

Studies Related to the Management of Hyperparathyroidism – Surgery Versus no Surgery

(From references provided by Dr. Garcia)

May. 2011

18. Neuropsychological Features in Primary Hyperparathyroidism: A Prospective Study (2009)

1. [Marcella D. Walker](#),
2. [Donald J. McMahon](#),
3. [William B. Inabnet](#),
4. [Ronald M. Lazar](#),
5. [Ijeoma Brown](#),
6. [Susan Vardy](#),
7. [Felicia Cosman](#) and
8. [Shonni J. Silverberg](#)

Results: At baseline, women with PHPT had significantly higher symptom scores for depression and anxiety than controls and worse performance on tests of verbal memory (LM and SRT) and nonverbal abstraction (BCT). Depressive symptoms, nonverbal abstraction, and some aspects of verbal memory (LM) improved after parathyroidectomy to the extent that scores in these domains were no longer different from controls. Baseline differences and postoperative improvement in cognitive measures were independent of anxiety and depressive symptoms and were not linearly associated with serum levels of calcium or PTH.

Conclusions: Mild PHPT is associated with cognitive features affecting verbal memory and nonverbal abstraction that improve after parathyroidectomy.

19. Parathyroidectomy in Asymptomatic Primary Hyperparathyroidism: Improves “Bones” but not “Psychic Moans” (2007)

1. [Marcella D. Walker](#) and
2. [Shonni J. Silverberg](#)

Although the preliminary results of this study suggest that impaired QOL and psychiatric symptoms are present in mild primary hyperparathyroidism, they do not demonstrate any clear benefit of surgery. Given these findings, it seems prudent not to add the presence of impaired QOL or psychiatric symptoms to the list of criteria for surgery at this time.

20. Randomized trial of parathyroidectomy in mild asymptomatic primary hyperparathyroidism: patient description and effects on the SF-36 health survey. (2000)

[Talpos GB](#), [Bone HG 3rd](#), [Kleerekoper M](#), [Phillips ER](#), [Alam M](#), [Honasoge M](#), [Divine GW](#), [Rao DS](#).

CONCLUSIONS:

Improved function [on SF-36 Health Survey] is seen after parathyroidectomy when compared with patients who did not undergo operation. This study supports surgical management of mild primary hyperparathyroidism at the time of diagnosis because many patients have reversible nonclassic symptoms of the disease.

21. Medical observation, compared with parathyroidectomy, for asymptomatic primary hyperparathyroidism: a prospective, randomized trial. (2007)

[Bollerslev J](#), [Jansson S](#), [Møllerup CL](#), [Nordenström J](#), [Lundgren E](#), [Tørring O](#), [Varhaug JE](#), [Baranowski M](#), [Aanderud S](#), [Franco C](#), [Freyschuss B](#), [Isaksen GA](#), [Ueland T](#), [Rosen T](#).

CONCLUSIONS:

Asymptomatic patients with mild pHPT have decreased QoL and more psychological symptoms than normal controls. No benefit of operative treatment, compared with medical observation, was found on these measures so far.

22. Surgery or surveillance for mild asymptomatic primary hyperparathyroidism: a prospective, randomized clinical trial. (2007)

[Ambrogini E](#), [Cetani F](#), [Cianferotti L](#), [Vignali E](#), [Banti C](#), [Viccica G](#), [Oppo A](#), [Miccoli P](#), [Berti P](#), [Bilezikian JP](#), [Pinchera A](#), [Marcocci C](#).

CONCLUSIONS:

In patients with mild asymptomatic PHPT, successful PTx is followed by an improvement in BMD and quality of life. Most patients followed without surgery did not show evidence of progression.

[J Clin Endocrinol Metab](#). 2009 Feb;94(2):351-65.

