

Minimally invasive parathyroidectomy: Is a concordant result of at least two pre-operative localization modalities necessary?



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Introduction and objectives:

The majority of cases (85%) of sporadic primary hyperparathyroidism (SPHT) results from a single gland adenoma. In these patients, minimally invasive parathyroidectomy (MIP), would be curative.

It is recommend that two pre-operative localization exams show a positive and concordant result to propose MIP. The authors aim to compare the results of MIP with one positive pre-operative localization technique versus two positive and concordant pre-operative imaging exams.

Methods:

We performed a retrospective analyses of all the adults who underwent MIP, in our institution, between January 1st of 2015 and December 31th of 2019. SPSS Statistics23® was used for statistical analysis.

Results:

There were a total of 45 patients, 40 (88.9%) female and 5 (11.1%) male and the mean age was 65 years (+/-13.1) (see figure 1). Symptoms and end-organ damage at diagnosis can be seen in figure 2. Performed pre-operative localization exams and their results can be seen in table 1.

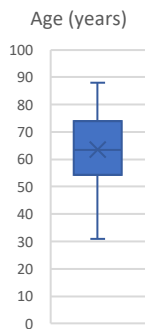


Figure 1

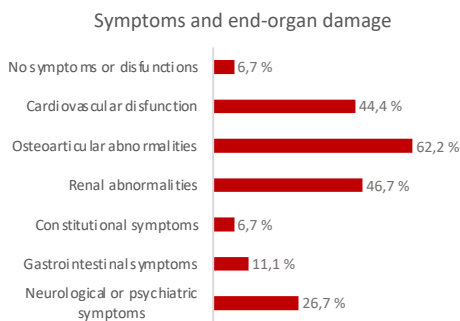


Figure 2

Pre-operative localization exam	Positive	Inconclusive	Not performed
Sesta-MIBI scintigraphy	43 (95.6%)	2 (4.4%)	0 (0%)
Ultrasound	33 (73.3%)	8 (17.8%)	4 (8.9%)
Computed tomography (CT)	4 (8.9%)	0 (0%)	41 (91.1%)

Table 1

Concordance of two pre-operative localization exams was obtained in 33 cases (73.3%); in 32 (71,1%) between sesta-MIBI scintigraphy and ultrasound and in 1 (2.2%) between sesta-MIBI scintigraphy and CT scan. 12 patients (26.7) had only one positive pre-operative localization exam: 10 (22.2%) a sesta-MIBI scintigraphy, 1 (2.2%) an ultrasound and 1 (2.2%) a CT scan.

Intra-operative parathormone (PTH) measurements were performed before skin incision and 15 minutes after gland excision. 2 (4.4%) of the 5 patients (11.1%) with a PTH level fall < 50% had recurrent or persistent SHPT as did 2 (4.4%) of the 40 patients (88.8%) with a PTH level fall > 50%. A relationship between a PTH level fall < 50% and recurrence or persistency of SPHT was observed but statistical significance was not obtained (Fisher test: p = 0.055).

The rate of recurrence or persistence was 9.1% in the group with two concordant pre-operative localization exams and 8.3% in the group with only one positive pre-operative localization exam. No relationship was observed between a single positive pre-operative localization exam and recurrence or persistence of SPHT (Fisher test: p=1).

Conclusions:

A single positive pre-operative localization technique may be sufficient to perform MIP, if combine with intra-operative PTH measurements.