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INCIDENCE AND RISK FACTORS FOR PROLONGED HUNGRY BONE DISEASE AFTER PARATHYROIDECTOMY IN DIALYZED PATIENTS

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INTRODUCTION AND AIMS

Although reported as rare complications, severe and prolonged hypocalcemia and hungry bone disease (HBD) following parathyroidectomy (PTX) in dialyzed patients are difficult to correct. We evaluated the risk factors for persistent hypocalcemia (total plasma calcium ≤ 7 mg/dL more than 3 months) accompanied by HBD symptoms after surgery for severe secondary hyperparathyroidism (SHPT) in a cohort of dialyzed patients.

METHODS

64 PTX were performed in the Department of General Surgery, between September 2009 and August 2013 for severe SHPT in dialyzed patients (51 HD and 13 CAPD); total PTX with concomitant forearm implant of a fragment of one of the PT gland was the surgical procedure in all cases. After surgery, subjects were referred to the nephrologist for immediate and long-term monitoring of the metabolic disturbances of the hungry bone disease. The period of follow-up was 12 months after surgery.

iPTH, alkaline phosphatase (AP), plasma Ca, P, and Mg, albumin, body mass index and treatment with calcimimetics or active Vitamin D were noted before surgery. After surgery, plasma Ca was assessed at intervals depending the patient's evolution in the first month and then weekly in patients with persistent hypocalcemia. IV and/or oral Ca supplements, oral active vitamin D, increased Ca hemodialysis solutions and oral Mg supplements when needed were used to correct hypocalcemia.

We analyzed if there was any relation between perioperative abnormalities and prolonged postoperative HBD (bone pain, muscle spasms, tingling and hypocalcemia ≤ 7 mg/dL more than 3 months).

RESULTS

3 months after surgery, clinical features of HBD was noted in 11 patients (17.87%): 7 men and 4 women, all hemodialyzed. Statistical analysis revealed that an absolute decrease in the immediate postoperative period of Ca greater than 5mg/dL compared with preoperative values was best correlated with prolonged HBD syndrome. We also found a positive correlation between preoperative iPTH > 1400 pg/mL and > 6 months before surgery and prolonged hypocalcemia and between BMI > 30 and prolonged hypocalcemia, as well. No relationships were found between preoperative Ca, Mg, P, albumin or treatment and prolonged hypocalcemia.

CONCLUSIONS

In our study, prolonged hungry bone disease was noted in a significant proportion of dialyzed patients who underwent PTX. Severe decrease of Ca levels immediately after PTX, severe and prolonged preoperative high values of iPTH, and obesity, as well, were correlated with this complication. Therefore, delaying surgical treatment decision must be avoided to prevent medium and long-term complications of hungry bone disease in dialyzed population with severe SHPT, non-responsive to medical treatment. As for obesity-associated prolonged hypocalcemia, further studies are needed in order to establish the importance of these finding.

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