

Changing Trends in the Surgical Management of Primary Hyperparathyroidism

연세대학교 의과대학 외과학교실
박 정 수

Automated serum calcium measurements were associated with a dramatic rise in incidence of primary hyperparathyroidism in the early 1970s, but a slight decline has been noticed since the early 1990s.

Since Felix Mandl performed the first successful parathyroidectomy for primary hyperparathyroidism (PHPT) in 1925, more than 95% of patients with PHPT were treated successfully with the conventional bilateral cervical exploration without preoperative imaging studies.

The advantage of conventional approach is that it allows excellent surgical fields of all 4 glands as well as access to abnormal location of parathyroid with very low morbidity. The disadvantages include ① big scar ② longer operating time ③ higher operative morbidity and ④ longer hospital stay.

Over the past decade, the conventional approach has been replaced with unilateral exploration or minimally invasive approaches. This is based on the development of preoperative imaging studies like technetium Tc99m Sestamibi scan (MIBI) and high resolution ultrasonography (US), and intraoperative validation tests such as gamma probe or intraoperative quick PTH assay (qPTH).

The surgical techniques used for minimally invasive parathyroid surgery (MIP) today are ① endoscopic ② video-assisted ③ radio-guided and ④ focused parathyroidectomy (FP).

Advantages of minimally invasive approaches include ① short incision length ② short operation time ③ short hospital stay ④ less operation trauma ⑤ less complications and ⑥ better cosmetic results, whereas disadvantage is possibility of missing multiglandular disease. To avoid this problem, intraoperative validation tests are recommended.

However, recently many endocrine surgeons have tried to use a focused approach without use of the validation tests

with high cure rates.

In a recent international survey of member of the International Association of Endocrine Surgeons (IAES), a consensus on techniques seems to have evolved, with 92% of surgeons who undertook MIP using the focused approach, either through a central or lateral incision.

At the department of surgery in YUMC, between Jan. 2002 and Mar. 2006, 62 consecutive cases (84.9%) from all patients (53 women, 20 men; mean age 50 years) with PHPT (n=73) were treated with the FP using small, lateral incision placed directly over the lesion sites as located.

The mean length of incision was 2.1cm (1.2-4.5) and mean operating time was 21 minutes (15-60).

Of the 62 patients, 60 (96.8%) patients successfully underwent FP. Two cases were converted to conventional approach. Of these two patients, one had the discrepancy in tumor location between the imaging studies and real anatomical location, and the other had double adenomas requiring re-exploration.

The levels of serum calcium, phosphates, and iPTH became normalized after FP in all patients except one with double adenoma. There were no major complications. Only one patient developed transient vocal cord palsy. Mean hospital stay was 2 days (0-3). All of the patients were satisfied with cosmetic results.

In conclusion, ① The advantages in preoperative imaging studies and intraoperative validation tests make parathyroidectomy simpler and faster than in the past. ② A dramatic and sustained shift to MIP has occurred and become mainstream in the surgical treatment of PHPT. ③ Only minority patient-group with multiglandular disease or patients with coexisting multinodular goiter or thyroid cancer still require the conventional bilateral approach.