CASE REPORT

# Hypocalcemic Tetany in a 10 Year Old Girl

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## BACKGROUND:

Autoimmune hypoparathyroidism is rare in children. We present a 10 year old girl who presented with hypocalcaemic tetany due to autoimmune hypoparathyroidism.

The term hypoparathyrodism refers to a group of disorders in which the relative or absolute deficiecy of PTH leads to hypocalcemia and hyperphosphatemia. common cause of hypoparathyrodism are surgical removal of parathyroid glands,radiation,drugs such as alcohol,malignancy,autoimmune disorders and genetic mutations.[1]Autimmune hypoparathyrodism may occur alone or in association with additional features , including mucocutaneous candidiasis and adrenal insufficiency, as acomponent of the autoimmune polyglandular syndrome type 1(APS).[2] We report a10 year's old girl with isolated autoimmune hypoparathyrodism.

## CASE REPORT:

A10 year old Indian girl presented with recurrent carpopedial spasm and tetanic postures a both hands and feet since 2 months .She was born of third degree consaguineous marriage and was 2nd of 3 children with other siblings being normal.Her vegitarian diet contained no milk or milk products or vegetables. On examination she had no signs of rickets or short stature. Her blood pressure was normal. Her trousseau's sign was positive .She had no skin pigmentation or oral thrush. Thus she was suspected to have hypocalcemic tetany due to either hypoparathyrodism or chronic renal failure. Investigations showed hypocalcemia (serum calcium=7 mg %) with hyperphosphatemia (serum phosphors =10.0 mg %) and elevated serum alkaline phosphatase(320IU/L) with serum ionic calcium of 0.5mmol/L. Her renal functions, blood gas analysis, hemogram and urine calicum/creatinine was normal.Her serum parathyroid levels were normal 21.4 pg/ml (normal=12-72pg/ml) inspite of a low serum calicum suggestive of primary hypoparathyroidism. Her thyroid function tests were normal. Antimicrosomal antibody was elevated suggesting isolated autoimmune hypoparathyroidism. She was treated with IV,calcium,oral calcitrol and calcium carbonate supplemenents.

## DISCUSSION:

Hypoparathyroidism can occur due to aplasia or hypoplasia of parathyroid glands,as in (DiGeorge syndrome, shprintzen syndrome),parathyroid hormone gene mutations,autoimmune parathyroiditis( in isolation or with Addison's disease and mucocutanouse candidiasis ,hemosiderosis, Wilson's disease,

Familial congenital variant with dysmorphic features or surgical removal or

Damage to the parathyroid glands during thyroidectomy[1]

Autoimmune hypoparathyrodism is suggested by the finding of parathyroid antibodies and by frequent association with other autoimmune disorders. It is often seen as apart of polyglandular autoimmune disease type 1(at least 2 of the following are required, autoimmune hypoparathyroidism, Addison's disease,and chronic mucocutanouse candidiasis).In this polyglandular endocrinopathy candidiasis precedes the other disorders followed by hyperparathyroidism and then Addison's disease.[2].

Patients present with muscle pain and cramps, stiffness, tingling of hands and feet with laryngeal or carpopedial spasm. Convulsion and cataract may occur in long standing untreated cases.Investigations reveal hypocalcemia with hyperphosphatemia. Serum alkaline phosphatase is normal or low but high levels may be seen in patients with sever hypocalcemia.Serum parathyroid levels are low [3]. Laboratory finding in hypoparathyrodism are hypocalcaemia,


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hyperphosphatemia and low or inappropriately normal parathyroid level that because reserve secretary capacity of parathyroid gland is present, ultimately the level of parathyroid hormone is low when reserve secretary capacity is lost. Treatment consists of intravenous calcium gluconate (10% solution 5 to 10 ml rate of 0.5-1 mL/min) for emergency treatment of tetany.supplementation with 1, 25 dihydroxycholecalciferol in adose of 0.01 to 0.1 ug/kg/day to maximum of 1-2 ug/day is required. Once normocalcemia is achieved, one can continue therapy with vitamin D2 (50,000-1, 00,000 IU) daily to make therapy economically feasible. Vitamin D3 has the advantage of rapid onset of action and rapid reversal of hypocalcaemia after discontinuation in the event of over dosage. Calcium supplement should be ensured. High phosphorus containing food such as milks, eggs and cheese should be avoided [4,5,6,7] monitoring of patient and frequent estimation of serum calcium levels is required to determine the requirement of vitamin D.

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