



Fig. 1 General thoracic surgery

Table 1 Total entry cases of general thoracic surgery during 2007 in 2007

	Cases	%
Benign pulmonary tumor	648	1.2
Primary lung cancer	26,092	46.7
Other primary malignant pulmonary tumor	255	0.5
Metastatic pulmonary tumor	5,047	9.0
Tracheal tumor	139	0.2
Mesothelioma	431	0.8
Chest wall tumor	628	1.1
Mediastinal tumor	3,731	6.7
Thymectomy for MG without thymoma	309	0.6
Inflammatory pulmonary disease	3,021	5.4
Empyema	1,425	2.6
Bullous disease excluding pneumothorax	681	1.2
Pneumothorax	11,982	21.5
Chest wall deformity	337	0.6
Diaphragmatic hernia including traumatic	113	0.2
Chest trauma excluding diaphragmatic hernia	346	0.6
Lung transplantation	19	0.0
Others	628	1.1
Total	55,832	100.0

Table 2 in 2007

	Cases	30-Day mortality	Hospital mortality	By VATS
1. Benign pulmonary tumor	648	1 (0.2)	1 (0.2)	484
Hamartoma	408	0 (0.0)	0 (0.0)	313
Sclerosing hemangioma	86	0		66
Others	154	1 (0.6)	1 (0.6)	105

(), % mortality

Table 3

in 2007

	Cases	30-Day mortality	Hospital mortality	By VATS
2. Primary malignant pulmonary tumor	26,347	119 (0.5)	261 (1.0)	
Lung cancer	26,092	117 (0.4)	258 (1.0)	12,079
Adenocarcinoma	17,616	44 (0.2)	98 (0.6)	
Squamous cell carcinoma	5,533	51 (0.9)	110 (2.0)	
Large-cell carcinoma (LCNEC)	810 (344)	5 (0.6) (2) (0.6)	10 (1.2) (3) (0.9)	
Small-cell carcinoma	488	6 (1.2)	7 (1.4)	
Adenosquamous carcinoma	451	4 (0.9)	9 (2.0)	
Carcinoma with plemorphic, sarcomatoid or sarcomatous elements	267	2 (0.7)	10 (3.7)	
Carcinoid	173	0 (0.0)	0 (0.0)	
Carcinomas of salivary gland type	34	0 (0.0)	0 (0.0)	
Unclassified	69	0 (0.0)	0 (0.0)	
Multiple lung cancer	504	1 (0.2)	9 (1.8)	
Others	150	1 (0.7)	1 (0.7)	
Unknown	5	1 (20.0)	1 (20.0)	
Wedge resection	3,279	6 (0.2)	12 (0.4)	2,402
Segmental excision	2,041	3 (0.1)	11 (0.5)	1,129
Sleeve segmental excision	65	1 (1.5)	1 (1.5)	41
Lobectomy	19,406	83 (0.4)	184 (0.9)	8,348
Sleeve lobectomy	421	4 (1.0)	12 (2.9)	40
Pneumonectomy	580	16 (2.8)	26 (4.5)	33
Sleeve pneumonectomy	15	0 (0.0)	1 (6.7)	0
Pleuropneumonectomy	16	0 (0.0)	1 (6.3)	1
Others	259	2 (0.8)	4 (1.5)	83
Unclassified	10	2	6	2
Sarcoma	44	2 (4.5)	2 (4.5)	
AAH	141	(0.0)	(0.0)	
Others	70	(0.0)	1 (1.4)	35

(), % mortality

Table 4 Details of lung cancer operation

in 2007

Age (years)	Cases
<20	9
20–29	23
30–39	185
40–49	847
50–59	4,022
60–69	8,199
70–79	10,373
80–89	2,258
≥90	15
NA	161
Total	26,092

Sex	Cases
Male	16,518
Female	9,570
NA	4
Total	26,092

Stage	Cases
Ia	12,764
Ib	5,308
IIa	1,003
IIb	1,953
IIIa	2,656
IIIb	1,440
IV	491
Others	103
NA	374
Total	26,092

NA, not available

Associated disease	Cases
Smoking history	13,722
BMI ≥ 30	643
Brain and cerebrovascular disease	984
FEV _{1,0%} < 40%	589
Ischemic heart disease	982
Interstitial pneumonia	945
Cr ≥ 2	269
Liver cirrhosis	85
Hb A1c ≥ 8	898
Hb ≤ 8	111
Autoimmune disease	295

Postoperative morbidity	Cases
Wound infection	230
Bleeding >500 ml/h	379
Air leak >2 weeks	385
Chylothorax	238
Bronchopleural fistula	102
Pulmonary embolism	36
Pyothorax	197
Pneumonia	484
Respiration support >3 days	138
Interstitial pneumonia exacerbation	153
Cardiac infarction	23
Arrhythmia	932
Brain infarction, bleeding	78
Others	314

