AB024. Intra-operative adjuncts in minimally invasive radio-guided parathyroidectomy at a specialist endocrine surgery centre

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Background: Primary hyperparathyroidism (PH) is a common cause of hypercalcaemia (0.3% of the population) and is characterized by high concentrations of calcium and parathyroid hormone (PTH). Minimally invasive radio-guided parathyroidectomy (MIRP) has been made possible due to advancements in pre-operative imaging i.e., sestamibi scans that allows localization of areas of parathyroid hyperactivity.

Methods: Due to the disagreement in the literature regarding which intra operative adjunct is best used in MIRP surgery to decrease recurrence, the rationale for this study is to examine and compare the performance of these adjuncts in consecutive patients attending Cork University Hospital for MIRP i.e., (I) intra operative PTH assay (IOPTHA); (II) Tc-99m radio-guidance using a gamma probe and the 20% rule; (III) frozen section analysis.

Results: A total of 45 MIRP procedures were carried out between 01/07/2018 and 30/10/2019. Thirty-five (77.8%) of the patients were female and the mean age was 62 years (range, 30–79 years). Final pathology showed that in 43 of the cases parathyroid tissue was correctly removed but thyroid tissue was identified for the other 2 cases. The 20% rule was positive in 43 out of the 45 cases and negative in 2 (sensitivity 100%, specificity 100%). A drop in intra-operative PTH assay greater than 50% was found in 41 out of the 45 cases but not in 4 (sensitivity 93.9%, specificity 100%). Frozen section was 100% concordant with final pathology (45/45). AUC analysis showed no significant difference in the performance of these tests (P=0.15) but it was around 1 for 20% rule and Frozen section.

Conclusions: When radio-guidance and frozen sections are added to IOPTHA levels, the success rate of parathyroidectomy is markedly improved. Using them together as in our study will greatly reduce the chances of recurrent hyperparathyroidism and surgery to a minimum.

Keywords: Intra-operative adjuncts; minimally invasive radio-guided parathyroidectomy (MIRP); primary hyperparathyroidism (PH)

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