23. Randomized Controlled Clinical Trial of Surgery Versus No Surgery in Patients with Mild Asymptomatic Primary Hyperparathyroidism (2004)

1. [D. Sudhaker Rao](#),
2. [Evelyn R. Phillips](#),
3. [George W. Divine](#) and
4. [Gary B. Talpos](#)

Despite the mild disease and asymptomatic status, there appeared to be measurable effects of surgery on BMD, quality of life, and psychological function. With the advent of minimally invasive surgery, a more liberal approach to surgery is recommended, but these potential small benefits of parathyroidectomy must be tempered by the possibility of unmet patient expectations and/or complications from surgery...

[J Clin Endocrinol Metab](#). 2007 May;92(5):1687-92. Epub 2007 Feb 6.

24. Risk of renal stone events in primary hyperparathyroidism before and after parathyroid surgery: controlled retrospective follow up study. 2002

[Mollerup CL](#), [Vestergaard P](#), [Frøkjaer VG](#), [Mosekilde L](#), [Christiansen P](#), [Blichert-Toft M](#).

RESULTS:

Relative risk of a stone episode was 40 (95% confidence interval 31 to 53) before surgery and 16 (12 to 23) after surgery. Risk was increased 10 years before surgery, and became normal more than 10 years after surgery. Stone-free survival 20 years after surgery was 90.4% in patients and 98.7% in controls (risk difference 8.3%, 4.8% to 11.7%). Patients with preoperative stones had 27 times the risk of postoperative stone incidents than controls. Before surgery, males had more stone episodes than females and younger patients had more stone episodes than older patients. Neither parathyroid pathology, weight of removed tissue, plasma calcium levels, nor skeletal pathology (fractures) influenced the risk of renal stones. After surgery, younger age, preoperative stones and ureteral strictures were significant risk factors for stones.

CONCLUSIONS:

The risk of renal stones is increased in primary hyperparathyroidism and decreases after surgery. The risk profile is normal 10 years after surgery. Preoperative stone events increase the risk of postoperative stones. Stone formers and non-stone formers had the same risk of skeletal complications.

25. A 10-year prospective study of primary hyperparathyroidism with or without parathyroid surgery. (1999)

Silverberg SJ, Shane E, Jacobs TP, Siris E, Bilezikian JP

N Engl J Med. 1999;341(17):1249.

CONCLUSIONS: In patients with primary hyperparathyroidism, parathyroidectomy results in the normalization of biochemical values and increased bone mineral density. Most asymptomatic patients who did not undergo surgery did not have progression of disease, but approximately one quarter of them did have some progression.

- [June 2009](#)
- Walker et al. 94 (6): 1951
- Endocrine Care

26. Presentation of asymptomatic primary hyperparathyroidism: proceedings of the third international workshop. (2009)

[Silverberg SJ](#), [Lewiecki EM](#), [Mosekilde L](#), [Peacock M](#), [Rubin MR](#).

CONCLUSIONS:

- 1) Data on the extent and nature of cardiovascular involvement in those with mild disease are too limited to provide a complete picture. 2) Patients with mild PHPT have neuropsychological complaints. Although some symptoms may improve with surgery, available data remain inconsistent on their precise nature and reversibility. 3) Surgery leads to long-term gains in spine, hip, and radius bone mineral density (BMD). Because some patients have early disease progression and others lose BMD after 8-10 yr, regular monitoring (serum calcium and three-site BMD) is essential in those followed without surgery. Patients may present with normocalcemic PHPT (normal serum calcium with elevated PTH concentrations; no secondary cause for hyperparathyroidism). Data on the incidence and natural history of this phenotype are limited. 4) In the absence of kidney stones, data do not support the use of marked hypercalciuria (>10 mmol/d or 400 mg/d) as an indication for surgery for patients. 5) Patients with bone density T-score -2.5 or less at the lumbar spine, hip, or distal one third radius should have surgery.

27. Cardiovascular events before and after surgery for primary hyperparathyroidism. (2003)

[Vestergaard P](#), [Mollerup CL](#), [Frøkjaer VG](#), [Christiansen P](#), [Blichert-Toft M](#), [Mosekilde L](#).

We concluded that there was an increase in acute MI up to 10 years prior to surgery. The risk of MI decreased to a normal level after surgery, which may be important for preventing cardiovascular disease in patients with primary hyperparathyroidism.