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INTRODUCTION

Total laryngectomy has been considered the treatment of choice in the majority of cases of recurrent or persistent laryngeal carcinoma after partial laryngeal surgery, and particularly, after radiotherapy. The development of extended conservative procedures such as supracricoid laryngectomy (SCL) with cricothyroidopexy (CHP) or cricothyroidoepiglottopexy (CHEP) and near total laryngectomy (NTL) has permitted an increasing number of successful partial laryngectomies that can preserve laryngeal function after failure.

MATERIAL AND METHODS

Retrospective analysis of medical records was performed. Thirty-one consecutive patients were treated with salvage intent by SCL or NTL from 1993 to 2007. Main outcome measures were recurrence, overall and disease-specific survival, cause of death, as well as functional results. Most of our patients were males (27/87%), mean age of 58 years. Twenty patients (64.5%) were primarily treated with endoscopic laser resection, seven (22.5%) patients received isolated external beam radiation, three (9.6%) chemoradiation therapy and one (3.2%) endoscopic resection with adjuvant radiation therapy (figure 1). Disease-free interval ranged between 2 and 60 months (mean, 8.1 months) after primary treatment and recurrence. Four patients (12.9%) had persistent disease after the first treatment. At the time of the recurrence none of the patients had distant metastatic disease. Neck dissection was performed in 20 patients (64.5%). Metastatic lymph node was found in one case as a pathological finding after selective neck dissection. All cases were investigated before the surgery with larynx and lung CT scans and neck and liver ultrasonography. SCL-CHEP was carried out in 20 patients (64.5%), 3 patients (9.6%) underwent SCL-CHP; NTL was performed in eight cases (25.8%). (Table 1)

RESULTS

Bleeding was the most common early postoperative complication and occurred in 6 patients (19.3%) requiring surgical approach. Other early complications were cervical fistula, most of them resolved conservatively. In one case total laryngectomy was performed for condroncrosis and local infection. Tracheotomy tube was removed in 20 patients (86.9%) between 7 and 300 days (mean, 30.1 days) after salvage in cases of SCL. Concerning the 3 patients who could not be decannulated, in 2 cases because neoglottic stenosis, and one by permanent aspiration. Complete swallowing recovery was achieved in 28 patients (90.3%) the mean time before removal the nasogastric feeding tube was 32 days (range 7 to 185 days). Total laryngectomy was performed in 3 patients; in one case due persistent aspiration, one case for recurrence and in the last case due to condroncrosis, fistula and wound infection. The 5-year overall survival was 82.6% and the 5-year specific survival after salvage surgery was 95% (table 2).

