

Serum phosphorus values for early prediction of hypocalcemia in total thyroidectomy

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I read with interest article by Inversini *et al.* (1) in October issue. Hypocalcaemia is most dreaded complication after thyroidectomy and we agree with authors. There is also ample evidence in literature for postoperative parathyroid hormone (PTH) use to predict the risk of hypocalcaemia after thyroidectomy. However it is not possible to have PTH estimation in all patients in third world hospitals where either the facility is not available or all patients cannot afford. In India, almost all government medical college hospitals provide treatment free or at minimum cost which includes admission, bed, operation and bed charges, including meals. Thyroid surgery is practised by specialists as a day care surgery but we keep the patient in hospital for at least two days for hypocalcaemia monitoring. Here day care means that these patients are off fluid and orally allowed with eight hours. Thyroidectomy patient is kept in the hospital for two post-operative days as there is no bed charge. We always want to discharge our patients earlier not because of cost factor but because of patient load and waiting. PTH estimation is not available in all government hospital but calcium and phosphorus is available free of cost.

We feel that serum phosphorus has received less focus in patients after total thyroidectomy. It was thought that the release of antidiuretic hormone in response to surgical stress and consequent retention of water lead to hemodilution and transient postoperative decrease of calcium, phosphorus and albumin. However in thyroid surgery the quantum of IV fluids used is very little as these patients are off fluid with six to eight hours. So serum phosphorus values are very reliable in thyroidectomy patients who have received not large quantities of IV fluid and off fluid with

in eight hours. Phosphorus ions are inversely related to calcemia. PTH controls intestinal and renal absorption and excretion of phosphorus. PTH acts directly on proximal tubules of nephron and reduce phosphorus reabsorption and increasing phosphaturia (2,3). The drop in serum phosphorus in response to PTH stimulation is earlier than increase in calcium. Therefore, monitoring of phosphorus on post-operative day one and two gives an early prediction of hypocalcemia. If serum phosphorus is higher but within biochemical range at 12–24 hours of thyroidectomy there are chances of hypocalcemia.

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Footnote

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