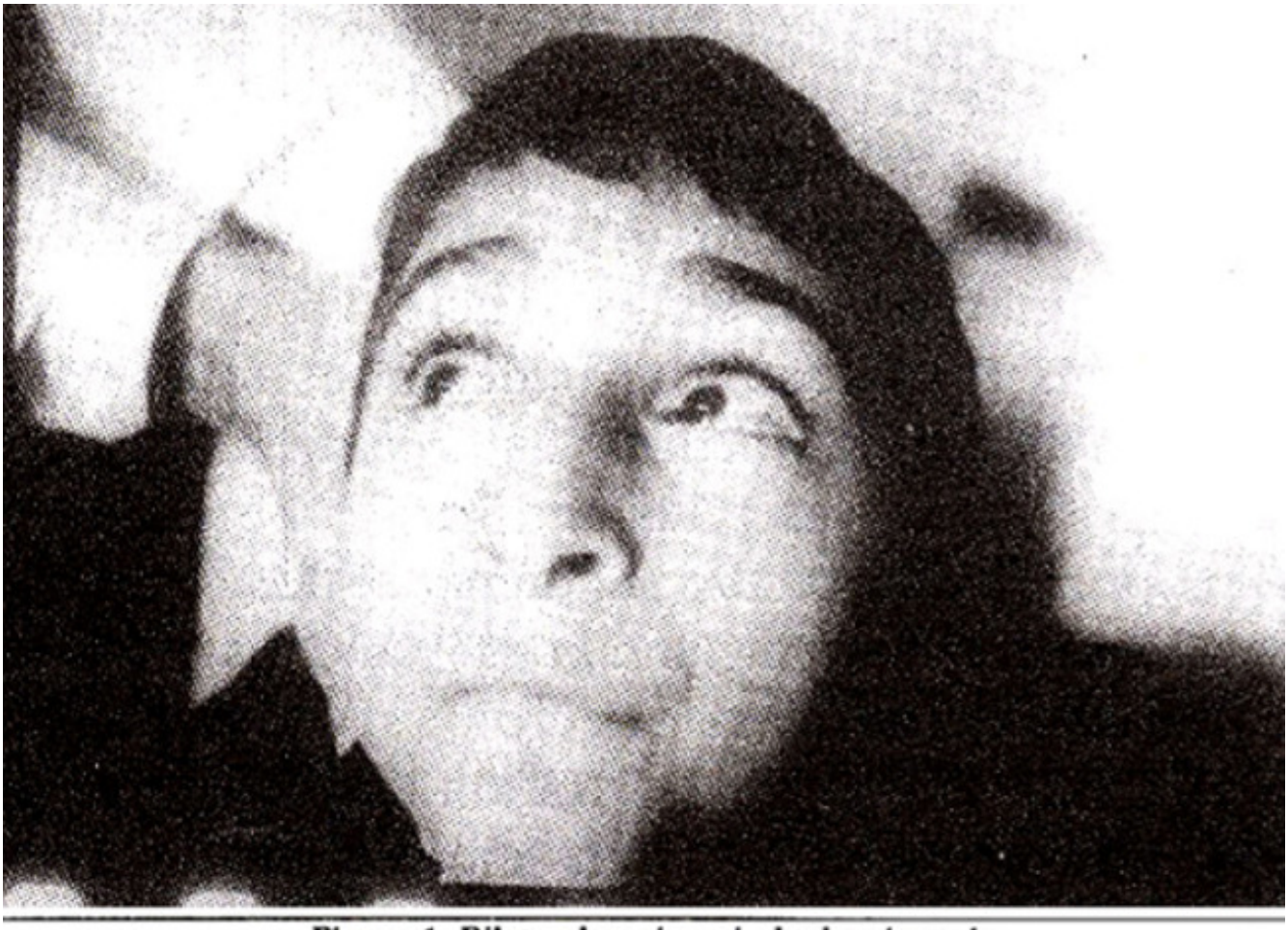

Figure 1. Bilateral conjunctival telangiectasia.

and E.N.T. examination showed prominent blood vessels on uvula and right nasal septum (telangiectasia). Tonsillar tissue was not visible and there were no palpable lymph nodes.