Cause of death	Cases
Cardiovascular	23
Pneumonia	46
Pyothorax	10
Bronchopleural fistula	21
Respiratory failure	18
Pulmonary embolism	9
Interstitial pneumonia	64
Brain infarction or bleeding	13
Lung cancer	32
Others	25
Unknown	7
Unclassifiable	10
Total	268

Diagnosis	Cases
Symptom	3,755
Medical checkup	11,285
Chest XP	8,082
CT	2,161
Sputum cytology	87
Others	117
Follow-up of other disease	7,274
Others	310

Location	Cases
Peripheral	19,776
Central	2,114
Multiple	687
Unclassified	193
Others	33

Table 5 in 2007

	Cases	30-Day mortality	Hospital mortality	By VATS
3. Metastatic pulmonary tumor	5,047	8 (0.2)	12 (0.2)	3,288
Colorectal	2,461	4 (0.2)	7 (0.3)	1,580
Hepatobiliary/pancreatic	183	1 (0.5)	1 (0.5)	128
Uterine	218	0 (0.0)	0 (0.0)	164
Mammary	332	1 (0.3)	1 (0.3)	239
Ovarian	36	0 (0.0)	1 (2.8)	25
Testicular	67	0 (0.0)	0 (0.0)	36
Renal	414	1 (0.2)	1 (0.2)	278
Skeletal	121	0 (0.0)	0 (0.0)	80
Soft tissue	184	0 (0.0)	0 (0.0)	122
Otorhinolaryngological	272	0 (0.0)	0 (0.0)	178
Pulmonary	292	1 (0.3)	1 (0.3)	153
Others	467	0 (0.0)	0 (0.0)	305

(), % mortality

Table 6 in 2007

	Cases	30-Day mortality	Hospital mortality
4. Tracheal tumor	139	1 (0.7)	2 (1.4)
Primary malignancy	93	0 (0.0)	1 (1.1)
Metastatic	34	1 (2.9)	1 (2.9)
Benign	12	0 (0.0)	0 (0.0)

(), % mortality

Table 7 in 2007

	Cases	30-Day mortality	Hospital mortality	By VATS
5. Tumor of pleural origin	431	8 (1.9)	24 (5.6)	
Solitary fibrous tumor	112	0 (0.0)	1 (0.9)	
Malignant pleural mesothelioma	295	9 (3.1)	23 (7.8)	
Others	24	0 (0.0)	0 (0.0)	

(), % mortality

Table 8 in 2007

	Cases	30-Day mortality	Hospital mortality
6. Chest wall tumor	628	1 (0.2)	1 (0.2)

(), % mortality

Table 9

in 2007

	Cases	30-Day mortality	Hospital mortality	By VATS
7. Mediastinal tumor	3,731	2 (0.1)	7 (0.2)	1,378
Thymoma	1,525	1 (0.1)	1 (0.1)	332
Thymic cancer	195	0 (0.0)	3 (1.5)	16
Germ cell tumor	200	0 (0.0)	1 (0.5)	45
Benign	149	0 (0.0)	0 (0.0)	44
Malignant	50	0 (0.0)	1 (2.0)	1
Unclassified	1	0	0 (0.0)	0
Neurogenic tumor	461	0 (0.0)	0 (0.0)	289
Congenital cyst	598	0 (0.0)	0 (0.0)	406
Goiter	121	0 (0.0)	0 (0.0)	8
Lymphatic tumor	251	1 (0.4)	2 (0.8)	132
Others	380	0 (0.0)	0 (0.0)	150

(), % mortality

Table 10

in 2007

	Cases	30-Day mortality	Hospital mortality	By VATS
8. Thymectomy for myasthenia gravis	568	3 (0.5)	3 (0.5)	124
With thymoma	259	2 (0.8)	2 (0.8)	

(), % mortality

Table 11

in 2007

	Cases	30-Day mortality	Hospital mortality
9. Operation for nonneoplastic disease	18,530	77 (0.4)	151 (0.8)

in 2007

	Cases	30-Day mortality	Hospital mortality	By VATS
A. Inflammatory pulmonary disease	3,021	3 (0.1)	7 (0.2)	1,973
Tuberculous infection	161	0 (0.0)	0 (0.0)	66
Fungal infection	316	2 (0.6)	5 (1.6)	135
Bronchiectasis	86	1 (1.2)	2 (2.3)	30
Tuberculous nodule	546	0 (0.0)	0 (0.0)	414
Infection	1,344	0 (0.0)	0 (0.0)	923
Interpulmonary lymph node	179	0 (0.0)	0 (0.0)	163
Others	389	0 (0.0)	0 (0.0)	242

(), % mortality

Table 12 in 2007

	Cases	30-Day mortality	Hospital mortality	Radical surgery
B. Empyema	1,425	20 (1.4)	59 (4.1)	984

