

## AB094. 92. Intra-operative adjuncts in minimally invasive radio-guided parathyroidectomy at Cork University Hospital

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**Background:** Hyperparathyroidism is a common cause of hypercalcaemia and is characterised by high concentrations of parathyroid hormone (PTH). Primary hyperparathyroidism is estimated to affect approximately 0.3% of the population, typically between the ages of 40 and 65 years and is three times more likely to affect females than males. Surgery is the only definitive cure for hyperparathyroidism. Minimally invasive radio-guided parathyroidectomy (MIRP) has only been made possible due to advancements in pre-operative imaging, i.e., sestamibi scans that allows localisation of areas of parathyroid hyperactivity. This prospective study is aimed at comparing three modalities used to aid the identification of abnormal parathyroid tissue intra operatively in MIRP surgery: (I) intra operative PTH assay; (II) Tc-99m radioguidance using a gamma probe and the 20% rule; (III) Frozen section analysis.

**Methods:** Due to the disagreement in the literature regarding which intra operative adjunct should be used during MIRP surgery, the rationale for this study is to examine and compare the performance of these adjuncts in patients attending Cork University Hospital i.e., intra operative PTH assay, Tc-99m radioguidance using a gamma probe (20% rule) and Frozen section analysis.

**Results:** We have preliminary data for 16 MIRP procedures carried out between 05/07/2018 and 15/11/2018. Thirteen (81%) of the patients were female and the mean age was 59 (range 30–79) years. Final pathology showed that in 14 of the cases parathyroid tissue was correctly removed but thyroid tissue was identified for the other 2 cases. The 20% rule was positive in 13 out of the 16 cases and negative in 3 (sensitivity 91.7%, specificity 100%). A drop in intra-operative PTH assay greater than 50% was found in 13 out of the 16 cases but not in 3 (sensitivity 91.7%, specificity 100%). Frozen section was 100% concordant with final pathology.

**Conclusions:** The above three intra operative adjuncts have high sensitivity and specificity in picking up the correct parathyroid adenoma in the MIRP surgery. Using them together as in our study will greatly reduce the chances of missing an adenoma.

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

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