CASE 2

His five and a half year old sister also presented with the complaints of unsteady gait for the last two years alongwith the history of repeated chest and gastrointestinal infections for the same duration. FIer birth and early development were insignificant and her immunization was complete. Deterioration started at three and a half years of age and at present she walks with a broad base and needs support while walking and going upstairs. She cannot undress and bathe herself and can only scribble. Often, she sways her head. Her examination revealed an almost identical picture with slightly reduced intensity. An iaitial clinical diagnosis of ataxia-telangiectasia was confirmed by opthalmic examination which showed the presence of bilateral bulbar conjunctival telangiectasia. ENT examination of the brother showed telangiectasia over uvula and the right nasal septum and low levels of IgA and IgE and elevated levels of alpha-fetoprotein in both cases (Table).

TABLE. Immunoglobulins and AFP levels.

Tests	Values Brother	Sister	Normal ranges		
IgA (mg/dl)	19.0	47.0	24 mo	50	±24mg/dl
			8 yr	124	±45
			16 yr	148	±63
IgE (IU/ml)	3.6	3.0	24 mo	137	±147 IU/ml
			8 yr	251	±167
			16 yr	330	±212
Alpha-fetoprotein (ng/ml)	165.0	128.60	Adult < 40 ng/ml 1 yr< 30		

DISCUSSION

The predominant neurologic finding in ataxiatelangiectasia is that of a progressive cerebellar ataxia, which is usually seen at 12 to 18 months of age but can occur later and by early adolescence, independent ambulation becomes impossible[1,5]. Dysarthric speech, retarded growth, diminished or absent tendon reflexes and low intellectual function[6] are features of the disease as observed in both of our cases. Weight, height and head circumference by age for both children were below third percentiles for their respective sex. Telangiectasia first appear on the exposed bulbar conjunctivae and is primarily arterial and progressively spreads to different areas of the body[3]. Telangiectasia have, rarely, been reported on mucous surfaces and one case is reported involving subungual area[1]. In our first case, telangiectasia were also observed on the uvula and right nasal septum, which is an unusual feature. Recurrent sinusitis, ear and pulmonary infections and cough are noted in most patients and the usual terminal event in this disease is pneumonia[1,7]. Lymphoreticular malignancy develops in over 10% of patients and includes acute lymphocytic leukaemia and malignant tumours of lymphatic tissue[5]. Associated integumental abnormalities were not seen in our cases. During adolescence endocrine abnormalities are frequent and include gonadal hypoplasia, insulin dependent diabetes mellitus and growth failure[2,6]. Ataxia-telangiectasia is associated with immune defects in humoral and cellular systems with variable B and T cell deficiency. Deficiency of IgA and IgE, singly or together, constitutes the most common B cell abnormality[3,11]. Although the underlying defect in ataxia-telangiectasia is yet to be defined, the suggested ones are defects in tissue differentiation, organ differentiation and maturation and autoimmunity[8,10]. The finding of elevated aipha-fetoprotein and carcinoembryonic antigen in virtually all patients with ataxia-telangiectasia is consistent with an abnormal process of embryogenesis[11]. Specific therapy at immunologically reconstituting patients with ataxia-telangiectasia has been disappointing although a synthetic substance termed facteur thymique serique (FTS) by French workers has raised IgA and IgE levels to normal in patients with ataxia-

telangiectasia[4,11]. The disease is slowly progressive to death occurring 10 to 25 years after onset[3]. Symptomatic treatment including rapid control of infections, was given to these patients on an outpatient basis. We have started prophylactic treatment as well, in the form of benzathine penicillin injected at three weekly intervals. Genetic counseling to the parents has been given.

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