

Fluobeam autofluorescence as an alternative to frozen section histopathology or ioPTH to confirm successful excision of parathyroid in first time parathyroidectomy. A cost comparison and analysis of outcomes in a single institution.

MC Povey, OL Siaw, M Rafii, WJB Smellie

Department of Endocrine Surgery, Chelsea and Westminster Hospital, London, UK

Background

Surgeons usually require excision of parathyroid tissue or normalisation of blood parathyroid hormone (PTH) to confirm successful parathyroidectomy. Frozen section is expensive and time consuming; intra-operative PTH costs around £350 per case and takes an additional 20 minutes. We have used the Fluobeam® machine, which costs approximately £120 per case, to confirm excision of parathyroid tissue. This retrospective analysis aims to assess outcomes and cost-effectiveness of using the Fluobeam® compared to traditional methods.

Method

Over a period of 18 months, 60 parathyroidectomies were performed (57 primary, 3 redo). A postoperative specimen autofluorescent photo was taken in 57 surgeries, with a total of 66 glands excised across these cases. Positive Fluobeam® identification of parathyroid tissue by the surgeon was compared with post-operative biochemistry and histology results.

Results

The Fluobeam® was found to have a sensitivity, specificity and diagnostic accuracy of 98.36%, 80% and 96.97% respectively (TP n=60, FP n=1, TN n=4, FN n=1). In the 3 patients without post-operative photographs, all were cured. 100% (n=9) of patients without preoperative positive localisation were cured following surgery. Across the series a cure rate of 96.4% (55/57) was achieved. One patient had no pre-operative MIBI due to pregnancy, and an adenoma was removed, subsequently two further adenomas were removed in a further operation. The other does not certainly have PHPT.

Conclusion

Using pre-operative MIBI and the Fluobeam® device is a reliable tool for confirming successful excision of parathyroid tissue, with economic benefits over current techniques.

EUROPEAN MULTICENTRE STUDY ON PERIOPERATIVE CHARACTERISTICS AND SHORT-TERM MORBIDITY AFTER SURGERY FOR RENAL HYPERPARATHYROIDISM (EUROCRINE STUDY GROUP)

K Van Den Heede¹, N Brusselaers^{2,3}, M Almquist^{4,5}, P Riss⁶, M Raffaelli^{7,8}, S Van Slycke^{1,3}

¹General and Endocrine Surgery, OLV Hospital, Aalst, Belgium, ²Centre for Translational Microbiome Research Department of Microbiology, Karolinska Institute, Stockholm, Sweden, ³Global Health Institute, University of Antwerp, Antwerp, Belgium, ⁴Department of Surgery, Skåne University Hospital, Lund, Sweden, ⁵Department of Clinical Sciences, Lund University, Lund, Sweden, ⁶Department of General Surgery, University of Vienna, Vienna, Austria, ⁷U.O. Chirurgia Endocrina e Metabolica, Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome, Italy, ⁸Instituto di Semeiotica Chirurgica, Università Cattolica del Sacro Cuore, Rome, Italy

Background

Parathyroid surgery is an appropriate alternative for renal hyperparathyroidism (rHPT) in patients who fail medical therapy. Data of clearly defined cohorts on morbidity and short-term outcome remain scarce.

Method

Data from the EUROCRINE® database on all operations for rHPT between January 1st, 2015, and December 31st, 2021, were extracted to perform a multivariable logistic regression analysis to identify risk factors for postoperative complications, expressed as odds ratios (OR) and 95% confidence intervals. Subgroup analyses were conducted for both major surgical approaches (subtotal parathyroidectomy or total thyroidectomy with parathyroid transplantation), and for redo surgery and concomitant thyroid surgery.

