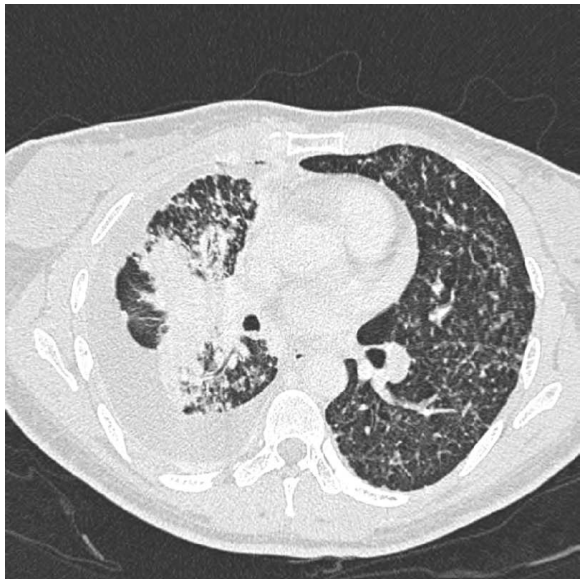
Les problèmes néoplasiques

Tumeurs solides

A votre avis, dans notre USI, chez les patients atteints de tumeurs solides, les problèmes néoplasiques pulmonaires sont la cause de

- 3% des admissions pour complications
- 12% des admissions pour complications
- 21% des admissions pour complications
- 37% des admissions pour complications
- 42% des admissions pour complications

- 2009
- USI Institut Jules Bordet
- 259 patients admis pour des urgences dont 175 tumeurs solides
- 28 causes respiratoires (16%)
- 4 causes respiratoires néoplasiques (2,5%)
  - -1 obstruction tumorale (0,5%)
  - -1 épanchement pleural (0,5%)
  - -2 fistules (1%)



Chez les patients atteints de cancers bronchiques, les problèmes néoplasiques pulmonaires sont la cause de

- 7% des admissions
- 31% des admissions
- 49% des admissions
- 72% des admissions
- 94% des admissions

S. Boussat
T. El'rini
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A. Depierre
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Predictive factors of death in primary lung cancer patients on admission to the intensive care unit

Table 2 Reasons for admission of the 57 patients to the MICU

Reason	No. (%)
Acute pulmonary disease	39 (68.4)
Infection (pneumonia, acute bronchitis)	31 (54.4)
ARDS	2 (3.5)
Pulmonary embolism	2 (3.5)
Pneumothorax	3 (5.3)
Hemoptysis	2 (3.5)
Airway obstruction and atelectasis	1 (1.8)
Pleural effusion	1 (1.8)
Shock	14 (24.5)
Cardiogenic	6 (10.5)
Septic	8 (14.0)
Central nervous system dysfunction	6 (10.5)
Brain metastases	5 (8.7)
Ischemic stroke	1 (1.8)
Electrolyte abnormalities	6 (10.5)
Hypercalcemia	5 (8.7)
Hyponatremia	1 (1.8)
Hematological disorders	4 (7.0)
Aplasia	3 (5.3)
Disseminated intravascular coagulation	1 (1.8)
Iatrogenic	3 (5.3)
Acute respiratory failure after endoscopy	
Post-operative (all surgery)	9 (15.8)

7,1%

Intensive Care Med (2000) 26: 1811–1816

ICU and hospital mortality

Table 5 Prediction of MICU and hospital mortality using multivariate analysis

	MICU mortality	Hospital mortality
Acute pulmonary disease	OR = 11.4 (1.43–90.8)*	OR = 21.6 (1.16–401.0)*
Karnofsky status < 70	OR = 10.7 (1.80–63.8)*	OR = 9.63 (1.01–91.7)*

*$P < 0.05$ (95% confidence interval)

Les indications et les résultats des soins intensifs chez les patients atteints de cancer bronchique

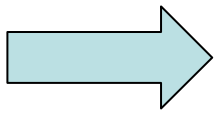
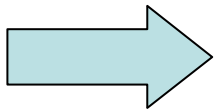
J.-P. Sculier, T. Berghmans, A.-P. Meert

- Institut Jules Bordet
- Janvier 1999 - décembre 2006
- 515 admissions à l'USI de CB (302 patients)
- 13% mortalité à l'USI

Rev Mal Respir 2007 ; 24 : 6S114-6S119

Tableau II.
Principales complications ayant justifié l'admission à l'USI et mortalité observée.

Causes d'admission à l'USI	Nombre de cas	Fréquence	Mortalité observée à l'USI
Arythmies cardiaques	70	13,6 %	4,3 %
Atteintes péricardiques	52	10,1 %	13,5 %
Instabilité hémodynamique d'origine septique	36	7 %	28 %
Douleurs thoraciques et problèmes coronariens	30	5,8 %	10 %
Aplasie médullaire compliquée (infection, hémorragie)	28	5,4 %	0
Pneumonies sévères	22	4,3 %	27 %
Hyponatrémie	18	3,5 %	0
Obstruction respiratoire tumorale	15	29 %	33 %
Exacerbation de BPCO	13	2,5 %	0
Épanchement pleural massif	11	2,1 %	0
Embolie pulmonaire	11	2,1 %	9,1 %

Prognosis of Lung Cancer Patients With Life-Threatening Complications*

Márcio Soares, MD, PhD; Michael Darmon, MD; Jorge I. F. Salluh, MD, MSc; Carlos G. Ferreira, MD, PhD; Guillaume Thiéry, MD; Benoit Schlemmer, MD; Nelson Spector, MD, PhD; and Élie Azoulay, MD, PhD

Table 1—*Characteristics of the 143 Study Patients

Variables	Data
Factors at ICU admission	
Age, yr	61.6 ± 9.9
Hospital days prior to ICU admission	2 (0–5)
Male gender	105 (73)
SAPS II score, points	47.4 ± 21.0
LOD score, points	5 (2–7)
Type of cancer	
Squamous-cell carcinoma	56 (39)
Adenocarcinoma	49 (34)
SCLC	25 (17)
Large cell	8 (6)
Other	5 (3)
Extensive disease (TNM classification)	
No (I-IIIa)	59 (41)
Yes (IIIb-IV)	84 (59)
Distant metastasis	44 (31)
Airway obstruction	36 (25)
Cancer status	
Controlled	55 (38)
Uncontrolled, newly diagnosed	55 (38)
Uncontrolled, recurrence/progression	33 (23)
Performance status	
0–2	111 (78)
3–4	32 (22)
Previous anticancer treatments	
Combined therapy	51 (36)
Surgery to cure the cancer only	20 (14)
Radiation therapy only	16 (11)
Chemotherapy only	13 (9)
No previous anticancer treatments	43 (30)
Weight loss ≥ 10%	13 (9)
Comorbidity score (ACE-27)	
None	53 (37)
Mild	54 (38)
Moderate	19 (13)
Severe	17 (12)
Most frequent comorbidities	
COPD	48 (34)
Systemic arterial hypertension	33 (23)
Diabetes mellitus	10 (7)
Chronic heart failure	7 (5)
Factors during the ICU stay	
MV	100 (70)
Vasopressors	82 (57)
Dialysis	12 (8)
Acute organ failures	2 (1–3)
Outcome data	
Length of ICU stay, d	6 (3–13)
Length of hospital stay, d	15 (8–32)
DFLST	41 (29)
ICU mortality	60 (42)

