A CASE OF THE HUTCHINSON-GILFORD PROGERIA SYNDROME

A. OMAR

SUMMARY

A case of the Hutchinson-Gilford progeria syndrome (HGPS) in Malaysia is described. A brief discussion of this rare condition and its differential diagnosis follows.

INTRODUCTION

The Hutchinson-Gilford progeria syndrome (HGPS) is an extremely rare condition of childhood. It is characterised by a deficiency of growth in the first year of life and certain physical features which contribute to the patient's appearance of premature aging. In Malaysia, cases of progeria-like syndromes have been reported in the popular press but none have, to this writer's knowledge, been documented scientifically. This is a report on a patient who has sufficient clinical features to justify a diagnosis of HGPS.

CASE REPORT

The patient was a 4½ year old Indian boy from Kelantan who was referred by a G.P. to the University Hospital Paediatric Unit on the 11.2.1982 for failure to thrive. The patient was said not to be growing well since birth. The child was a full term baby and was delivered at home by spontaneous vaginal delivery. He was said to be a "small baby" but the birth weight was unknown. The child was a small feeder and was introduced to solids only at the age of 18 months. His present diet seemed adequate. He was noticed to be smaller than his siblings. He had delayed eruption of his primary dentition which occurred at the age of two years but the milk teeth started to shed after a year. His hair was noticed to be sparse. He was however otherwise an active child. There was no history of recurrent infections, or symptoms to suggest malabsorption.

He was the second of three brothers. His 2 brothers (ages 7 years and 1 year) are of normal stature for age and are said to be well. The paternal and maternal ages at the time of his birth were 30 and 20 years respectively. He was the product of a consanguinous marriage; his parents were first cousins. The mother's complete obstetric history was unknown. His development milestones were within normal limits. He sat at the age of 8 months, stood with support at 12 months, walked at 15 months and talked with meaning at the age of 2 years.

Physical examination revealed a small, thin but alert and active child. His height was 95.4 cm, weight 10.5 kg and head circumference was 44 cm. All 3 measurements were below the 3rd percentile for age. The blood pressure was 110/70 mm Hg. The face was thin and small and the cranium appeared large in comparison to the face and body. The eyes were prominent and he had a glyphic nasal tip. Micrognathia was evident. He had protuding ears and there was circumoral and midfacial pigmentation. The scalp hair was brownish and sparse. There was a receding hair-line. The eye-brows and eye-lashes were also sparse. There were no permanent dentition. The milk teeth were discoloured and malformed. Caries were present. The skin was shiny, thin, taut and inelastic

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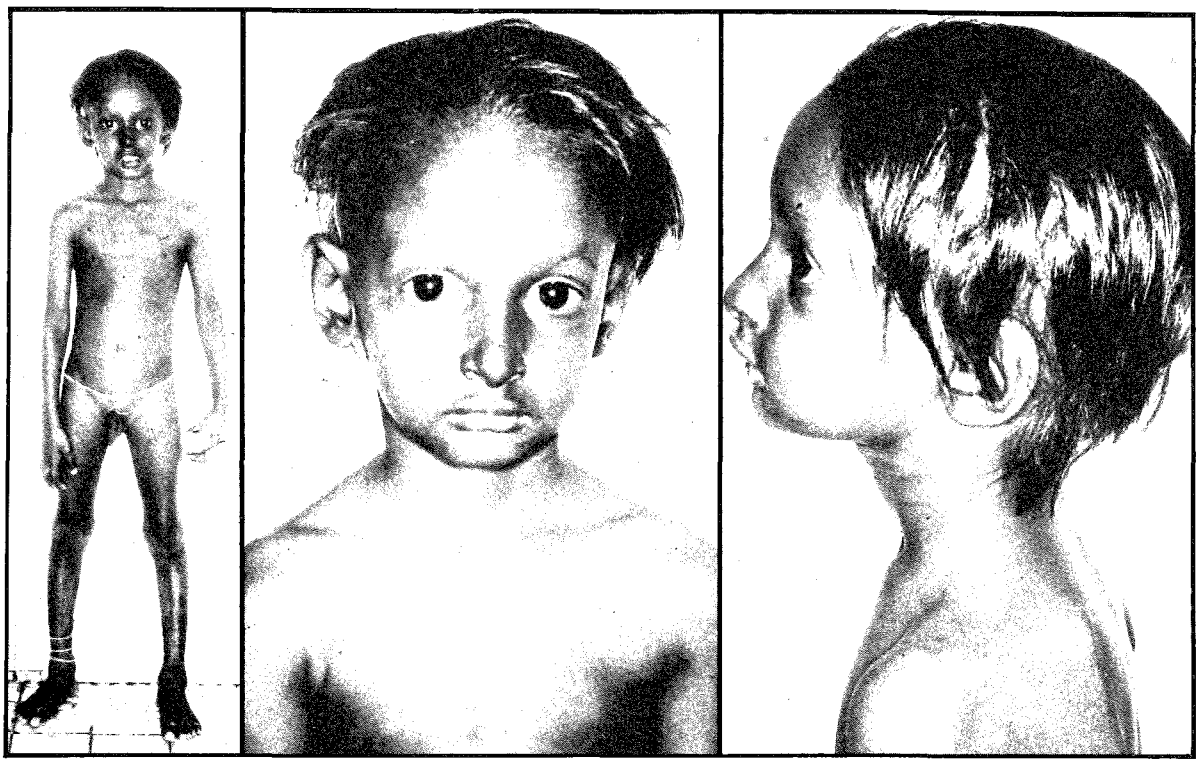

Fig. 1A Full frontal view of patient. Note paucity of subcutanous fat, scleroderma-like skin, thin limbs and typical horse-riding stance. Fig. 1B Front profile of patient. Note the sparse hair and eyebrows, prominent eyes, midfacial pigmentation and protruding ears. Fig. 1C Lateral profile of patient. Note the prominent forehead, glyphic-tipped nose and micrognathia.

with a paucity of subcutaneous fat. There were wrinkles around the eyes. The gait was wide based and shuffling and he stood with a horse-riding stance. The limbs were thin but no coxa valga were seen. There was no abnormality of the nails. Mental development is consistent with age. In view of the clinical features a diagnosis of HGPS was made with malnutrition as a differential diagnosis.