Results

After excluding 324 patients, 1,165 patients were analysed, including 859 primary surgeries, 135 redo surgeries, and 171 parathyroid surgeries with concomitant (planned or unplanned) thyroid surgery. Postoperative complications were registered in 161 (13.8%) patients. Re-intervention for bleeding was necessary in 22 (2.6%) patients. Length of hospital stay was over a week in 108 (9.8%) patients and shorter in the re-operative parathyroidectomy group (52.0%). No risk factors for postoperative complications could be identified after multivariable analysis, nor in the overall nor in the subgroup analyses cohorts. Even in redo surgery setting or in case of concomitant thyroid surgery, RLN palsy (6.7 and 3.5%, respectively), revision surgery for bleeding (2.2 and 1.2%, respectively), and wound infection rates (0.7 vs 0.0%, respectively) remained low.

EXTRA-ADRENAL PARAGANGLIOMAS WITH SDHB MUTATIONS ARE ASSOCIATED WITH INCREASED RISK OF METASTASIS BUT NOT REDUCED SURVIVAL

C Lagaron-Manso¹, T Cvasciuc¹, E Dorrian¹, F Eatock¹, PC Johnston³, R Parameswaran²

¹Division of Endocrine Surgery, Royal Victoria Hospital, HSC, Belfast, UK, ²Division of Endocrine Surgery, National University Hospital, NUHS, Singapore, Republic of Singapore, ³Regional Center for Endocrinology and Diabetes, Royal Victoria Hospital, HSC, Belfast, UK

Background

Extra-adrenal paragangliomas (PGL) are rare tumours from the sympathetic or parasympathetic nervous system, often found in the para-aortic area. SDHB-associated PGLs have a higher risk of metastasis. This study aimed to evaluate prognostic factors for survival in patients with SDHB-associated PGL

Method

Retrospective cohort review of PGLs treated at 2 tertiary centres between 2010-2023. Patients were divided into two groups based on SDHB mutation. Differences in clinicopathological parameters were assessed using log-rank test and Cox-proportional hazard model. P-value <0.05 was considered significant. Data was obtained from online medical records.

Results

31 patients (15F:16M) with a mean age of 45.03(± SD17.45) years were diagnosed with extra-adrenal PGL. All except 1 underwent surgery, 87%(26/30) open and 13%(4) with laparoscopic approach. Mean tumour size was 4.9cm(± SD 2.8), located in the abdomen(84%), thorax(10%) and pelvis(6%). Most tumours were functional(24/31;77%) with 71%(22/32) presenting with hypertension. SDHB mutations were found in 15/31(48%) patients, VHL in 7%(2) and none in 36%(11).

Mean follow-up was 4.9 years and disease-specific mortality was 3%(1/31). Post-operative metastasis occurred in 19%(6/30), primarily in the skeletal system and lungs after an average of 18 months. SDHB mutation was seen in 83%(5/6) of metastatic cases, treated with radiotherapy, 131I-MIBG and chemotherapy. SDH mutation did not correlate with clinicopathological parameters.

Conclusion

SDHB mutation in PGL increases metastasis risk but does not affect survival

Comparison of whole blood and centrifuged blood PTH assay and optimisation of intraoperative PTH (IOPTH) protocol in surgery for primary hyperparathyroidism.

OM O'Connor¹, M Senbeto¹, **SP Balasubramanian**^{1,2}

¹Sheffield Endocrine Surgery Unit, Sheffield Teaching Hospitals, Sheffield, UK, ²School of Medicine and Biomedical Sciences, University of Sheffield, Sheffield, UK

Background

IOPTH during parathyroidectomy increases cure rates, reduces operative time, and reduces need for bilateral neck exploration (and its associated risks). Limitations include availability, cost and the possibility of false positive or false negative results. This study aims to evaluate a novel 'NBCL CONNECT' assay (a point of care test using whole blood compared to a laboratory assay using centrifuged blood) and determine the optimal IOPTH protocol.

Method

This is a cohort study of patients undergoing parathyroidectomy for PHPT with IOPTH over an 18-month period. Paired blood samples were taken pre-incision, pre-excision, 5- and 10-minutes post-excision of abnormal gland(s) and tested using NBCL and laboratory assays. Data on demographics, biochemistry and clinical outcomes, including cure rate, length of stay, re-admission within 30 days, and complications were recorded.

