FAMILIAL DYSAUTONOMY
(RILEY-DAY SYNDROME)

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SUMMARY - Familial dysautonomia, also known as Riley-Day syndrome, is a disorder of autonomic nervous system with an autosomal recessive mode of inheritance. Reduction and/or loss of unmyelinated and small myelinated fibers is found, as reduction of dopamine beta-hydroxylase in blood. The diagnosis is based on clinical features: diminished lacrimation, insensitivity to pain, poor temperature control, abolished deep tendon reflexes, postural hypotension, vomiting attacks, poor motor coordination, and mental retardation. The treatment is symptomatic and many children die during the first years of life, usually as a result of repeated aspiration pneumonia. We report the case of a 1 year-old child with familial dysautonomia.

KEY WORDS: familial dysautonomia, neuropathy, autonomic nervous system.

Disautonomia familiar (síndrome de Riley-Day)

RESUMO - A disautonomia familiar, também conhecida por síndrome de Riley-Day, é desordem do sistema nervoso autônomo com herança autossômica recessiva. Redução e/ou perda de fibras pouco mielinizadas e não mielinizadas é encontrada, bem como redução da dopamina beta-hidroxilase no sangue. O diagnóstico é clínico: diminuição do lacrímejamento, insensibilidade à dor, distúrbio do controle térmico, reflexos profundos abolidos ou hipoativos, hipotensão postural, vômitos, pobre coordenação motora e retardo mental. O tratamento é sintomático e a maioria das crianças morre nos primeiros anos de vida, geralmente por pneumonias aspirativas de repetição. Relatamos o caso de uma criança de 1 ano de idade com disautonomia familiar.

PALAVRAS-CHAVE: disautonomia familiar, neuropatia, sistema nervoso autônomo.

Familial dysautonomia (FD), first described in 1949 under the title "central autonomic dysfunction with defective lacrimation"4, is a disorder of autonomic nervous system with an autosomal recessive mode of inheritance. Anatomic studies revealed a reduction and/or loss of unmyelinated and small myelinated fibers in autonomic and peripheral nervous system4, focal demyelination of dorsal roots and posterior columns of the spinal cord, noted in necropsy of cases known to have FD3. Plasma levels of dopamine beta-hydroxylase, the enzyme that converts dopamine to norepinephrine, are lower in patients with FD than in control subjects6. The excretion rates of vanillyl mandelic acid (VMA) and homovanillic acid (HVA) are respectively decreased and increased in dysautonomic subjects. The elevated ratio HVA/VMA may reflect failure of catecholamine precursors to be converted normally to norepinephrine and epinephrine7. The diagnosis is based on clinical features. In this report we present the clinical and laboratory findings of a child with FD.

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CASE REPORT

JAL, a 1 year-old male child has been seen intermittently at FMM Hospital de Clínicas since 6 months of age. His greatest problem is that he has unexplained febrile episodes and deglutition difficulty with weight loss. He has presented insensitivity to pain, diminished lacrimation, poor muscular tone, poor coordination, vomiting attacks, auto-mutilation and neuropsychomotor retardation. Pregnancy was uncomplicated and delivery was normal. There is no known Jewish ancestry and no known consanguinity. Family history revealed a paternal aunt with mental retardation and muscular weakness who died at 8 years-old without a defined diagnosis. At 5 months, he developed what was called pneumonia. He sustained his head at 6 months and sat at 11 months; he has not yet crawled. On physical examination: he is small for his age, with low-weight; temperature 38.5°C; his skin is thick and with several scars resulting from cutaneous infections; his tongue is smooth without fungiform papillae; his right hand is swelled with an ulcer on the index finger caused by auto-mutilation. He presents indifference to pain, abolished deep tendon reflexes and poor muscular tone. Moreover, he has had diminished lacrimation, but corneal reflex is normal. Complementary Tests - 1. Electroencephalogram showed no abnormalities; 2. Electroneuromyography revealed a sensory neuropathy; 3. Plasma calcium and phosphate were normal; 4. Urinary HVA is elevated; 5. Urinary HVA/VMA ratio is elevated. Radiological Findings - 1. CT-scan showed no abnormalities; 2. Right hand X-Ray has shown a reduction in bone density and increased index finger soft tissue; 3. Barium examination of upper gastrointestinal tract has shown a gastroesophageal reflux; 4. Chest X-Ray showed no abnormalities.

COMMENTS

The clinical course of this child fulfils the criteria outlined by Riley and Moore, which they considered essential for diagnosis, as well as others which may be helpful. The essential criteria for diagnosis were: a) history suggesting feeding difficulty from birth; b) regular failure in producing overflow tears; c) absent or hypoactive deep tendon reflexes; d) absent corneal reflex; e) postural hypotension; f) emotional lability; g) relative indifference to pain; h) absence of fungiform papillae on tongue. Other helpful criteria not essential for diagnosis were: a) Jewish progeny; b) blotching of skin with eating and/or excitement; c) abnormal temperature control; d) excessive sweating; e) abnormal esophageal motility; f) elevated urinary HVA/VMA ratio. Our patient has presented many features which are found in FD, such as: feeding difficulty, diminished lacrimation, absent deep tendon reflexes, indifference to pain, absence of fungiform papillae on tongue, abnormal temperature control, abnormal esophageal motility and elevated urinary HVA/VMA ratio.

Analysing the laboratory features, patients with FD have been reported to have low levels of plasma dopamine beta-hydroxylase (about half of that in normal subjects), enzyme that converts dopamine to norepinephrine and is released from sympathetic nerve endings. In those patients with FD an elevated urinary HVA/VMA ratio was found, reflecting failure of catecholamine precursors to be normally converted to norepinephrine and epinephrine. Our patient presented elevated urinary HVA/VMA ratio.

Brown and Johns evidenced a defect of peripheral nerve conduction in 7 of 10 patients with FD. Dyck has proposed a classification of hereditary autonomic sensory neuropathies (HASN) in five groups: HASN-I, dominant inheritance; HASN-II, recessive inheritance; HASN-III, familial dysautonomia (Riley-Day syndrome); HASN-IV, congenital indifference to pain; HASN-V, congenital indifference to pain with neuropathic pattern.

There is no specific treatment, and prognosis is poor. Many children die during the first years of life, usually as a result of repeated aspiration pneumonia. The management of our patient is concentrated on prevention of complications.

REFERENCES