Table 3—*Univariate and Multivariate Analyses of Factors Associated With Hospital Mortality (143 Patients)*

Variables	Hospital Mortality, %	Univariate Analysis		Multivariate Analysis	
		OR (95% CI)	p Value	OR (95% CI)	p Value
Age, yr		1.02 (0.99–1.06)	0.182		
Gender					
Female	68	1.00	0.222		
Male	55	0.57 (0.26–1.25)			
Type of cancer					
NSCLC	56	1.00	0.208		
SCLC	72	2.03 (0.79–5.22)			
Extensive disease (TNM classification)					
No (I-IIIa)	44	1.00	0.005		
Yes (IIIb-IV)	69	2.83 (1.42–5.65)			
Cancer status					
Controlled	47	1.00	0.014	1.00	
Uncontrolled, newly diagnosed	60	1.71 (0.80–3.67)		0.79 (0.31–2.03)	0.619
Uncontrolled, recurrence/progression	79	4.25 (1.60–11.27)		3.20 (1.07–9.51)	0.037
Performance status					
0–2	51	1.00	0.002		
3–4	84	5.12 (1.84–14.25)			
Airway obstruction by cancer					
No	51	1.00	0.001	1.00	
Yes	83	4.91 (1.89–12.75)		4.59 (1.52–13.91)	0.007
Weight loss > 10% of usual body weight					
No	58	1.00	0.610		
Yes	69	1.65 (0.48–5.63)			
Moderate/severe comorbidity (ACE-27)					
No	53	1.00	0.036	1.00	
Yes	75	2.63 (1.13–6.12)		3.11 (1.18–8.21)	0.022
COPD					
No	60	1.00	0.802		
Yes	56	0.86 (0.43–1.73)			
Infection					
No	46	1.00	0.015		
Yes	67	2.47 (1.24–4.92)			
MV					
No	35	1.00	< 0.001		
Yes	69	4.16 (1.95–8.86)			
Vasopressors					
No	38	1.00	< 0.001		
Yes	74	4.80 (2.34–9.83)			
No. of organ failures		2.23 (1.59–3.13)	< 0.001	1.96 (1.38–2.79)	< 0.001

La mortalité à 6 mois d’un patient atteint d’un CB admis en réanimation pour obstruction bronchique néoplasique et qui sort vivant de l’hôpital est de :

- 5%
- 10%
- 15%
- 20%
- 25%

Six-month prognosis of patients with lung cancer admitted to the intensive care unit

Intensive Care Med (2009) 35:2044–2050

Sébastien Roques
Antoine Parrot
Armelle Lavole
Pierre-Yves Ancel
Valérie Gounant
Michel Djibre
Muriel Fartoukh

Table 1 Patient's characteristics ($n = 105$)

Demographics	
Age, year	64.8 ± 10.6 (39–86)
Performance status, *n* (%)*	
0–1	56 (54)
2–4	47 (46)
Comorbid condition, *n* (%)	
Tobacco intoxication	94 (90)
Cardiovascular disease**	52 (50)
COPD**	34 (33)
Severity scores, points	
SAPS II	40 ± 21 (13–112)
SOFA	4.4 ± 4.7 (0–18)
Cancer subtype, *n* (%)	
NSCLC	87 (83)
SCLC	18 (17)
Extensive disease (TNM classification), *n* (%)***	
NSCLC	
No (Stage I-II-IIIA)	17 (17)
Yes (Stage IIIB-IV)	68 (66)
SCLC	
No (localized)	1 (1)
Yes (disseminated)	17 (17)
Metastasis	67 (64)
Cancer status, *n* (%)	
Controlled	13 (12)
Non-controlled	22 (21)
Unknown	70 (67)
Anticancer treatments prior to current hospital stay, *n* (%)	
None	46 (44)
Surgery	6 (6)
Chemotherapy/radiation therapy	53 (50)
Reason for ICU admission, *n* (%)	
Respiratory	97 (92)
Acute respiratory failure	62 (59)
Hemoptysis	47 (45)
Cardiovascular	8 (8)
Septic shock	10 (10)
Neurological	10 (10)
Main therapeutics in ICU, *n* (%)	
Mechanical ventilation	43 (41)
Vasopressors	33 (31)
Renal replacement	3 (3)
Outcome, *n* (%)	
Withholding or withdrawing therapy	45 (43)
Mortality	
ICU	45 (43)
Hospital	57 (54)
6 months****	76 (73)
Cancer treatment after hospital discharge, *n* (%) *****	
Yes	30 (30)
No	14 (14)

COPD Chronic obstructive pulmonary disease, *SCLC* small cell lung cancer, *NSCLC* non-small cell lung cancer, *ICU* intensive care unit, *SAPS* II simplified acute physiology score, *SOFA* sequential organ failure assessment

Values are expressed as mean ± SD (standard deviation) or *n* (%)

Missing data: *$n = 2$; **$n = 1$; ***in 2 patients with NSCLC stage III, the staging A or B could not be determined; ****in 1 patient, the follow-up duration averaged 5.8 months; *****$n = 4$

Table 3 Univariate and multivariate analyses of variables associated with 6-month mortality in the patients who survived after hospital discharge ($n = 48$)