Results

Of 103 patients included, the cure rate was 95.1%. Overall, the laboratory assay has a greater diagnostic accuracy. For the NBCL assay, measuring PTH 10-minutes post-excision of gland(s) and applying a definition of >50% drop in PTH compared to the lower pre-excision value as the criteria for a 'satisfactory' drop gives the greatest diagnostic accuracy (PPV = 96.9%, NPV = 51.4%).

Conclusion

The NBCL CONNECT assay performed on whole blood is a good alternative IOPTH modality; but with the potential for false negative results. Comparison of 10-minute PTH level with the lower of the two pre-excision values may constitute the optimal protocol; but longer time intervals may improve diagnostic accuracy.

MANAGEMENT OF PRIMARY HYPERPARATHYROIDISM – PATIENTS’ PERSPECTIVE

R Mihai¹, L Glenister²

¹Endocrine Surgery, Oxford University Hospitals, Oxford, UK, ²Patient representative, Parathyroid, UK

Background

The high incidence of primary hyperparathyroidism leads to increasing needs for appropriate service delivery.

Method

Standardised online survey circulated to members of *Parathyroid UK* patient group explored their views about the hypothetical access to a Centre of Excellence.

Results

Replies were received from 383 patients, of whom a third were from outside the UK. 65% belong to one or more patients’ groups. The majority were cured after parathyroidectomy (38%), some had persistent PHPT (14%) or were waiting to have an operation (17%) and 12 identified as having normocalcaemic PHPT. Only 30% felt that their decisions about treatment options for PHPT were based on advice from doctors and most relied on information from patients’ groups (32%) and from the internet (27%).

In their views, a Centre of Excellence should be focused on excellent cure rate (40%), rapid diagnostic pathway (30%) and short waiting time (17%). The vast majority (94%) wished all PHPT patients would be cared for in Centres of Excellence. Most responders expected a minimum acceptable annual surgical workload of 50 cases (67%) or 20 cases (17%).

The improvements desired by patients included better information, a faster diagnostic pathway, the avoidance of watch-wait approach and the possibility to select the surgeon. Many voiced concerns about the difficulties of being referred from GP/endocrinology to a surgeon and about the difficult access within NHS to a surgeon with expertise in PHPT.

Conclusion

There is great interest from patients to engage with the process of improving care for PHPT. Better education, improved outcomes and increased engagement of professional societies with patient groups should be the starting point.

Establishing Transoral Thyroid and Parathyroid Endoscopic Vestibular Approach (TOETVA-TOEPVA) service in the United Kingdom National Health System: The safe road to success.

M Kiakou¹, E Ofo¹, U Ashfaq¹, D Tsironis², L Rangel³, G Oikonomou¹

¹ENT Department, St. George's Hospital, London, UK, ²General Surgery Department, St. George's Hospital, London, UK, ³ENT Department, Rio de Janeiro State University, Rio de Janeiro, Brazil

Background

Transoral endoscopic thyroidectomy vestibular approach (TOETVA) is utilizing a natural orifice to manipulate the thyroid, resulting in improved cosmetic outcomes, similar operative time to conventional approach and shorter recovery. We have developed an enhanced comprehensive framework firmly establishing the basis for the secure implementation of the TOETVA service.

Method

Built upon the latest literature introduced by TOETVA experts, our framework rests on three fundamental pillars.

The first pillar is training, which formed the cornerstone of our approach and included attendance in two cadaveric courses, 20 hours of intensive laparoscopic simulation training and a hands-on fellowship in Brazil.

The second pillar is collaboration. Active engagement of our anaesthetic and nursing colleagues as well as laparoscopic surgical team has been of paramount in fostering patients' safety. Moreover, working in close collaboration among colleagues in a national level and the unwavering support of hospital management have been instrumental elements.

The third pillar is meticulous preparation. Careful patient selection, dry sessions to safeguard understanding and predict potential pitfalls and guidance of a proctor for our first lists have also been essential components.

Results

Following carefully this framework, we managed to perform a full range of TOETVA and TOEPVA surgery including the UK's first cancer case, achieving an R0 resection, obviating the need for further treatment. The surgical time for our first cases was markedly less than the average time reported in the literature.