



1998 4 2000 3 24  
 가 144  
 147  
 가 30 (20.8%) , 가 114 (79.2%)  
 4 , 45 ( , 10 72 )  
 (Fig. 1). 96 (66.7%),  
 48 (33.3%)  
 96.9% 가  
 (Table 1).

가  
 8 , 5 , 3

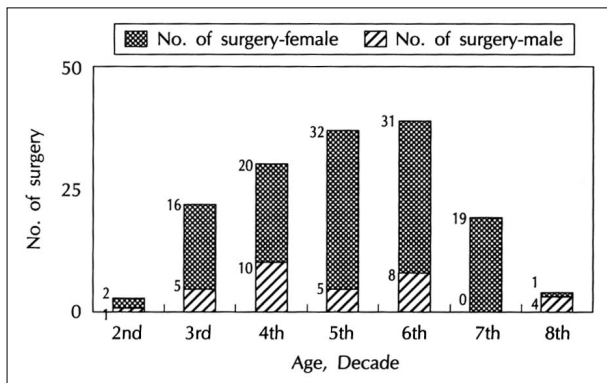


Fig. 1. Age and gender distribution of patients underwent thyroid surgery.

Table 1. Pathologic findings of benign and malignant thyroid disease

	Histologic feature	No. of case	
Benign (n = 48)	Nodular hyperplasia	26	
	Follicular adenoma	8	
	Colloid cyst	6	
	Graves' disease	4	
	Lymphocytic thyroiditis	3	
	Functioning thyroid nodule	1	
	Malignant (n = 96)	Papillary carcinoma	93
		Follicular carcinoma	2
Medullary carcinoma		1	

147  
 58 (39.5%)  
 가 22  
 58 , 17  
 (completion thyroidectomy)  
 14  
 48  
 34 가 , 96  
 가 54 가 (Table 2).

가 Riddell nerves  
 at risk(NAR) .<sup>4)</sup> (isthmus)  
 NAR 0 ,  
 1,  
 2

Table 2. Types of operation in thyroid nodule

Pathology	Type of operation	No. of case
Benign (n = 48)	Lobectomy	33
	Lobectomy and nodulectomy	1
	Subtotal thyroidectomy	10
	Total thyroidectomy	4
	Malignant (n = 99)	Lobectomy
Completion thyroidectomy with FND <sup>a)</sup>		4
Completion thyroidectomy		10
Subtotal thyroidectomy		3
Subtotal thyroidectomy with MRND <sup>b)</sup>		3
Subtotal thyroidectomy with BND <sup>c)</sup>		1
Total thyroidectomy		32
Total thyroidectomy with MRND		18
Total thyroidectomy with BND	2	
Total thyroidectomy with FND	2	

a) FND : functional neck dissection

b) MRND : modified radical neck dissection

c) BND : bilateral modified radical neck dissection

(Thyroid Surgery)

8 , 가  
4 NAR  
hypoparathyroidism at risk

6 , 6  
3)  
가

**Table 3.** Incidence of iatrogenic recurrent laryngeal nerves paralysis according to operation types

Operation	NAR	Temporary	Permanent
Lobectomy	58	0	0
Subtotal thyroidectomy	31	0	1
Total thyroidectomy	111	3	2
Completion thyroidectomy	10	0	0
Total	210	3(1.4%)	3(1.4%)

**Table 4.** Hypoparathyroidism at risk and incidence of post-operative hypoparathyroidism

Surgical procedure	No. of patient	Temporary	Permanent
Subtotal thyroidectomy	17	1	0
Total thyroidectomy	58	4	1
Completion thyroidectomy	14	2	0
Total	89	7(7.9%)	1(1.1%)

89  
1 (1.1%)  
7 (7.9 %)  
1 2 (Table 4).

NAR 가 8  
4  
NAR 210 (seroma)  
1

반회후두신경손상  
(iatrogenic injury) 3 (1.4%),  
(intentional sacrifice) 4 (1.9%) (Table 3).

가 8 ,  
5 , 3 1850 70  
41% 가 .<sup>1)</sup> Kocher, Billorth, Halsted

8  
2 1 , 1 ,  
가 .<sup>1)</sup>  
4 3 , 1 .