Variables	Patients, *n*	6-month mortality, % (*n*)	Univariate analysis		Multivariate analysis	
			HR CI (95%)	*P* value	HR CI (95%)	*P* value
Age, year			0.99 (0.95–1.04)	0.7		
Performance status*						
0–1	33	33% (11)	–	0.3		
2–4	13	46% (6)	1.7 (0.6–4.5)			
COPD/CD						
No	18	33% (6)	–	0.5		
Yes	30	43% (13)	1.4 (0.5–3.6)			
NSCLC						
No	9	22% (2)	–	0.3		
Yes	39	44% (17)	2.3 (0.5–9.9)			
Cancer newly diagnosed						
No	29	38% (11)	–	0.9		
Yes	19	42% (8)	1.1 (0.4–2.6)			
Extensive cancer disease**						
No	11	18% (2)	–	0.2		
Yes	36	44% (16)	2.7 (0.6–11.7)			
Metastasis						
No	20	30% (6)	–	0.4		
Yes	28	46% (13)	1.6 (0.6–4)			
Airways obstruction						
No	43	42% (18)	–	0.35		
Yes	5	20% (1)	0.4 (0.05–2.8)			
Cancer progression						
No	39	31% (12)	–	0.001	–	0.0004
Yes	9	78% (7)	4.7 (1.8–12)		6.1 (2.2–17)	
Acute respiratory failure						
No	27	41% (11)	–	0.9		
Yes	21	38%(8)	1.1 (0.4–2.6)			
Hemoptysis						
No	21	24% (5)	–	0.07		
Yes	27	52% (14)	2.6 (0.9–7)			
Cardiovascular admission						
No	45	38% (17)	–	0.13		
Yes	3	67% (2)	3.1 (0.7–13.5)			
Severe sepsis/septic shock						
No	47	40% (19)				
Yes	1	0% (0)				
Neurological admission						
No	43	40% (17)	–	0.9		
Yes	5	40% (2)	1.09 (0.25–4.7)			
SAPS II (per point)			1.02 (0.98–1.06)	0.4		
SOFA (per point)			1.2 (1.03–1.4)	0.016		
Mechanical ventilation						
No	35	31% (11)	–	0.03	–	0.01
Yes	13	62% (8)	2.7 (1.1–6.6)		3.6 (1.35–9.4)	
Vasopressors						
No	38	34% (13)	–	0.04		
Yes	10	60% (6)	2.7 (1.03–7.2)			

CD Cardiovascular disease, *COPD* chronic obstructive pulmonary disease, *SAPS II* simplified acute physiology score, *SOFA* sequential organ failure assessment

Missing data, *$n = 2$; **in one patient with NSCLC stage III, the staging A or B could not be determined

Outcome of patients admitted to the intensive care unit with newly diagnosed small cell lung cancer

Ross R. Jennens [a,*], Mark A. Rosenthal [a], Paul Mitchell [b], Jeffrey J. Presneill [c]

Patient demographics

Parameter	$n = 20$
Age, median (range), *y*	67 (38–82)
Male/female ratio	10/10
Disease status limited/extensive	8/12
Intubated, *n* (%)	9 (45)
Duration in ICU, median (range), *d*	2 (1–11)
Treatment with chemotherapy, *n* (%)	16 (80%)
Timing of SCLC diagnosis, n (%)	
Pre ICU	3 (15)
During ICU	7 (35)
Post ICU	10 (50)
Timing of chemotherapy [a]	
Pre ICU	1 (5)
During ICU	5 (25)
Post ICU	11 (55)
Adjusted Manchester score	
0	1 (5)
1	10 (50)
2	4 (20)
3	3 (15)
4	2 (10)

[a] One patient received chemotherapy both pre and post ICU admission, and therefore, appears twice.

Lung Cancer 38 (2002) 291–296

Data for five patients treated with chemotherapy in ICU

Patient number	Age (years)	Sex	Stage	ICU duration (days)	Intubation duration (days)	Reason for ICU admission	Treatment	Timing of diagnosis[a]	Response	Manchester score (adjusted)	Survival (days)[b]
1	68	F	ED	11	11	Respiratory failure	1 × CE	During	No	2	11
2	55	F	ED	9	6	Respiratory failure	2 × CAV	During	No	2	16
3	64	M	ED	2	0	Respiratory monitoring	1 × Cyclo	Pre	No	3	37
4	38	M	LD	5	5	Respiratory failure	4 × CAV	During	Yes	1	210[c]
5	68	F	LD	9	9	Respiratory failure	4 × CE	During	Yes	1	214[c]

LD, limited disease; ED, extensive disease; CE, carboplatin + etoposide; CAV, cyclophosphamide, doxorubicin, vincristine; Cyclo, cyclophosphamide (intravenous); M, male; F, female.

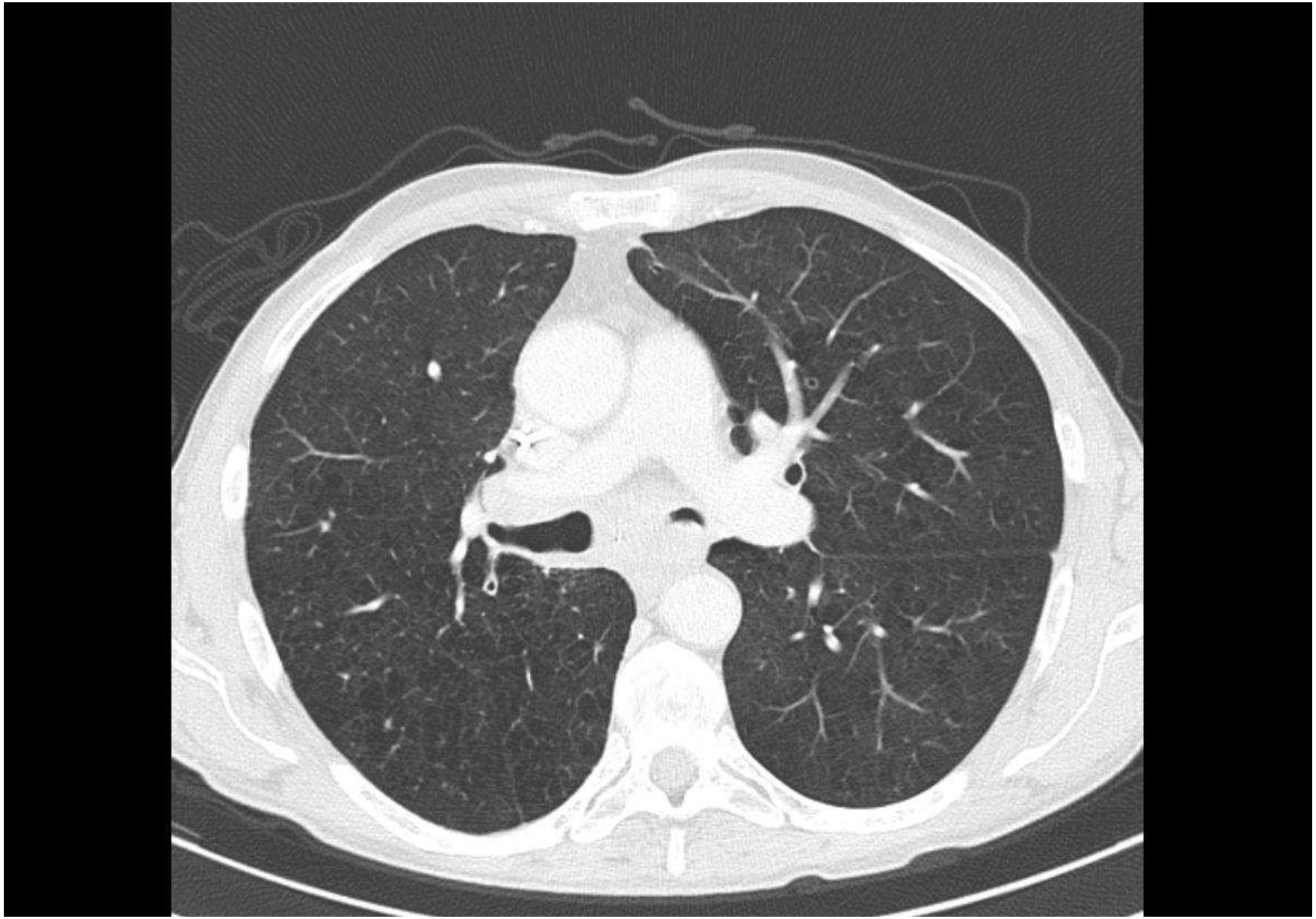
[a] Timing of diagnosis of SCLC in relation to ICU admission.