(), % mortality

Table 13 in 2007

	Cases	30-Day mortality	Hospital mortality	By VATS
C. Descending necrotizing mediastinitis	77	2 (2.6)	4 (5.2)	29

(), % mortality

Table 14 in 2007

	Cases	30-Day mortality	Hospital mortality	By VATS
D. Bullous disease	681	2 (0.3)	4 (0.6)	457
Emphysematous bulla	511	0 (0.0)	1 (0.2)	352
Bronchogenic cyst	117	0 (0.0)	0 (0.0)	74
Emphysema with volume reduction surgery	32	1 (3.1)	2 (6.3)	22
Others	21	1 (4.8)	1 (4.8)	9

(), % mortality

Table 15 in 2007

	Cases	30-Day mortality	Hospital mortality	By VATS
E. Pneumothorax	11,982	16 (0.1)	33 (0.3)	10,896
Primary spontaneous	11,072	5 (0.0)	10 (0.1)	10,173
Secondary	910	11 (1.2)	23 (2.5)	723

(), % mortality

Table 16 in 2007

	Cases	30-Day mortality	Hospital mortality
F. Chest wall deformity	337	0 (0.0)	5 (1.5)
Funnel chest	285	0 (0.0)	4 (1.4)
Others	52	0 (0.0)	1 (1.9)

(), % mortality

Table 17 in 2007

	Cases	30-Day mortality	Hospital mortality	Traumatic
G. Diaphragmatic hernia	113	5 (4.4)	6 (5.3)	37

(), % mortality

Table 18 in 2007

	Cases	30-Day mortality	Hospital mortality
H. Chest trauma	346	23 (6.6)	26 (7.5)

(), % mortality

Table 19 in 2007

	Cases	30-Day mortality	Hospital mortality	Sympathectomy
I. Other respiratory surgery	551	7 (1.3)	8 (1.5)	
Arteriovenous malformation*	90	0 (0.0)	0 (0.0)	1
Pulmonary sequestration	100	0 (0.0)	0 (0.0)	1
Others	360	7 (1.9)	8 (2.2)	5
Unknown	1			1

(), % mortality

Table 20 in 2007

	Cases	30-Day mortality	Hospital mortality
10. Lung transplantation	10	1 (10.0)	1 (10.0)
Single lung	6	0 (0.0)	0 (0.0)
Bilateral	3	1 (33.3)	1 (33.3)
Living donor	10	0 (0.0)	0 (0.0)

(), % mortality

Table 21 in 2007

	Cases	30-Day mortality	Hospital mortality
11. Video-assisted thoracic surgery	33,696	39 (0.1)	70 (0.2)

(), % mortality

Including thoracic sympathectomy (385)

Table 22 in 2007

	Cases	30-Day mortality	Hospital mortality
12. Tracheobronchoplasty	538	6 (1.1)	12 (2.2)
Trachea	64	0 (0.0)	0 (0.0)
Carinal reconstruction	16	0 (0.0)	0 (0.0)
Sleeve pneumonectomy	58	0 (0.0)	1 (1.7)
Bronchus	378	5 (1.3)	10 (2.6)
Others	19	1 (5.3)	1 (5.3)
Unclassified	3		

(), % mortality

Table 23 in 2007

	Cases	30-Day mortality	Hospital mortality
13. Pediatric surgery	406	5 (1.2)	5 (1.2)

(), % mortality

Table 24

in 2007

	Cases		30-Day mortality	%	Hospital mortality	%
14. Combined resection of neighboring organ(s)	1,197		8	0.67	22	1.84
Organ resected	Primary lung cancer			Mediastinal tumor		
	Cases	30-Day mortality	Hospital mortality	Cases	30-Day mortality	Hospital mortality
Aorta	12	0 (0.0)	1 (8.3)	4	0 (0.0)	0 (0.0)
Superior vena cava	35	0 (0.0)	0 (0.0)	108	1 (0.9)	3 (2.8)
Pulmonary artery	188	2 (1.1)	4 (2.1)	6	0 (0.0)	0 (0.0)
Left atrium	39	0 (0.0)	1 (2.6)	2	0 (0.0)	0 (0.0)
Diaphragm	118	0 (0.0)	1 (0.8)	7	0 (0.0)	0 (0.0)
Chest wall (including ribs)	492	4 (0.8)	9 (1.8)	10	0 (0.0)	0 (0.0)
Vertebra	35	1 (2.9)	2 (5.7)	4	0 (0.0)	0 (0.0)
Esophagus	10	0 (0.0)	0 (0.0)	0	0	0
Lung				170	0 (0.0)	1 (0.6)

(), % mortality

Table 25

in 2007

	Cases	30-Day mortality	Hospital mortality
15. Operation for lung cancer invading the apical chest wall	127	2 (1.6)	3 (2.4)

(), % mortality

Includes tumors invading the anterior apical chest wall and posterior apical chest wall (superior sulcus tumor, so-called Pancoast type)