Figure 1: Primary treatment

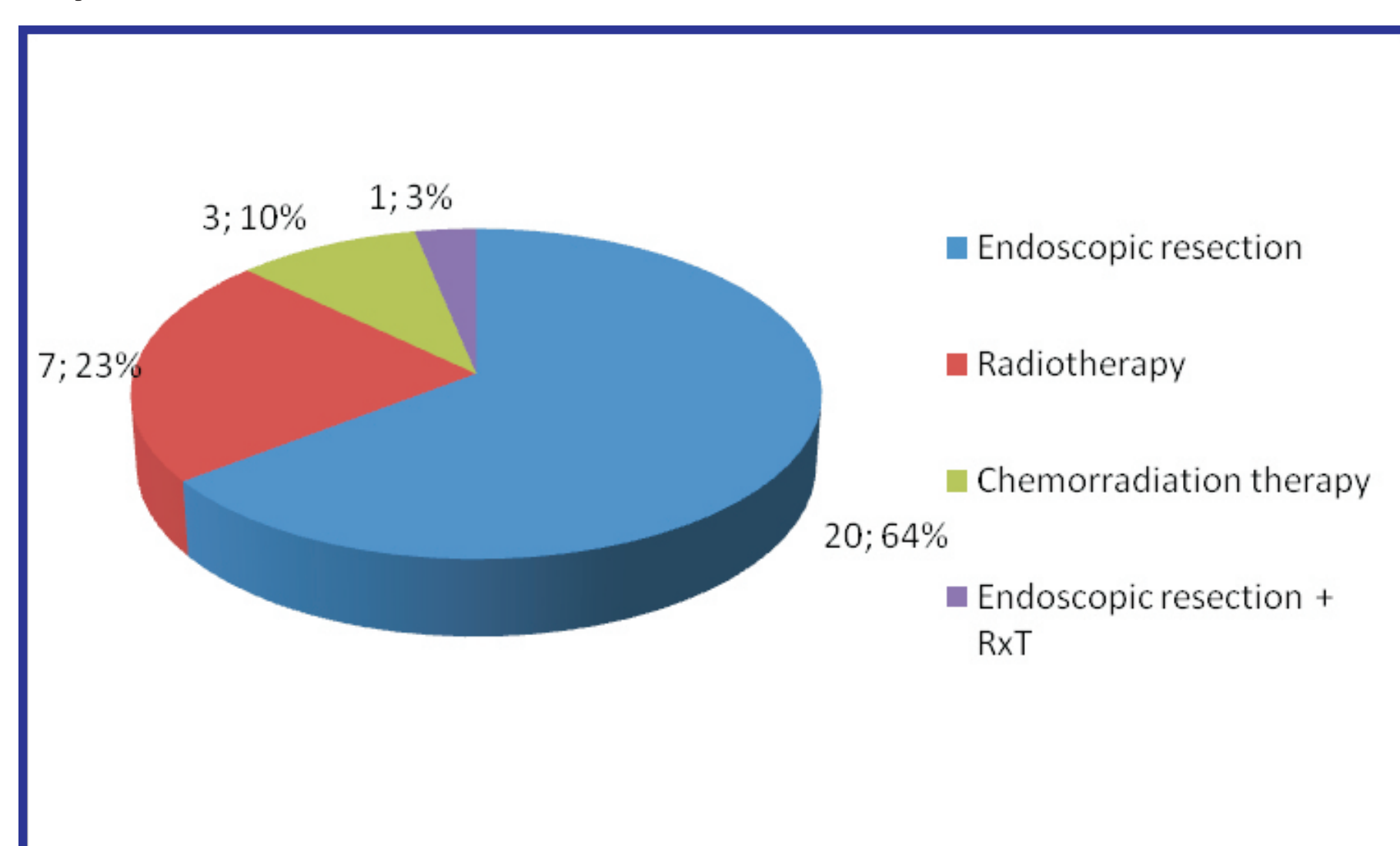


Table 1: Patients

Age (Years)	Gender	Pre Treatment Stage	Initial Treatment	Disease-free interval (months)	Recurrence T Stage (clinical)	Surgical Treatment	Neck Dissection	Feeding tube time (days)	Voice	Aspiration	Follow-up (months)
76	F	-	Endoscopic Resection	12	T2N0	CHP	Yes	-	No		25
47	M	T1N0	Endoscopic Resection	2	T2N0	CHEP	Yes	185			120
51	M	-	Endoscopic Resection	6	T3N0	CHEP	Yes	44			5
62	M	T1N0	Endoscopic Resection	10	T3N0	CHEP + RXT	No	30			15
75	M	T1N0	Endoscopic Resection	60	T1N0	CHEP	Yes	17			111
57	M	T3N0	Endoscopic Resection	2	T1N0	CHEP	Yes	38			109
63	M	T1N0	Endoscopic Resection	9	T1N0	CHEP	Yes	20			107
57	M	T1N0	Endoscopic Resection	2	T1N0	CHEP	Yes	55			87
70	M	T1N0	Endoscopic Resection	2	T1N0	CHEP	Yes	27			103
43	M	T1N0	Endoscopic Resection	6	T1N0	CHEP	Yes	8			5
59	M	T1N0	Endoscopic Resection	4	T2N0	CHEP	Yes	34			90
57	M	T1N0	Endoscopic Resection	2	T1N0	CHEP	Yes	55			87
59	M	T1N0	Endoscopic Resection	3	T1N0	CHEP	Yes	20			5
54	M	T1N0	Endoscopic Resection	5	T1N0	CHEP	Yes	9			6
57	M	T1N0	Endoscopic Resection	2	T1N0	CHP	Yes	15	No		7
45	M	T1N0	Endoscopic Resection	6	T1N0	CHEP	Yes	20			3
60	M	T1N0	Endoscopic Resection	5	T1N0	CHEP	Yes	10			8
68	M	T3N0	Endoscopic Resection	0	T3N0	NTL	Yes	21	Yes	Yes	8
63	F	T2N0	Endoscopic Resection	12	T4N0	NTL	Yes	22	Yes	No	98
59	M	T1N0	Endoscopic Resection	10	T4N0	NTL	Yes	30	Yes	No	51
63	M	T2N0	RXT	18	T1N0	CHEP	No	46			5
40	M	T4N0	RXT	26	T3N0	CHEP	No	-			-
68	M	T3N0	RXT	6	T3N0	CHP	No	80			4
40	F	T4N0	RXT	24	T3N0	CHEP	No	-			5
56	M	T1N0	RXT	0	T2N0	NTL	Yes	25	Yes	Yes	67
55	M	T3N0	RXT	0	T3N0	NTL	No	20	Yes	No	20
68	M	T3N0	Chemoradiation	2	T3N0	CHP	No	80			4
55	M	T3N0	Chemoradiation	9	T2N0	NTL	No	30	Yes	No	65
62	M	T2N0	Chemoradiation	5	T2N0	NTL	No	40	No	No	11
41	M	T3N0	Endoscopic Resection + RXT	0	T3N0	NTL	No	26	Yes	No	9

Table 2: Postoperative complications

Postoperative complications	No patients
Bleeding	6
Salivary Fistula	5
Permanent aspiration	2
Laryngeal stenosis	1

Table 3- Disease-free survival in SCL and NTL.

	SCL	NTL
DISEASE-FREE SURVIVAL	70%	69%

CONCLUSION

Although total laryngectomy has been widely considered the classic approach for laryngeal or pyriform sinus squamous cell carcinoma recurrence or persistent disease SCL and NTL seems to offer similar local control and survival rates (Table 3). SCPL with CHEP / CHP and NTL are a feasible, oncologically safe, functionally valid alternative to total laryngectomy in selected laryngeal recurrence or persistent disease.