Can routine Vitamin D replacement prior to surgery alter post-operative secondary hyperparathyroidism?

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**Introduction**
A persistently elevated parathyroid hormone (PTH) following parathyroidectomy is usually associated with Vitamin D deficiency.

We have previously demonstrated this to occur in >60% of post-operative patients.

**Aims**
To examine the effect of routine Vitamin D replacement pre-operatively on the proportion of patients with persistently elevated PTH post-operatively.

**Data collection**
Data was collated retrospectively from our parathyroid database. This included: patient demographics/ pre- and post-operative biochemistry/ operative data & Vitamin D treatment

**Results**
126 consecutive patients undergoing parathyroidectomy for sporadic primary hyperparathyroidism were examined. 88 patients (70%) were female.

Pre- and post-operative biochemical results are shown in Table 1.

Pre-operative ultrasound accurately localised 72% patients, & nuclear imaging accurately localised 64%. This allowed for 82 patients (65%) to undergo targeted (minimally invasive) parathyroidectomy. 116 patients (92%) had a single gland excised.

All patients received Vitamin D (cholecalciferol 1000-2000iu daily) at least 3 months prior to parathyroidectomy. There were no episodes of severe hypercalcaemia requiring expedited surgical intervention.

98% patients were rendered normocalcaemic following parathyroidectomy (failure rate 2%). Of these, 45 (36%) were found to be Vitamin D deficient. There were no episodes of prolonged hypocalcaemia post-operatively.

45% patients demonstrated a persistently raised PTH post-operatively despite successful surgery.

**Summary & Conclusions**
A considerable proportion of patients with primary hyperparathyroidism demonstrate Vitamin D deficiency.

Routine Vitamin D replacement in deplete patients prior to parathyroidectomy results in a reduction in post-parathyroidectomy Vitamin D deficiency in patients with primary hyperparathyroidism.

This Vitamin D replacement carries no adverse consequences.

We have demonstrated a small reduction in secondary hyperparathyroidism following Vitamin D replacement, which is likely to relate to better bone health, now being explored.

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<tr>
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<th>Pre-operative</th>
<th>Post-operative</th>
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<tbody>
<tr>
<td>Median serum Ca2+ (mmol/l) [range]</td>
<td>2.9 [2.6-4.0]</td>
<td>2.38 [2.15-2.76]</td>
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<tr>
<td>Median serum Vitamin D (nmol/l) [range]</td>
<td>30.6 [7.2-127]</td>
<td>60.4 [11.4-226]</td>
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<tr>
<td>Median PTH (pmol/l) [range]</td>
<td>13.1 [4.5-84.9]</td>
<td>3.25 [0.5-17.5]</td>
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<td>Proportion [%] Vitamin D deficient (&lt;50nmol/l)</td>
<td>79.5</td>
<td>44.8</td>
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