[b] Survival from date of ICU admission.

[c] Censored as alive at end of data collection period.

Auteur	N pts	Mortalité USI	Mortalité hospi	Mortalité à long terme	Facteur pronostiques
Ewer 1986	46	85%	91%	98%	MV duration > 6 days
Boussat 2000	57	66%	75%		PS<70, acute pulmonary complications *Stage*
Jennens 2002	20 CBPC			85%	Extensive disease, high MANCHESTER score
Thyrault 2002	67	46%			Age, IGSII, ODIN, acute respiratory failure, IMV
Lin 2004	81	73%	85%		APACHE, FiO2, n organ failure
Reichner 2006	47	43%	60%		SOFA, IMV, stage IV NSCLC
Soares 2007	143	42%	59%	67%	Progressive cancer, airway neoplastic obstruction, (comorbidities), n organ failure, age
Adam 2008	139	22%	40%	48%	Vasopressors, n organ failure
Roques 2009	105	43%	54%	73%	PS, acute pulmonary complications *Progressive disease, IMV*

Les obstructions tumorales



Central Airway Obstruction

Armin Ernst, David Feller-Kopman, Heinrich D. Becker, and Atul C. Mehta

Am J Respir Crit Care Med Vol 169. pp 1278–1297, 2004

TABLE 1. CONDITIONS ASSOCIATED WITH CENTRAL AIRWAY OBSTRUCTION

Malignant	Nonmalignant
Primary endolumenal carcinoma	Lymphadenopathy
Bronchogenic	Sarcoidosis
Adenoid cystic	Infectious (i.e., tuberculosis)
Mucoepidermoid	Vascular
Carcinoid	Sling
Metastatic carcinoma to the airway	Cartilage
Bronchogenic	Relapsing polychondritis
Renal cell	Granulation tissue from:
Breast	Endotracheal tubes
Thyroid	Tracheostomy tubes
Colon	Airway stents
Sarcoma	Foreign bodies
Melanoma	Surgical anastomosis
Laryngeal carcinoma	Wegener's granulomatosis
Esophageal carcinoma	Pseudotumor
Mediastinal tumors	Hamartomas
Thymus	Amyloid
Thyroid	Papillomatosis
Germ cell	Hyperdynamic
Lymphadenopathy	Tracheomalacia
Associated with any of the above malignancies	Bronchomalacia
Lymphoma	Webs
	Idiopathic
	Tuberculosis
	Sarcoidosis
	Other
	Goiter
	Mucus plug
	Vocal cord paralysis
	Epiglottitis
	Blood clot

Laser

TABLE 2. LASER THERAPY FOR PATIENTS WITH CENTRAL AIRWAY OBSTRUCTION

First Author (Ref.)	Year	n	Indication	Therapy	Results/Comments
Dumon (80)	1982	111	Benign and malignant CAO	Nd:YAG	Best results with malignant disease, laser Rx with gentle dilation for tracheal stenosis
McDougall (76)	1983	22	Malignant CAO	Nd:YAG	20/22 with symptomatic improvement and improvement in airway diameter, 2 deaths due to massive hemorrhage
Hetzel (196)	1984	100	Malignant CAO	Argon (n = 14), Nd:YAG (n = 86)	Symptomatic improvement seen in 68% of patients treated for hemoptysis, 76% of patients treated for partial airway obstruction, and 38% treated for complete airway obstruction
Kvale (83)	1985	55	Benign (n = 10) and malignant (n = 45) CAO	Nd:YAG	Benign disease required more repeat Rx, 34 of 45 patients (75%) with malignant disease had improvements in airway diameter and dyspnea
Shapshay (38)	1987	5	Subglottic and tracheal stenosis	Nd:YAG/CO_2 laser + rigid dilation	100% success at up to 17 mo follow-up
Brutinel (82)	1987	116	Benign (n = 9) and malignant (n = 107) CAO	Nd:YAG	83% with improvement in airway diameter, patency achieved in 58% of patients with complete CAO, improvement in 63% treated for hemoptysis, and 66% treated for dyspnea
van Boxem (99)	1998	19	CAO due to typical bronchial carcinoid (laser and electrocautery)	Nd:YAG or electrocautery	14 with complete response, distal disease unable to be visualized in the remaining 5, no difference between laser and electrocautery
Cavaliere (78)	1988	1,000	649 with malignant CAO, 139 with tracheal stenosis	Nd:YAG	Best success with tracheal, right mainstem, and bronchus intermedius tumors, 94% immediate improvement in patients with tracheal stenosis
Stanopoulos (84)	1993	17	CAO and respiratory failure	Nd:YAG	9 of 17 liberated from mechanical ventilation
Mehta (39)	1993	18	Concentric tracheal and subglottic stenosis	Nd:YAG and rigid dilation	75% success
Shea (85)	1993	46	Malignant CAO	Nd:YAG vs. Nd:YAG + brachytherapy	Mean survival 16.4 wk in laser group vs. 40.8 wk in combination group (p = 0.001)
Cavaliere (81)	1994	1,585	Malignant CAO	Nd:YAG	93% with radiographic and endoscopic improvement
Moghissi (197)	1997	17	Malignant CAO	Nd:YAG + PDT	100% with symptomatic relief, 65% alive at 1 yr, 47% alive at 2 yr
Laccourreye (198)	1999	50	Endolaryngeal malignancy	CO_2	93% success rate in treatment group, 88% in palliation group
Venuta (178)	2002	273	Malignant CAO	Nd:YAG ± stent	Goal of palliation in 237 patients: median survival, 12 mo; goal of bridge to surgery in 36 (± induction chemotherapy): 52–59% alive at 3 yr; significant improvement in oxygenation, FEV_1, and quality of life

