

# AB210. SOH22ABS071. The role of indocyanine green in the intraoperative identification of parathyroid tissue during thyroidectomy

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**Background:** Hypocalcaemia following thyroidectomy is reported in up to 30% of patients postoperatively and represents a significant challenge to patient care. This complication is often related to intraoperative technical issues, such as erroneous excision of parathyroid tissue (PT). Currently the frozen section method and the “float or sink” techniques are used for PT identification. A novel approach which may benefit PT identification is the utilisation of intravenous (IV) indocyanine green (ICG) with near-infrared (NIR) photography. ICG is an inert molecule that fluoresces when exposed to light between 820–830 nm produced by a NIR camera. This technology exploits an accepted phenomenon whereby PT itself fluoresces when exposed to light of similar wavelength. Together, ICG has been shown to enhance this natural fluorescence by PT making it ideal for real-time PT identification.

**Methods:** Following visualisation of thyroid tissue, patients randomly assigned to the experimental group (n=2) received ICG 7.5 mg IV. NIR photography was subsequently used to visualise PT in real-time allowing for precise thyroidectomy. Intraoperative PTH assays pre and postoperatively were additionally used in both groups. Postoperative symptoms of hypocalcemia and corrected serum calcium on postoperative days 0 and 1 were monitored in patients.

**Results:** There was a trend decrease in the incidence of

postoperative hypocalcemia with patients reporting no associated symptoms following discharge in the group receiving the intervention compared to the control group.

**Conclusions:** The data highlights a potential role for the use of ICG in the prevention of postoperative hypocalcemia and associated symptoms, however further patient recruitment over the coming months is required.

**Keywords:** Head and neck surgery; hypocalcaemia; indocyanine green (ICG); parathyroid; thyroidectomy

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## Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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