

## EXPEIENCE OF PARATHYROIDECTOMY FOR MORE THAN 3000 PATIENTS WITH ADVANCED SECONDARY HYPERPARATHYROIDISM IN A SINGLE CENTER

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### Introduction

Secondary hyperparathyroidism (SHPT) due to chronic kidney disease (CKD) is one of serious complications for continuous hemodialysis (HD) patients. Surgical requirement, parathyroidectomy (PTx), might be influenced by medical treatment. We evaluated these issues in patients who underwent PTx for advanced SHPT due to CKD in our huge series.

### Materials and Methods

Between July 1973 and June 2013, total 3000 patients underwent PTx for advanced SHPT or THPT in our department. The period was divided into 5 eras based on medical treatment. The patient's profiles, laboratory findings and surgical outcomes were evaluated. In Era 1, 2 and 3 bone disease and symptoms were major factors for surgical indications. In Era 4 and 5, size of parathyroid glands and to prevent ectopic calcification were significant factors to decide PTx.

### Conclusions

Requirement of PTx for SHPT was clearly influenced by medical treatment. PTx for HD patients with advanced SHPT was safe and effective treatment and should be performed before irreversible events are progressive. Total PTx with forearm autograft could be suitable procedure for especially patients who have to continue HD for long-term.

### Results

1, Between July 1973 and June 2013 we performed PTx totally in 3000 patients with SHPT or THPT.

2, Annual number of PTx for SHPT due to CKD in our department gradually increased until 2007 and then decreased dramatically.

3, Ratio of female/male was almost 1 in each era.

4, Age at PTx became gradually elder in Era 1,2,3 and then that was stable in Era 4 and 5.

5, Duration between initiation of HD and PTx prolonged in Era 1,2,3 and then stable in Era 4 and 5.

6, At PTx serum Ca and P levels were stable in each era however, PTH and ALP levels gradually decreased in Era 3,4 and 5.

7, Total PTx with forearm autograft was performed in all cases except for initial 19 cases who underwent subtotal PTx.

8, In 4.9% patients fewer than 4 glands were found, in 77.8% 4 glands removed and in 17.6% patients supernumerary glands were detected at the initial operation.

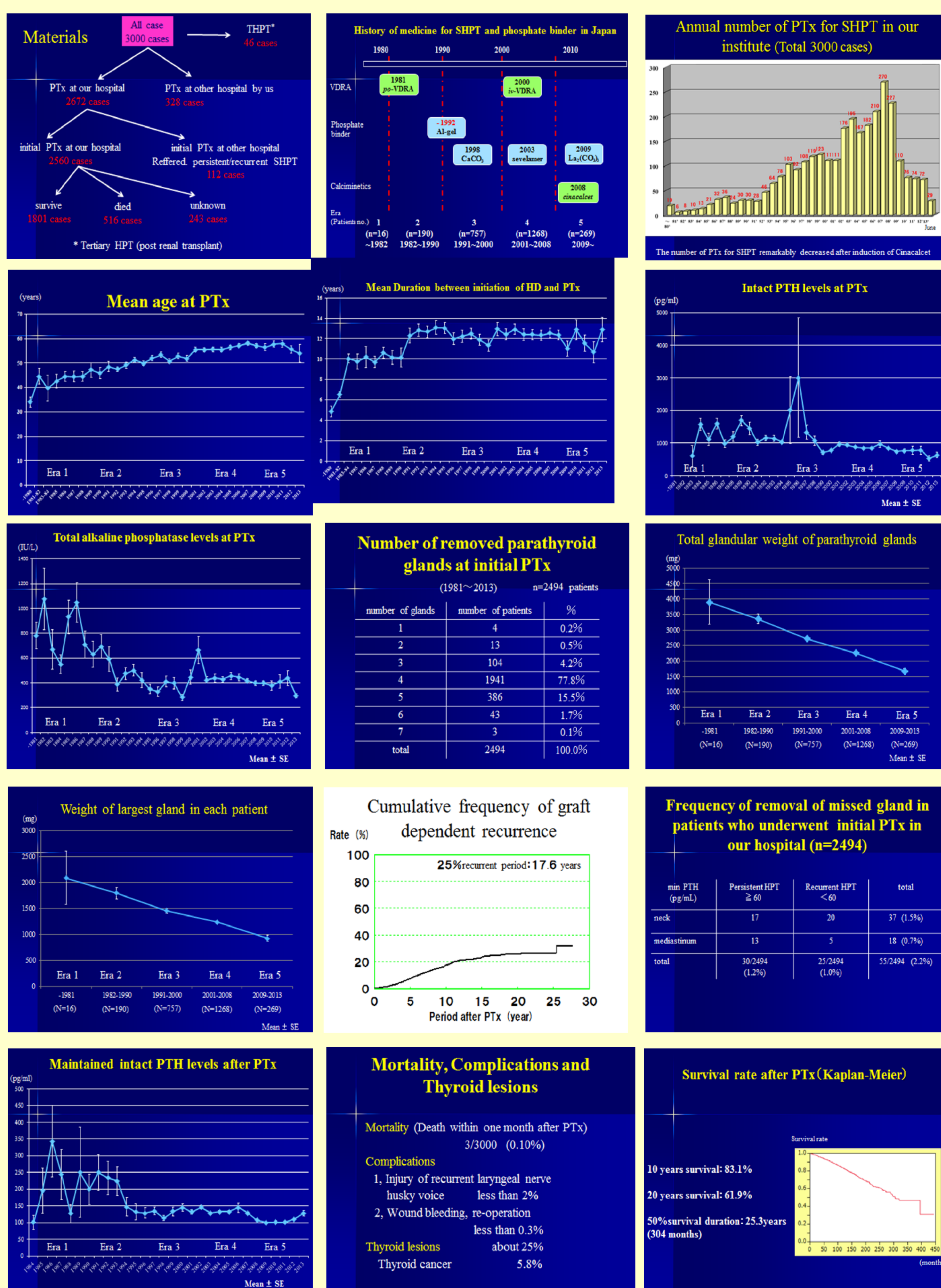
9, Total glandular weight and weight of the largest gland gradually decreased during all eras.

10, After PTx, serum Ca,P and PTH levels were over all controlled within target ranges during all eras.

11, 10.6 % patients required removal of autograft for graft dependent recurrent HPT and in 2.2 % patients resection of missed gland in neck/mediastinum for persistent/recurrent HPT was performed.

12, Only three patients died within one month after PTx and complications, ie injury of recurrent laryngeal nerve and wound hemorrhage were negligible.

13, 10 years and 20 years patient's survivals after PTx were 83.1% and 61.9%.



### Operative procedures

- 1) Subtotal PTx : initial 19 cases in Era 1
- 2) Total PTx with forearm autograft in muscle : other all patients
- 3) Preoperative image diagnosis (US,CT, MIBI scintigram) has been routinely done.
- 4) Removal of thymic tongues from neck incision routinely has been performed.
- 5) From May 2010 intraoperative PTH monitoring and intraoperative neuromonitoring have been performed.