Biochemical investigations revealed no evidence of malnutrition. The serum proteins, lipids and electrolytes were all within normal limits. The Hb was 11.8 gm/100 ml with a PVC of 38% and a MCHC of 31%. The total WBC count was 8,600 mm^{-3}. The ECG showed a slight strain pattern with ST elevations in leads I, II and V6. This is abnormal in a child of 4 years. X-rays of the skull, chest and long bones did not reveal any abnormalities and the bone age was consistent with the chronological age.

DISCUSSION

HGPS is a rare disease of childhood but it is often diagnosed erroneously. HGPS was first reported by Hutchinson in 1886 in the United Kingdom. He described a boy who had congenital absence of hair and atrophy of the skin and its appendages. Later Gilford studied this boy and another patient and coined the term progeria which meant premature aging. Progeria is perhaps an inappropriate term as the clinical picture is different from the normal process of senile aging. Since then over sixty cases have been reported in the world medical literature. These cases were discussed in an excellent review by Debusk. [1]

Debusk [1] selected three features as being present early in life which would facilitate a diagnosis of HGPS. They were mid-line pigmentation, a scleroderma-like skin and a glyphic nasal tip. The patient in this report had all three features. The other features as described by Debusk as being present in most cases of HGPS are summarised in Table I. As can be seen, this patient has most of the features described.

Patients with HGPS are said to be of normal intelligence. No chromosomal abnormality or biochemical markers which would aid in diagnosis

TABLE I
CHARACTERISTICS OF HGPS (after Debusk)

Characteristic	Presence in this patient
Short stature	+
Weight decreased for height	+
Subcutaneous fat diminished	+
Scleroderma-like skin	+
Craniofacial disproportion	+
Micrognathia	+
Scalp veins prominent	−
Alopecia	+
Eyes prominent	+
Eyebrows, eyelashes absent	+ + (sparse)
Dentition, delayed and abnormal	+
Anterior fontanelle present	−
Glyphic, beaked nose	+
Nasolabial, circumoral pigmentation	+
Lips thin	+
Ears protuding	+
Pyriform thorax	−
Clavicles short, dystrophic	−
Horse riding stance	+
Wide based shuffling gait	+
Coxa valga	−
Thin limbs	+
Joints prominent and stiff	−
Thin, high-pitched voice	+
Dystrophic nails	−
Terminal phalanges radiolucent	−

+ : present ; − : absent

have so far been identified. The metabolic abnormalities in HGPS are still poorly understood. In some cases elevation of basal metabolic rates have been described. [2] An increased resistance to insulin and a decreased response to growth hormone have also been demonstrated. [3] No abnormalities of pituitary, thyroid, parathyroid or adrenal functions have been reported. Atherosclerosis occur early in life leading to coronary occlusion. In Debusk's series the commonest known casue of death was acute myocardial infarction. The mean age of death in his series was 13.4 years.

There are a few other conditions which present as a senile-like appearance. Cockayne's syndrome is another rare condition of childhood that presents as a short stature associated with other defects like retinal degeneration, hypotrichosis, photosensitivity, thin skin, paucity of subcutaneous fat, impaired hearing and mental deficiency. It is an autosomal recessive condition. The Hallermann-Streiff-Francois syndrome presents as small stature

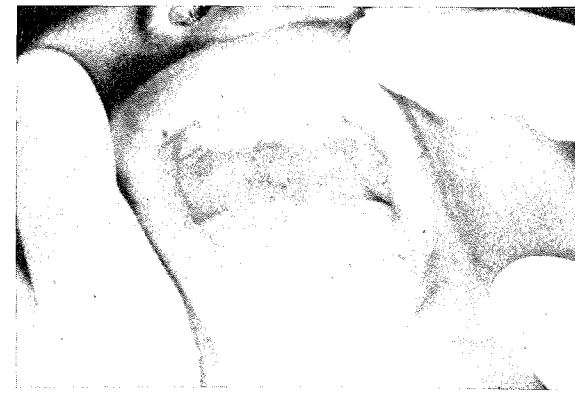

Fig. 2 View of open mouth. Note the abnormal dentition.

associated with baldness, small eyes, prominent nose, micrognathia and a tendency towards cataracts. Persons with this disorder usually have normal intelligence and do not suffer from atherosclerosis. These two conditons are discussed in greater detail in an article by Smith. [4] Progeria of adulthood, or Werner's syndrome presents in early adulthood. It is characterised by a tendency to baldness and premature greying of the hair. The subcutaneous fat is sparse, and the skin shiny and taut over bony prominences. The limbs are spindly and the hands small with deformed fingers. The nose is beaked and the eyes prominent. Cataracts may develop. Other abnormalities include atherosclerosis, arthritis, osteoporosis, diabetes and thyroid dysfunction.

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