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Optimal Use of Preoperative Imaging in Primary Hyperparathyroidism

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To the Editor,

We read with interest the recently published paper 'Factors Associated With Discordance Between Preoperative Parathyroid 4-Dimensional Computed Tomographic Scans and Intraoperative Findings During Parathyroidectomy'[1].

In this study, the authors reported a discordance rate of 29.9% using 4D-CT as the sole pre-operative imaging modality in primary hyperparathyroidism (25% if surgeon-led ultrasound (US) and 4D-CT were combined). In addition, they conducted a thorough analysis of putative factors contributing to this inaccuracy.

We feel that this discordance rate is high compared with other pre-operative imaging strategies and have previously published data demonstrating a 91% accuracy in localizing parathyroid adenomata using a combination of specialist US and ^{99m}Technetium labelled Sestamibi SPECT-CT[2]. The authors refer to the superior performance of 4D-CT compared to US and Sestamibi SPECT but do not make reference to SPECT-CT. A recent review concurs with our approach and posits a similar accuracy of Sestamibi SPECT-CT and 4D-CT but with less radiation burden[3]. Whilst there remains a lack of consensus in the literature of the objective superiority of one technique over another the combination of functional and structural imaging afforded by SPECT-CT offers distinct advantages in reducing discordant results. Other centres have shown that using 4D-CT as a second-line problem solving technique, if US and SPECT-CT show localisation discordance, is more cost-effective than any other technique[4]. Our experience over the past decade of first-line imaging using Sestamibi SPECT-CT combined with specialist US has shown this to be a highly accurate approach in localizing parathyroid adenomata. It is therefore felt that 4D-CT might best be reserved for use as a second line imaging[5].

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