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Severe hypercalcemia in a patient with parathyroid adenoma and multinodular goiter

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Background: Primary hyperparathyroidism is a common cause of hypercalcemia. Uncontrolled secretion of parathyroid hormone leads to renal, gastrointestinal, neuropsychiatric and cardiovascular symptoms. Quick intraoperative parathyroid hormone measurement confirms immediately the success of surgical treatment. Coexistent of parathyroid adenoma and multinodular goiter is quite rare.

Case Presentation: A 60 years old patient presented with one week history of constipation, agitation and vomiting on background of hypertension. No significant family history.

Examination: Dehydrated and mild confusion. Normal systemic examination. Tachycardiac, Tachypneic and has low blood pressure. Glasgow coma scale of 15/15.

Investigations: Venous blood gas: PH 7.39, Glucose 9.1 mmol/L, Potassium 3.6 mmol/L and Lactate 4.1 mmol/L. Electrocardiogram showed sinus tachycardia. Laboratory blood investigations: White cell count 12*10^9/L, High Sensitivity C-reactive protein 16 mg/L, Serum Sodium 148 mmol/L, Serum Potassium 3.5 mmol/L, Blood Urea 11.7 mmol/L, Serum Creatinine 115 umol/L, AKI stage 0, Blood adjusted calcium 5.72 mmol/L, Serum Magnesium 0.66 mmol/L, Myeloma screen negative, Thyroid stimulating hormone 0.30 mIU/L, Serum Total proteins 61 g/L, Normal Immunoglobulins (IgG,IgA and IgM), serum Parathyroid hormone 2473 ng/L and Urine calcium 13.83 mmol/24hrs.

Imagings: Chest Radiograph unremarkable. Computed Tomography (CT) of head normal. No obvious malignancy identified on CT Thorax abdomen and Pelvis. Ultrasound Thyroid reported as multinodular goiter and a 4x2x1.7 cm mass at right tracheoesophageal groove. Parathyroid gland nuclear scan reported findings consistent with right parathyroid adenoma.

Management: Initial management with intravenous fluids resuscitation, intravenous loop diuretic treatment, intravenous pamidronate and calcitonin. Due to resistance to medical treatment, right side inferior parathyroidectomy performed.

Biopsy: Report confirms the diagnosis of benign tumor, measuring 6.20g. No evidence of malignancy.

Outcome: Post-operative, Parathyroid hormones and serum calcium levels decreased, with few episodes of hypocalcemia which resolved with calcium replacement. Alfacalcidol prescribed to prevent hungry bone syndrome

Follow-up: The patient was followed in ambulatory care clinic for symptoms and bloods reviews.

Discussion: Diagnosis of parathyroid adenoma depends on clinical presentation, biochemistry, histology and imaging including nuclear scans. Adenoma constitutes 85% of the cases of primary hyperparathyroidism. Hypocalcemia and Hungary bone syndrome are major complications postoperatively that need to be addressed and warrants regular follow-ups.

Biography

Amir Hayat currently working in Darent Valley Hospital, United Kingdom. He is a recipient of many awards and grants for his valuable contributions and discoveries in major area of endocrinology and diabetes. His international experience includes various programs, contributions and participation in different countries for diverse fields of study. His research interests reflect in his wide range of publications in various national and international journals.