Thérapie photodynamique

TABLE 3. PHOTODYNAMIC THERAPY FOR PATIENTS WITH MALIGNANT CENTRAL AIRWAY OBSTRUCTION

First Author (Ref.)	Year	n	Indication	Results/Comments
Zwirewich (17)	1988	20	Complete bronchial obstruction	Used CT to characterize obstruction as predominantly intraluminal or extrinsic; 8 of 9 (89%) with intraluminal disease had improvements on follow-up bronchoscopy, compared with 2 of 10 (20%) with predominately extrinsic disease ($p = 0.005$); 6 of 9 (66%) with intraluminal disease had radiographic improvement in atelectasis vs. 0 of 10 patients with extrinsic disease ($p = 0.003$); CT was superior to bronchoscopy in determining degree of extrinsic compression in patients with complete airway obstruction
LoCicero (199)	1990	10	Complete bronchial obstruction	33% reduction in bronchial obstruction; 100% of patients subjectively improved, especially in terms of cough and dyspnea
McCaughan (93)	1992	46 (sites of obstruction)	Tracheal (n = 7), bronchial (n = 39)	Examined varying light doses and power densities; overall, 46% reduction in airway obstruction; light dose was proportional to the improvement in airway obstruction as well as the amount of reobstruction by necrotic material and secretions seen at the "toilet bronchoscopy"; no difference with increasing power density; recommend using 400 J/cf and 500 mW/cf
Moghissi (197)	1997	17	Tracheal involvement (n = 4), mainstem and lobar bronchi (n = 13)	Nd:YAG followed by PDT 6 weeks later; 100% with symptomatic improvement; 66% improvement in luminal opening; 8 of 17 (47%) alive at 2 yr
Moghissi (94)	1999	100	Tracheal involvement (n = 15), mainstem and lobar bronchi (n = 85)	67% reduction in endoluminal obstruction (from 85.6 to 17.5%); 100% with symptomatic improvement; 23 of 43 (53%) of patients with WHO performance status < 2 survived ≥ 2 yr
Shah (200)	2000	3	Respiratory failure due to malignant CAO	PDT allowed extubation in 2 of 3 patients (third patient with more extensive disease than initially appreciated on CT)

Definition of abbreviations: CT = computed tomography; J/cf = joules per centimeter of diffusing fiber; mW/cf = milliwatts per centimeter of diffusing fiber; Nd:YAG = neodymium:yttrium–aluminum–garnet; PDT = photodynamic therapy; WHO = World Health Organization.

Cryothérapie

TABLE 4. CRYOTHERAPY FOR PATIENTS WITH CENTRAL AIRWAY OBSTRUCTION

First Author (Ref.)	Year	n	Indication	Results/Comments
Homasson (114)	1986	27	Benign (n = 5) and malignant (n = 22) CAO	62% success for malignant disease; 100% success for benign disease
Walsh (113)	1990	33	Malignant CAO	70% overall subjective improvement, 77% with improvement in airway diameter, 67% with improvement in hemoptysis, 56% with improvement in dyspnea
Vergnon (110)	1992	38	Malignant CAO	Used combination of cryotherapy and XRT; 26 of 38 (68%) had a > 50% improvement in airway diameter; 17 of these 26 (65%) had no residual tumor after XRT, and had significantly increased survival (397 vs. 144 d, $p < 0.001$); 12 of 12 with < 50% improvement in airway diameter had residual tumor after XRT
Marasso (108)	1993	234	Benign (n = 44) and malignant (n = 183) CAO (4 patients with carcinoid, 3 with bronchial cylindroma)	Improvement in 93% treated for hemoptysis, 81% with improvement in dyspnea, 76% resolution of lobar atelectasis, 57% resolution in lung atelectasis
Maiwand (104)	1995	622	Malignant CAO (n = 600) and posttransplant anastomotic stricture (n = 22)	78% overall subjective improvement, 79% with improvement in endobronchial obstruction, 70% with improvement in stridor, 66% with improvement in dyspnea, 65% with improvement in hemoptysis, 69% success in patients with anastomotic stricture
Mathur (112)	1996	22	Malignant CAO (n = 20) and posttransplant anastomotic stricture (n = 2)	Complete removal of endobronchial tumor in 18 of 22 (82%) (remaining 3 with extrinsic compression); 5 of 5 with improvement in hemoptysis; 12 of 17 (71%) with improvement in dyspnea; 100% success in patients with anastomotic stricture
Maiwand (201)	1997	21	Posttransplant anastomotic stricture	15 of 21 (71%) with complete removal of obstruction; 6 of 21 (29%) with partial removal of obstruction; 8 patients later required stent placement
Noppen (202)	2001	12	Malignant (n = 10), poststent granulation tissue (n = 1), capillary hemangioma (n = 1)	One session achieved permanent airway patency in 4 of 5 (80%) with metastatic CAO and in 2 of 4 (50%) with carcinoma *in situ*, as well as the patient with capillary hemangioma; 2 or more sessions required in remaining patients