상후두신경손상  
147 (NAR )  
bowing 가 Riddell  
가 1 (0.7%) 1  
nerves at risk(NAR) .<sup>3)</sup> 가





(central neck dissection)

가

가

가

3)

가 14 가

가 11

2

14

2%

22)

가

(neck wound dressing)

1

1998 4 2000 3 2

147

### REFERENCES

- 1) Cited from Becker WF. *Pioneers in thyroid surgery. Ann Surg* 1977;185:493-504.
- 2) Schroeder DM, Chambors A, France CJ. *Operative strategy for thyroid cancer: is total thyroidectomy worth the price? Cancer* 1986;58:2320-8.
- 3) Jesus HG, Javier G, Jose MV, Cesar G. *Complications following thyroid surgery. Arch Otolaryngol Head Neck Surg* 1991;117:516-8.
- 4) Riddell VH. *Injury to recurrent laryngeal nerves during thyroidectomy. Lancet* 1956;1:638-41.
- 5) Nishida T, Nakao K, Hamaji M, Kamiike W, Kurozumi K, Matsuda H. *Preservation of recurrent laryngeal nerve invaded by differentiated thyroid cancer. Ann Surg* 1997;226:85-91.
- 6) Lando MJ, Hoover LA, Zuckerbraun L. *Surgical strategy in thyroid disease. Arch Otolaryngol Head Neck Surg* 1990;116:1378-83.
- 7) Kim CM, Lee YD. *Safety of total thyroidectomy in thyroid cancer. Korean J General Surg* 1996;51:622-32.
- 8) Shin EJ, Lee MB, Lee MH, Moon C, Kim IS. *Complications after total thyroidectomy. Korean J General Surg* 1994;47:470-8.
- 9) Rustad WH, Morrison LF. *Revised anatomy of the recurrent laryngeal nerves. Surgical importance based on the dissection of 100 cadavers. Laryngoscope* 1952;62:237-49.
- 10) Karlan MS, Catz B. *Partial and total thyroidectomy. indications and technique for a safe procedure. Contemp Surg* 1983;23:41-9.
- 11) Nemiroff PM, Katz AD. *Extralaryngeal division of the recurrent laryngeal nerve. Surgical and clinical significance. Am J Surg* 1982;144:466-9.
- 12) Edis AJ. *Prevention and management of complications associated with thyroid and parathyroid surgery. Surg Clin North Am* 1979; 59:83-92.
- 13) Lore JM. *Complications of thyroid surgery. In: Lore JM. An Atlas of Head and Neck Surgery. 3rd ed. Philadelphia: WB Saunders;1988. p.782.*
- 14) Shaha A, Jaffer BM. *Complications of thyroid surgery performed by residents. Surgery* 1988;104:1109-14.
- 15) Lalida Kasensuwan, Shutima Nubthuentr. *Recurrent laryngeal nerve paralysis: a complication of thyroidectomy. J Otolaryngol* 1997;26:365-7.
- 16) Lore JM Jr, Szymula N. *Superior mediastinal exposure. Arch Otolaryngol Head Neck Surg* 1980;106:6-7.
- 17) Lore JM Jr. *Practical anatomical consideration in thyroid tumor surgery. Arch Otolaryngol Head Neck Surg* 1983;109:568-74.
- 18) Shindo ML. *Considerations in surgery of the thyroid gland. Otolaryngol Clin North Am* 1996;29:629-34.
- 19) Kenneth EL, Andrew HC, Quan YD, Michael D, Allan ES, Orolo HC. *Reoperative thyroid surgery. Surgery* 1992;111:604-9.
- 20) Holt GR, Mc Murry GT, Joseph DJ. *Recurrent laryngeal nerve injury following thyroid operations. Surg Gynecol Obstet* 1977;144:567-70.
- 21) Takao Kunori, Takashi Tsuchiya, Junzo Itoh, Shuichi Watabe, Motonobu Arai, Takahiro Satomi, et al. *Improvement of postoperative hypocalcemia by repeated allotransplantation of parathyroid tissue without anti-rejection therapy. Tohoku J Exp Med* 1991;165:33-40.
- 22) Michael BF, Kela JL, Jeremy WT. *Local complications after surgical resection for thyroid carcinoma. Am J Surg* 1994;168:404-7.