



## Invited Commentary

## A Commentary on “Role of preoperative vitamin D supplementation in reducing post thyroidectomy hypocalcemia; Cohort Study”. (Int J Surg 2019; Epub ahead of print)

Dear Sir,

We read with great interest the article entitled “Role of preoperative vitamin D supplementation in reducing post thyroidectomy hypocalcemia; Cohort Study” by Mehreen Khan Bhattani et al. published in the International Journal of Surgery [1].

The paper included an interesting randomized study comparing 51 patients treated with Vitamin D 200000 IU per os at the time of admission, along with 700 mg of calcium carbonate per day per os for 2 days before thyroid surgery and a control group of 51 patients receiving only 700 mg of calcium carbonate per day per os for 2 days preoperatively, without Vitamin D supplementation to analyse whether routine preoperative vitamin D prophylaxis can prevent postoperative hypocalcaemia. The Authors found an over double in rate (29.4% vs 11.7%) of postoperative hypocalcaemia in the group without preoperative Vitamin D administration. Moreover, the Authors found the risk of developing postoperative hypocalcaemia was 3.1 times higher in the placebo group compared to the study group.

Hypocalcaemia after thyroid surgery is associated either to parathyroid devascularisation or stunning, or accidental removal of parathyroid tissues. Total thyroidectomy, completion thyroidectomy and neck dissection are the surgical procedures which largely increase the risk of postoperative hypocalcaemia with a wide range of incidences reported in literature [2].

Concerning the incidences of postoperative hypoparathyroidism, we recently reported low rates of temporary hypoparathyroidism (11.4% in total thyroidectomy vs 21.4% in total thyroidectomy with prophylactic central neck dissection) and permanent hypoparathyroidism (1.5% in total thyroidectomy vs 6.4% in total thyroidectomy with prophylactic central neck dissection) in our large case series. All the procedures were performed by 3 expert surgeons in three referral centers for endocrine surgery. In case of accidental removal or injury of parathyroid glands during surgery, auto-implantation was carried out at the level of the stern-mastoid muscle [3]. Hypoparathyroidism is a specific complication of thyroid surgery, especially in total thyroidectomy for giant multinodular goiters or for large thyroid cancers. Muscular or the less

invasive subcutaneous autoimplantation helps to mitigate its incidence [4].

The differences in early complications should be interpreted with care. Preoperative Vitamin D supplementation can mask latent hypocalcaemia in the early postoperative period, resulting in underestimation of a percentage of patients who could benefit from a more aggressive replacement therapy. Among the complications of severe hypocalcaemia which can even be life threatening are QT prolongation, torsades de pointes and laryngospasm. Therefore, an early and definitive recognition is mandatory.

There is a lack of long term follow up in the reported study. To perform analysis of the effect of preoperative Vitamin D supplementation, both transient and permanent hypocalcaemia should be studied. Further future large comparative studies are required.

**Author contribution**

Claudio Gambardella: manuscript writing/editing.  
Ludovico Docimo: manuscript writing/editing.

**Provenance and peer review**

Invited commentary, internally reviewed.

**Declaration of competing interest**

None.

**References**

- [1] Mehreen Khan Bhattani, Mubarak Rehman, Moiz Ahmad, Humera N. Altaf, Usama K. Choudry, Kamran H. Khan, Role of Preoperative Vitamin D Supplementation in Reducing Post Thyroidectomy Hypocalcemia; Cohort Study, IJS, 2019 (Epub ahead of print).
- [2] N. Ahmed, M. Aurangzeb, M. Muslim, M. Zarin, Routine parathyroid auto-implantation during total thyroidectomy: a procedure with predictable outcome, JPMA 63 (2013) 190–193.

DOI of original article: <https://doi.org/10.1016/j.ijjsu.2019.08.035>

<https://doi.org/10.1016/j.ijjsu.2019.10.009>

Received 4 October 2019; Accepted 9 October 2019

Available online 15 October 2019

1743-9191/ © 2019 IJS Publishing Group Ltd. Published by Elsevier Ltd. All rights reserved.

- [3] C. Gambardella, R. Patrone, F. Di Capua, C. Offi, C. Mauriello, G. Clarizia, C. Andretta, A. Polistena, A. Sanguinetti, P. Calò, G. Docimo, N. Avenia, G. Conzo, The role of prophylactic central compartment lymph node dissection in elderly patients with differentiated thyroid cancer: a multicentric study, *BMC Surg.* 18 (Suppl 1) (2019 Apr 24) 110, <https://doi.org/10.1186/s12893-018-0433-0>.
- [4] G. Conzo, C. Della Pietra, E. Tartaglia, C. Gambardella, C. Mauriello, A. Palazzo, L. Santini, L. Fei, G. Rossetti, G. Docimo, A. Perna, Long-term function of parathyroid subcutaneous autoimplantation after presumed total parathyroidectomy in the treatment of secondary hyperparathyroidism. A clinical retrospective study, *Int. J. Surg.* 12 (Suppl 1) (2014) S165–S169, <https://doi.org/10.1016/j.ijssu.2014.05.019>.

Claudio Gambardella\*, Ludovico Docimo  
*XI Division of General, Mini-invasive and Obesity Surgery, Master of Coloproctology and Master of Pelvi-Perineal Rehabilitation, University of Study of Campania “Luigi Vanvitelli”, Naples, Italy*  
E-mail addresses: [claudiog86@hotmail.it](mailto:claudiog86@hotmail.it), [claudiog86@hotmail.it](mailto:claudiog86@hotmail.it) (C. Gambardella), [ludovico.docimo@unicampania.it](mailto:ludovico.docimo@unicampania.it) (L. Docimo).

---

\* Corresponding author. XI Division of General, Mininvasive and Obesity Surgery, University of Study of Campania “Luigi Vanvitelli”, Naples, via Luigi Pansini n° 5, 80131, Italy.