Brachythérapie

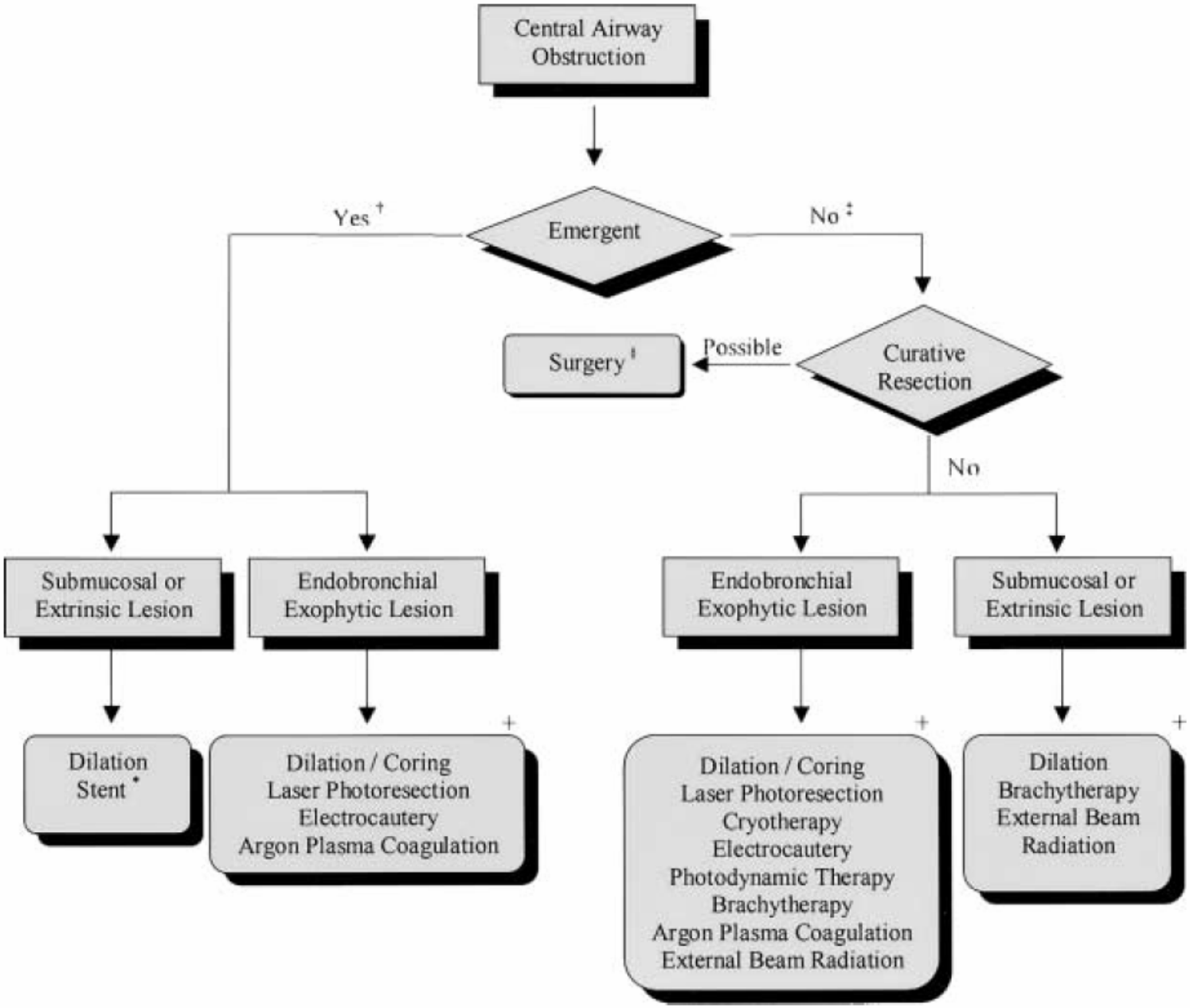
TABLE 5. BRACHYTHERAPY IN PATIENTS WITH MALIGNANT CENTRAL AIRWAY OBSTRUCTION

First Author (Ref.)	Year	n	Dose Rate	Total Dose	Results/Comments
Schray (123)	1988	65	LDR	3,000 cGy at a radius of 10 mm in the trachea and 5 mm in the bronchi	60% with bronchoscopic improvement; resolution of hemoptysis in 79%; improvement in cough and dyspnea in 50%; prior response to XRT (> 1 yr) predicted response to brachytherapy; 10% with life-threatening toxicity (fistula/hemorrhage)
Roach (127)	1990	17	LDR	3,000 cGy at 5 mm, 1,500 cGy at 10 mm	60% with bronchoscopic improvement; 53% with symptomatic improvement
Mehta (203)	1990	52	LDR	4,700 cGy at 10 mm	73% with radiographic improvement; 79% with symptomatic improvement; up to 70% of remaining life can be symptom free
Speiser (204)	1990	45	IDR	1,000 cGy at 5 mm	70% improvement in airway obstruction; 98% with symptomatic improvement; 3.1% overall complication rate; no patient died from airway obstruction
Suh (125)	1993	37	LDR	3,000 cGy at 10 mm	Compared LDR brachytherapy with and without concomitant Nd:YAG laser therapy; approximately 75% of patients in both groups had good to excellent symptom relief; severe hemorrhage occurred in 25% of the brachytherapy-only group and in 33% of the combined treatment group
Nori (124)	1993	32	HDR	500 cGy at 10 mm × 3 fractions	100% of patients with hemoptysis and dyspnea had reduction of symptoms; 86% with improvement in cough; 70–88% with local control at 6 mo; no patient developed hemorrhage or fistula formation
Pisch (129)	1993	39	HDR	1,000 cGy at 10 mm	93% CR in patients with hemoptysis; 20% CR in patients with cough, 60% with partial response; 20% with resolution of atelectasis
Chang (128)	1994	76	HDR	700 cGy at 10 mm × 3 fractions	95% with reduction in hemoptysis; 88% with reduction in postobstructive symptoms; 87% with reduction in dyspnea; 79% with reduction in cough; 4% rate of massive hemoptysis
Trédaniel (131)	1994	51	HDR	700 cGy at 10 mm × up to 6 fractions	Compared patients with endoluminal localized tumor treated with HDR brachytherapy as the sole treatment (n = 29, group 1) with patients with extraluminal dissemination receiving palliation (n = 22, group 2); histologic complete response in 84% of group 1 and 27% of group 2; median overall survival not reached in group 1 after 23 mo of follow-up; median survival of 5 mo in group 2
Gustafson (205)	1994	44	HDR	700 cGy at 10mm × 3 fractions	74% with symptomatic improvement; 69% of evaluable patients had partial or complete radiographic response; 91% of evaluable patients had partial of complete bronchoscopic response; 7% with fatal hemoptysis
Gollins (206)	1994	406	HDR	1,500–2,000 cGy at 10 mm	92% with improvement in stridor; 88% with improvement in hemoptysis; 62% with improvement in cough; 60% with improvement in dyspnea; 46% with improvement in atelectasis; 67% with prolonged palliation
Vallanueva (119)	1995	169	LDR (n = 110), HDR (n = 59)	LDR: 3,000–6,000 cGy at 10 mm; HDR: 700 cGy at 10 mm × 3 or 4 fractions	LDR: 63% with bronchoscopic response and 3.6% incidence of severe complications (massive hemoptysis or fistula formation); HDR: 71% with bronchoscopic response and 0% incidence of severe complications
Macha (207)	1995	365	HDR	500 cGy at 10 mm × 3 or 4 fractions	66% with palliation; 21% rate of fatal hemorrhage
Lo (208)	1995	169	LDR (n = 110) vs. HDR (n = 59)	LDR: 3,000–6,000 cGy at 10 mm; HDR: 700 cGy at 10 mm × 3 fractions	Clinical improvement in 72% of patients treated with LDR as compared with 85% of patients treated with HDR (p > 0.05); Bronchoscopic improvement in 82% of evaluable LDR patients compared with 93% of evaluable HDR patients; two patients in the LDR group developed fistula formation and two died of massive hemoptysis, compared with no patients in the HDR group
Delclos (132)	1996	81	HDR	1,500 cGy at 6 mm for endobronchial lesions and 7.5 mm for tracheal lesions, × 2 fractions	32% with excellent subjective improvement, another 30% with moderate subjective improvement; subjective relief of dyspnea was proportional to survival; location of tumor correlated to complication rate: both patients with fatal complications had carinal lesions
Ofiara (209)	1997	30	HDR	800 cGy × 3 fractions	63% of evaluable patients with bronchoscopic improvement, and 29% had radiographic improvement; patients with tumors in lobar or segmental bronchi had better response rates for cough and hemoptysis as compared with patients with tracheal or mainstem tumors; cough improves more in patients with submucosal disease or extrinsic compression as compared with patients with endoluminal disease, whereas hemoptysis improves in both groups of patients equally
Huber (210)	1997	98	HDR	Group 1: XRT alone (n = 42) group 2: XRT with brachytherapy, 480 cGy at 10 mm × 2 fractions (n = 56)	No difference in performance status, clinical efficacy, or survival; fatal hemoptysis in 15% of group 1 and 21% of group 2 (p = 0.22); trend toward better local control in group 2 (p = 0.052), especially in those with squamous cell carcinoma (p = 0.007 in subgroup analysis)
Muto (211)	2000	320	HDR	Group A: 1,000 cGy × 1 fraction; group B: 700 cGy × 2 fractions; group C: 500 cGy × 3 fractions; groups A and B at 10 mm (n = 84 and 47, respectively); group C1 at 10 mm (n = 50), and group C2 at 5 mm (n = 139)	94% with reduction in hemoptysis; 90% with reduction in dyspnea; 90% with reduction in obstructive pneumonia; 70% with improvement in performance status; efficacy similar between groups; group C2 had fewest side effects
Kelly (212)	2000	175	HDR	1,500 cGy at 6 mm for bronchial disease and 7.5 mm for tracheal disease, × 2 fractions	78% with bronchoscopic improvement; 66% with symptomatic improvement; 88% of evaluable patients with radiographic improvement; increased survival in patient with symptomatic improvement (7 vs. 4 mo, p = 0.0032); 11% complication rate, 5% with fatal hemoptysis
Petra (213)	2001	67	HDR	500–700 cGy at	Up to 85% with bronchoscopic response—90% of these patients had

