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Para-ultra: Improving detection of parathyroid adenomas through on-the-day ultrasound

Background: Parathyroid adenomas are a common cause of primary hyperparathyroidism, and accurate preoperative localisation is crucial for successful surgical outcomes. Traditional Sestamibi scans can produce false positive results, leading to inaccurate detection and potential delays in diagnosis, leading to bilateral neck exploration, with long operative and hospital stays. Implementing on-the-day ultrasound can enhance the efficiency and accuracy of parathyroid adenoma detection, which aims to streamline the surgical workflow. It is therefore important to demonstrate that high levels of accuracy in pre-operative imaging are being achieved. **Targets:** Increase Detection Rate: Ultrasound is reported to have a sensitivity of 65-85% and sestamibi scintigraphy of 71-92%. The use of both techniques in combination increases sensitivity further to >90%. **Reduced intraoperative time:** By identifying adenomas prior to incision, surgeons can plan their approach more effectively, minimizing exploration time.

Methodology: Retrospectively review imaging and histological data on the detection rates of parathyroid adenomas using traditional imaging methods (e.g. sestamibi scans) on 50 patients electively scheduled for surgery with suspected parathyroid adenoma from 2021 to 2023 at Glan Clwyd Hospital, North Wales, UK. **Interventions:** On-the-Day Ultrasound. **Results:** Department-performed ultrasound by a radiologist correctly identified >95% of those with parathyroid adenoma. Out of the 52% of cases where sestamibi scan was not done or where parathyroid adenoma was difficult to localise, 27% had immediate pre-operative US, out of which 100% of the cases confirmed location of the parathyroid adenoma. >90% of cases with combined use of immediate pre-operative US had relatively reduced intraoperative time. **Conclusion:** By implementing same day US localisation, it enhances the detection of parathyroid adenomas and shortens hospital stays, providing strong support for the adoption of this technique by Head and Neck Surgeons.

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Biography

Rishika P Muraly is a junior doctor with a keen interest in Otolaryngology, driven by a desire to improve patients' quality of life through holistic care. My passion for ENT began at the age of 18, when I was diagnosed with Papillary Thyroid Carcinoma. Faced with rigorous treatments and the emotional weight of uncertainty, I found strength in my passion for medicine. I completed medical school with a renewed sense of purpose, inspired to connect to patients through my own experiences. I was incredibly fortunate to have been supported by Prof Birchall, well renowned Head & Neck surgeon in the UK throughout my recovery which fueled my interest in Surgery. I am currently working in ENT, aspiring to enter surgical training, with a keen interest in Otorhinolaryngology.

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