

PEER-REVIEWER 1

SPECIFIC COMMENTS TO AUTHORS

1. Is there any pregnant patient in this group?

No, there is no pregnant patient in this group.

2. How to help those patients who were asymptomatic diagnose PA?

Patients with asymptomatic parathyroid adenomas, which account for a proportion of parathyroid adenomas, can be diagnosed by laboratory tests and imaging, although there are no typical clinical signs of skeletal, stone, abdominal and psychiatric manifestations. A mild elevation of blood calcium and PTH with a mild decrease of blood phosphorus can be detected by laboratory tests. Diagnosis is usually made by imaging tests such as ultrasound, Tc-99m MIBI SPECT/CT, CT scan with contrast, and MRI with contrast, with one or more of these tests revealing a parathyroid gland occupancy.

PEER-REVIEWER 2

SPECIFIC COMMENTS TO AUTHORS

1. title Respectfully I have a concern about the title. After reading the manuscript I think you made a description of the outcome of surgical treatment of PA in a cohort of 140 patients. You could consider it.

We have revised the title of the manuscript to: Analysis of the successful clinical treatment of 140 patients with parathyroid adenoma: a retrospective study.

2. Abstract Its ok.

3. Key words No concern.

4. Background

-Add which is the rate (in %) if failures in surgery for PA.

We have added relevant content to the manuscript: According to literature reports, the failure rate of PA surgery is about 5-15%.^[1,2]

-Add which are the current diagnostic test for PA and their diagnostic performance in terms of sensitivity, specificity and refer which is the best tool; please also review the importance of the biochemical test and which are the most relevant for the diagnostic approach of PA.

We have added relevant content to the manuscript: The most critical point in the diagnostic process of PA is the biochemical findings of elevated PTH accompanied by elevated blood calcium. Current imaging methods for PA include ultrasound and Tc99 MIBI-SPECT as well as CT and MRI, and the literatures report that Tc99 MIBI-SPECT has the highest positive predictive value of the available imaging techniques, and some prefer this as the localizing procedure of choice for initial surgery.^[3-6]

-It is not clear which is the purpose of your review. Certainly you will describe the characteristics of a PA cohort, but what for? Is the focus of your review to show the surgical success rate of your cohort and compare it with the published data?.

We have added relevant content to the manuscript: The surgical success rate for parathyroid adenoma cases in our study was high, 98.6%, which is a satisfactory result. Therefore we are incredibly happy to share our work.

5. Results The results reflect the characteristics of the studied cohort and are aligned to the descriptive purpose of the study.

-The lesion position paragraph could be improved if you add a correlation between the findings in the different diagnostic tools and the lesions position.

We have added relevant content to the manuscript: And the correlation between the findings in the different diagnostic tools and the lesions position was shown in Table 5.

■ **Table 5. Distribution of location in 140 patients with PA and the correlation between the findings in the different diagnostic tools and the lesions position**

Position	Number of patients	Ultrasound	Tc-99m MIBI SPECT/CT	CT scan with contrast	MRI with contrast	Ultrasound+Tc-99m MIBI SPECT/CT
Upper left PA	19 cases (13.6%)	18/19	15/19	6/7	5/5	18/19
Lower left PA	51 cases (36.4%)	45/51	50/51	14/16	5/6	50/51
Upper right PA	13 cases (9.3%)	12/13	11/13	4/5	4/4	12/13
Lower right PA	45 cases (32.1%)	40/45	44/45	12/14	4/5	44/45
Upper mediastinal ectopic PA	3 cases (2.1%)	0/3	3/3	2/3	2/3	3/3
Intrathyroidal ectopic PA	1 case (0.7%)	1/1	1/1	0/1	0/1	1/1
Upper left PA combined with upper right PA	6 cases (4.3%)	3/6	5/6	3/6	3/4	5/6
Upper left PA combined with lower left PA	1 case (0.7%)	1/1	0/1	0/1	0/1	1/1
Upper right PA combined with lower right PA	1 case (0.7%)	0/1	1/1	0/1	0/1	1/1

-Please describe the diagnostic performance of the different imaging tools detecting ectopic PAs.

We have added relevant content to the manuscript: Among the four cases of ectopic parathyroid adenoma, one case was successfully preoperative localized by ultrasound, four cases by Tc-99m MIBI SPECT/CT, and two cases each by CT scan with contrast and MRI with contrast.

6.Discussion

-Please start the discussion part with the paragraph that summarize your most relevant results.

We have added relevant content to the manuscript: We analyzed the clinical records of 140 patients with parathyroid adenoma. The overall success rate of surgery in this group of cases was 98.6%, and the treatment outcome was satisfactory.

-Because preoperative analysis is crucial for an accurate diagnostic approach, use your results to be compared with the written evidence and give a recommendation for studying PAs in a cost/effective setting; it is not correct to suggest to use the complete armamentarium of imaging tools.

We have revised the relevant content in the manuscript: Previous literatures had reported that the use of Tc-99m MIBI SPECT/CT is recommended as the primary method for preoperative localization of parathyroid adenomas.^[3-6] With this study, our recommendation is to use the ultrasound+Tc-99m MIBI SPECT/CT examination method for preoperative localization with a high positive predictive value. For patients who cannot be localized preoperatively using the ultrasound+Tc-99m MIBI SPECT/CT method, we suggest that further investigations can be performed using CT scan with contrast and MRI with contrast.

-Please add some concepts about new perspectives regarding to Choline-PET for undetected PA with the regular imaging tools.

We have added relevant content to the manuscript: Literatures [7-11] report that preoperative Choline PET/CT has a high sensitivity and positive predictive value for parathyroid adenoma detection in patients with primary hyperparathyroidism and negative or inconclusive conventional imaging results. Bilateral cervical exploration could be avoided in the majority of patients. But we have no experience with the efficiency of this test because it has not been performed in our institution.

-Table 3. The right term to define the results is positive detection rate; the term sensitivity implies the measure of the variables in a 2x2 table (true positives, false negatives etc)

We have revised the relevant content in Table 3:

Table 3. Positive detection rate of imaging examination in 140 patients with PA

Imaging methods	Number of inspection cases	Exact number of patients	Positive detection rate
Ultrasound	140	120	85.7%
Tc-99m MIBI	140	130	92.9%
SPECT/CT			
CT scan with contrast	54	41	75.9%
MRI with contrast	30	23	76.7%
Ultrasound+Tc-99m	140	135	96.4%
MIBI SPECT/CT			

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- 3 Mihai R, Simon D, Hellman P. Imaging for primary hyperparathyroidism--an evidence-based analysis. *Langenbecks Arch Surg* 2009; **394**: 765-784. [PMID: 19590890 DOI: 10.1007/s00423-009-0534-4]
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- 5 Eslamy HK, Ziessman HA. Parathyroid scintigraphy in patients with primary hyperparathyroidism: 99mTc sestamibi SPECT and SPECT/CT. *Radiographics* 2008; **28**: 1461-1476. [PMID: 18794320 DOI: 10.1148/rg.285075055]
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