Prothèse

TABLE 6. AIRWAY STENTING IN PATIENTS WITH CENTRAL AIRWAY OBSTRUCTION

First Author (Ref.)	Year	n	Stent Material	Indication	Results/Comments
Hramiec (157)	1997	4	Metal	Tracheomalacia	Stents removed in all cases for failure/complications
Vonk- Noordegraf (215)	2001	14	Mixed	Malignant CAO	Significant palliative benefit; average survival, 11 wk
Miyazawa (155)	2000	34	Metal	Malignant CAO	Intrinsic and extrinsic compression; improvement in dyspnea and quality of life; mean survival, 12 wk; no significant complications
Vergnon (216)	2000	13	Silicone	Inoperable benign tracheal stenosis	Mean follow-up of 23 mo; novel design, no migration, simple removal
Noppen (144)	1999	46	Silicone	Benign and malignant CAO	More stent migration in benign disease, otherwise effective
Eisner (217)	1999	9	Metal	Benign CAO	Improvement in pulmonary function; mean follow-up, 23 mo
Furman (218)	1999	6	Metal	Benign CAO	Pediatric population with malacia; 12 stents placed with 2 deaths; 2 stents removed for granulation
Susanto (165)	1998	7	Metal	Posttransplant CAO	11 stents placed; several complications, requiring removal of 3 stents; 1 death unrelated to stent placement
Dasgupta (164)	1998	37	Metal	Mixed	52 stents placed, no complications in the short term (mean follow-up, 21 wk)
Bolot (219)	1998	18	Metal	Posttransplant CAO	23 stents placed with immediate improvement, with 21-mo follow-up; 6 stents required removal for complications and 1 fatality due to hemorrhage
Freitag (169)	1996	30	Silicone	Tracheoesophageal fistula	Dynamic stenting combined with esophageal stenting improved mean survival to 110 d
Martinez- Ballarin (220)	1996	63	Silicone	Benign CAO	5 unrelated deaths; easy removal when assessed for cure; migration most common complication
Dumon (221)	1996	1,058	Silicone	Mixed	Multicenter study with total of 1,574 stents; mean stenting 4 mo for malignant and 14 mo for benign CAO; migration most common problem; overall effective therapy with few complications
Bolliger (222)	1996	27	Metal	Malignant CAO and fistula	36 stents placed with significant improvement in Karnofsky Index; mean observation at 2 mo showed migration, granulations, and secretion retention, no severe problems
Monnier (137)	1996	40	Metal	Malignant CAO	50 stents placed, followed up to 90 d; granulation in 36%, secretion retention in 38%, no life-threatening complications
Vergnon (223)	1995	24	Silicone	Mixed	Significant improvement in pulmonary function after stent placement
Bolliger (224)	1993	31	Silicone	Malignant CAO	Easily placed and removed, 1emergent removal for migration; Karnofsky Index improved in 90% of patients
Dumon (141)	1990	66	Silicone	Mixed	Original description of a dedicated tracheobronchial stent
Saad (225)	2003	82	Metal	Mixed	Complications included infection (16%), obstructive granuloma (15%), and migration (5%); 14 of the 16 patients (88%) requiring mechanical ventilation before stent placement were subsequently extubated
Wood (226)	2003	143	Silicone (87%) and metal (13%)	Mixed	95% clinical success; 41% required multiple procedures; 42% overall complication rate; obstruction by secretions in 27%, migration in 5%, obstruction by granulation


