



Letters and Comments

Contributors to this section are asked to make their comments brief and to the point. Letters should comply with the Notice printed on the inside back cover. Tables and figures should only be included if absolutely essential and no more than five references should be given. The Editor reserves the right to shorten letters and to subedit contributions to ensure clarity.

Response to paper by BJ Ammori et al:

Ultrasound-guided unilateral neck exploration for sporadic primary hyperparathyroidism: is it worthwhile?

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I would take issue with the authors in one of their opening statements that 'the role of these (localisation) tests before initial neck exploration for PHP remains controversial'. I think it has been quite clearly demonstrated in recent literature that there is no place for localisation procedures in the routine management of patients with primary hyperparathyroidism and to paraphrase Fuller Albright of 50 years ago, the only localisation you require is 'the localisation of a good parathyroid surgeon'.¹ We have stated clearly 'no localisation is warranted before first time exploration for hyperparathyroidism' in a study looking at the use of MRI and isotope localisation methods before first time exploration.² We had earlier shown that ultrasonography was of no value before first time neck exploration.³ It is said that the sestamibi isotope scan is the gold standard localisation if one is to be used at all, rather than localisation by any other means.⁴

The hypothesis or proposition that unilateral neck exploration is of benefit on the basis of reduction in complication rate is flawed since no study has demonstrated this effect. The secondary argument over the unsecured compartment also holds no credence. If first time surgery is successful then there is no need to return to the neck at all.

The analysis of the accuracy of ultrasonography is not particularly incisive. The analysis merely looks at lateralisation and it is sobering to think that tossing a coin would successfully identify the correct side of an

adenoma in 25% of patients! Most other studies have used the more critical analysis of quadrant analysis for ultrasonography.³

Was the decision to undertake unilateral versus bilateral exploration a randomised decision? Were the patients informed of the two strategies? The paper makes no mention of any ethical approval.

I presume the authors meant to say in the Results section on the second line of page 435 that the finding was of four gland hyperplasia rather than four patient hyperplasia!

Which statistical methods were used to compare the two treatment methods? If the study was not truly randomised, is the application of statistical methods valid?

It is disappointing that the 90 patients who are mentioned in the abstract who underwent unilateral exploration with no localisation studies get no further mention in the full text of the paper.

How can an essential prerequisite for the use of scan guided unilateral exploration be 'a low incidence of multiglandular disease'? As far as I know, there are no biochemical markers or localisation tests that identify this sub-group of patients accurately pre-operatively. If we knew that there were no patients with multiglandular disease, it might be worth the time and effort looking at methods of achieving unilateral exploration!

The number of patients in the study is low and the number of patients operated upon by a single surgeon is diluted by the presence of four endocrine surgeons in Bradford. There is more evidence accruing that efficient and effective endocrine surgery relates to volumes of patients handled.⁵

I wonder if the authors have any definitive conclusion or answer to the question they pose in their title? I was left with 'a feeling' that there is no place for unilateral neck exploration. Perhaps the authors should state this categorically.

References

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Authors' reply

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We would like to thank Professor Farndon for his comments on our paper.¹ A close look at the recent literature^{2,3} and at surgeons' practices, even within a single institute,¹ clearly reveals the continued controversy over the role of pre-operative localisation to guide a selective unilateral exploration of the neck in patients with sporadic primary hyperparathyroidism.

Ultrasonography, an operator-dependent procedure, produced a highly accurate localisation (90–92%) in the hands of an experienced and interested radiologist,^{1,4} and is facilitated by the use of a high frequency (7.5–10 MHz) transducer. High success rates (93–97%) were thus achieved with the selective unilateral approach,^{1,3} and were comparable to those obtained with the bilateral approach.⁵ The ^{99m}Tc-MIBI scintigraphy using the SPECT technique appears to be a promising alternative for the localisation of even small parathyroid adenomas,⁶ but requires further clinical and economic evaluation.

Although bilateral neck exploration can be performed with low morbidity, unilateral exploration is likely to result in lower complication rate as Vogel *et al.* have reported.⁷ Several authors, including the commentator,² analysed the accuracy of ultrasonography based on the side of the neck rather than the quadrant to which the gland was localised. This is a clinically oriented analysis; whether the pathological gland is located in the upper or lower quadrant of one side of

the neck bears no critical relevance to the surgeon who is exploring that side.

The decision to undertake unilateral versus bilateral exploration was based on each surgeon's policy (see the Materials and Methods section),¹ and was not a randomised one.

We apologise for the misprint in the Results section on the second line of page 435, which was overlooked; the original manuscript read four-gland hyperplasia rather than four-patient hyperplasia.

The chi-square test was employed to compare the success rates of the unilateral and bilateral approaches. One, however, does not need statistics to recognise that there was no difference in the cure rate between the two approaches (93% versus 97%).

Nine of 72 patients did not receive pre-operative localisation studies. Hence, they underwent **bilateral** neck exploration (see the Materials and Methods section),¹ which was successful in all. The figure in the abstract ($n = 90$) is incorrect, and should read ($n = 9$).

Whilst the complication rates from **thyroidectomy** were significantly related to the volume of patients handled by each surgeon,⁸ our experience with **parathyroidectomy** tells a different tale. Despite the relatively low number of patients per surgeon per year, the high success rate of parathyroidectomy (overall 95%) and the very low morbidity (4%) in our series argue against surgeon volume as a critical determinant of clinical outcome.

Our experience, as well as that of others,⁹ suggests that contralateral adenoma(s) are invariably missed on ultrasonography. A scan-directed unilateral exploration in such patients is, therefore, likely to result in failure. Since the incidence of multiglandular disease (MGD) varies widely (2–48%) between reports, we suggest that surgeons who wish to embark upon an ultrasound-directed unilateral approach should determine the incidence of MGD in the population they serve by reviewing prior local experience with parathyroidectomy.

A low incidence of MGD and the presence of an experienced and interested radiologist to whom a high-frequency scanner is made available are essential requirements to the success of the selective ultrasound-guided unilateral approach. Undoubtedly, however, 'the localisation of a good parathyroid surgeon' is all that is required to a successful bilateral approach; a paraphrase by Fuller Albright that we fully endorsed in the closing statement of our paper here discussed.

References

1. Ammori BJ, Madam M, Gopichandran TD, Price JJ, Whittaker M, Ausobsky JR *et al.* Ultrasound-guided unilateral neck exploration for sporadic primary hyperparathyroidism: is it worthwhile? *Ann R Coll Surg Engl* 1998; **80**: 433–7.