

**240** A CASE OF PSEUDOHYPOPARATHYROIDISM WITH SUBTANEAN METAPLASTIC BONE FORMATION

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We describe a case of Pseudohypoparathyroidism(PHP) with Albright's hereditary osteodystrophy. The patient is a 4-year-old man. He was referred to our hospital because of the tumor of his right foot. He was 103cm (Mean-0.3SD) tall and weighed 21kg (Mean+1.5SD). He had a round face and mental retardation. Biochemical examination revealed the presence of hypocalcemia (6.8mg/dl) and hyperphosphatemia (9.5mg/dl). Serum PTH was high (590pg/dl) with negative Ellsworth-Howard test. Serum free T4 was slightly low(0.96ng/dl) and serum TSH was high (9.9 $\mu$ U/ml). He was diagnosed with PHP type 1a because of AHO with negative E-H test. PHP type 1a diminished G protein (Gs alpha) activity. This Gs alpha deficiency in PHP type 1a may cause not only PTH resistance but also resistance to TSH, gonadotropin and glucagon. This patient showed low level of free T4 and high level of TSH. From now on, we have to check the resistance to the metabolic effect.

**242** A CASE OF HYPERCALCEMIA DUE TO OVERUSE OF OFVITAMINE D OINTMENT

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We report a case of infant hypercalcemia due to overuse of vitamin D ointment. She is 5-month-old. She had generalized eczema from 2-month-old, and was diagnosed as pustular psoriasis in 4-month-old. She use high dose of steroid and vitamin D ointment for 2 weeks. She had a common cold, and had oral medicine prescribed by primary physician. 5 days after, she was admitted to our hospital because of disturbance of consciousness.

Severe hypercalcemia (serum Ca level 21.2 mg/dl), hyponatremia, hypokalemia, and metabolic alkalosis were recognized on admission. She was suspected to have vitamin D toxinoses. We stopped use of ointment steroid and vitamin D, and was treated by transfusion and hydrocortisone and diuretic. After 9 days, the patient's serum calcium levels returned normal range. Serum calcium returned normal range by withdrawal of ointment and use of diuretics, and her PTH level was low on admission. So we assume that hypercalcemia in the case was due to vitamin D toxinoses caused by overusing vitamin D ointment.

**241** A GAIN OF FUNCTION MUTATION OF CALCIUM SENSING RECEPTOR (CaR), F821L, IS A CAUSE OF SPORADIC HYPOPARATHYROIDISM

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A male infant born at 37-week gestation without asphyxia nor severe jaundice, developed generalized seizures due to hypocalcemia at age 14 days, and treated with intravenous calcium gluconate administration. His intact PTH level was undetectable. He was diagnosed as idiopathic hypoparathyroidism and was treated initially with 1 $\alpha$ -hydroxyvitamin D<sub>3</sub> and calcium supplementation. His serum calcium levels were 1.5-2.0 mmol/L. He repeated generalized seizures due to hypocalcemia even after the treatment. Sequence analysis of genomic DNA prepared from mononuclear cells of the patient's peripheral blood was performed and a heterozygous C to T base pair substitution was identified at position 2,833 in the 6<sup>th</sup> transmembrane domain of CaR. This mutation produces an amino acid change from phenylalanine to leucine at position 821 (F821L). *In vitro* functional analysis of F821L measured by introducing wild-type and F821L CaR cDNA into HEK293 cells and calculating the mean EC<sub>50</sub> values revealed that EC<sub>50</sub> of mutant receptor (2.4 $\pm$ 0.1nM) is lower than that of wild-type (3.4 $\pm$ 0.1nM) (by Brown EM and Mai M). Renal echography revealed nephrocalcinosis. Administration of hydrochlorothiazide (1.2mg/kg/day) was started at 7 year-old to reduce hypercalciuria and to normalize serum calcium levels. Serum calcium levels were maintained in the 2.0-2.2 mmol/L range and urine Ca/Cr ratio was decreased to 1.0-1.5 mmol/mmol even after the doses of 1 $\alpha$ -hydroxyvitamin D<sub>3</sub> and the calcium supplementation were reduced.

**243** A CASE OF McCUNE-ALBRIGHT SYNDROME WITH NARROWING OPTIC CANAL : A TRIAL OF INTRAVENOUS PAMIDRONATE TREATMENT

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**[Introduction]** McCune-Albright syndrome (MAS) characterized by cafe-au-lait spot, polyostotic dysplasia and hyperfunction of endocrine organ is a rare genetic disorder caused by somatic mutations of *GNAS1*. Herein, we present a case of MAS with narrowing optic canal treated with intravenous pamidronate over a 2-year period.

**[Patients]** Patient is an 8-year-old girl. She was noticed a lot of cafe-au-lait spot on the right side of the trunk at birth. At age 1 year and 6 month, breast budding and genital bleeding appeared. Laboratory examination showed gonadotropin independent precocious puberty and hyperthyroidism with functional nodules. She had been treated with Cyproterone acetate and Propylthiouracil. There were no abnormalities of the pituitary and adrenal gland. *GNAS1* analysis revealed a R201C mutation. She was diagnosed as having MAS from clinical features and genetic analysis. At age of 2 year, brain MRI revealed low intensity mass in the left sphenoid bone, which indicating an involvement of fibrous dysplasia of bone. At age of 5 year, fibrous dysplasia of bone involved the anterior base of the cranium and results in encasement of the optic-nerve canal. Visual acuity and field were not disturbed. At age of 6 year and 9 months, pamidronate was administered by intravenous infusion 1mg/kg/day for 3days every 3 months for 2 years. Bone alkaline phosphatase and P1PC levels fell from 760.5 IU/l to 388.1 IU/l and from 428 ng/ml to 284 ng/ml, respectively, which indicating decrease of bone resorption. Osteocalcin level increased from 69 ng/ml to 110 ng/ml. The bone mineral density at lumbar spine increased from 0.751 to 0.791. MRI revealed no significant change of the mass lesions.

**[Discussion]** Encasement of the optic-nerve canal in fibrous dysplasia causes narrowing of the canal and might lead to constriction and eventual blindness. However, there is controversy about indication of prophylactic decompression in such patients. Therefore, non-aggressive pamidronate treatment might be useful for the management of fibrous dysplasia involving encasement of the optic-nerve canal.