Central Airway Obstruction
Emergent
Yes †
No ‡
Surgery ‡
Possible
Curative Resection
No
Submucosal or Extrinsic Lesion
Endobronchial Exophytic Lesion
Endobronchial Exophytic Lesion
Submucosal or Extrinsic Lesion
Dilation Stent *
Dilation / Coring Laser Photoresection Electrocautery Argon Plasma Coagulation +
Dilation / Coring Laser Photoresection Cryotherapy Electrocautery Photodynamic Therapy Brachytherapy Argon Plasma Coagulation External Beam Radiation +
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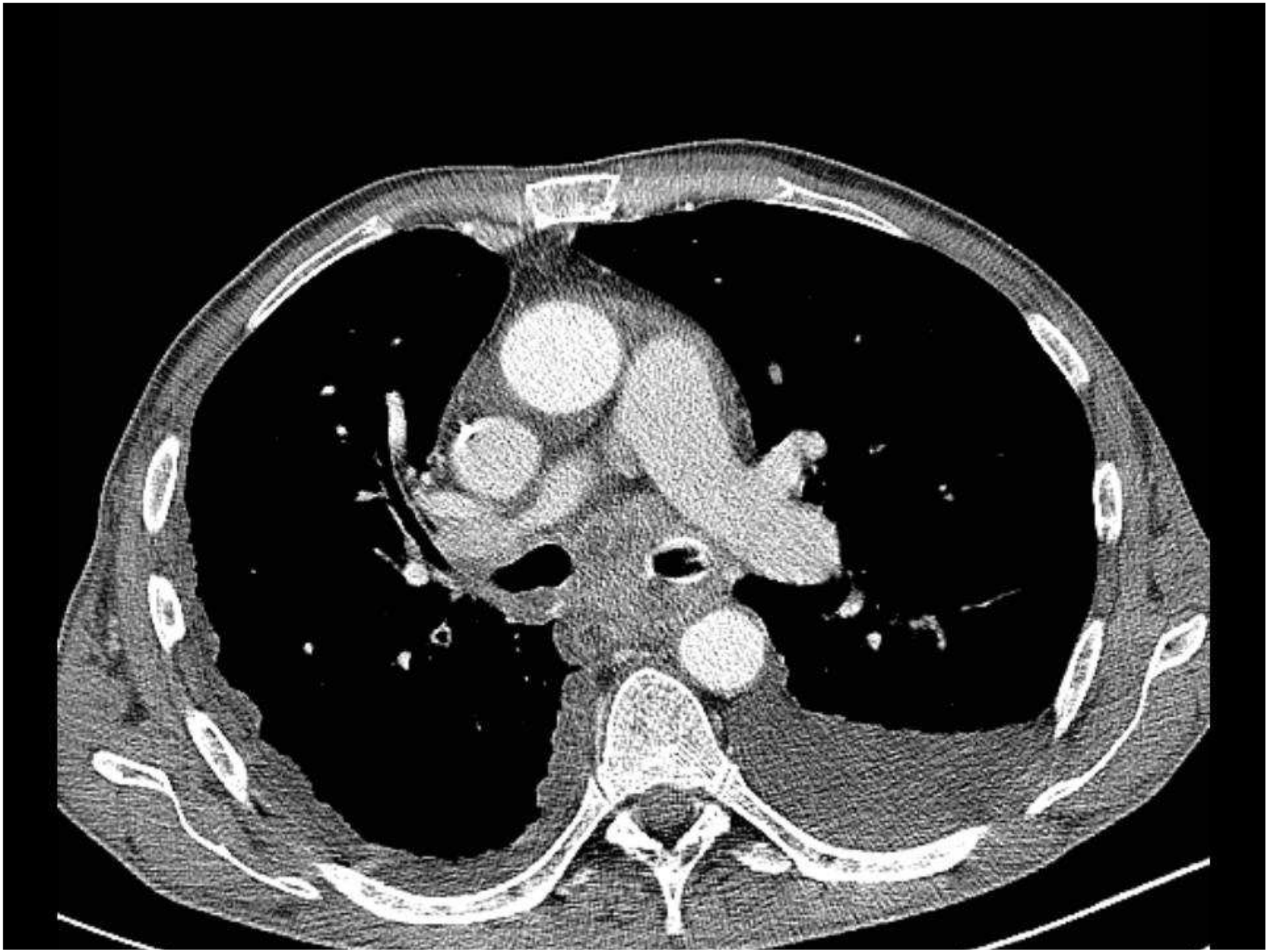

Les épanchements pleuraux

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Review

The evidence on the effectiveness of management for malignant pleural effusion: a systematic review

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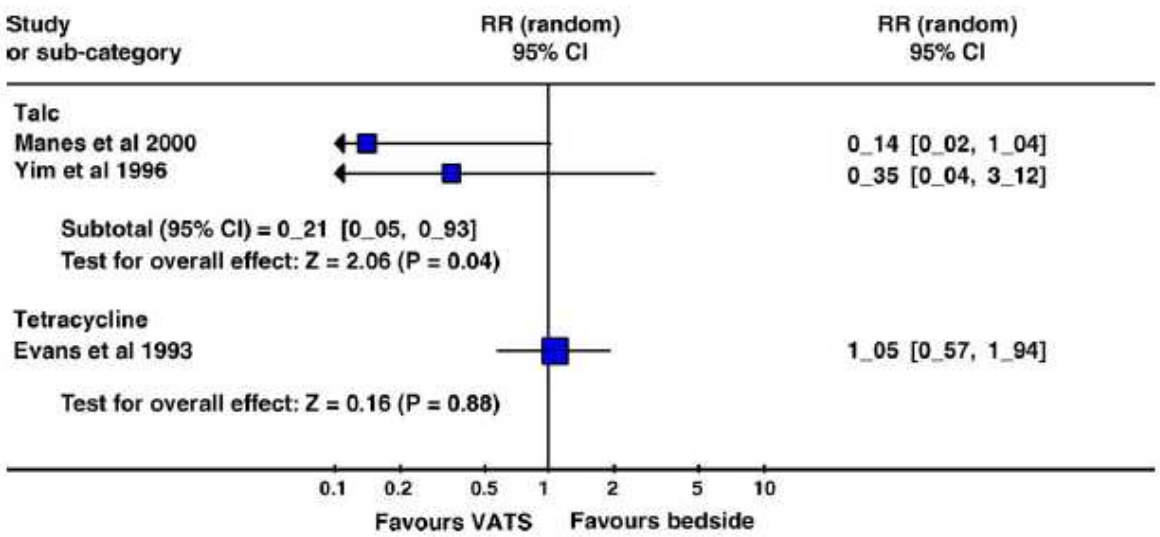


Fig. 7. RCTs comparing bedside and VATS techniques. The overall combined estimate of the effect is calculated for the first comparison and is presented only numerically (under subtotals 95% CI).

Table 4. Event rate % (successful pleurodesis) active versus control

comparisons	control rate	active rate
Sclerosant vs control	72%	84%
Talc vs control	60%	80%
Talc vs tetracyclines	57%	74%
Talc vs bleomycin	64%	79%
Tetracyclines vs control	66%	67%
Tetracyclines vs bleomycin	62%	63%
Bleomycin vs control	67%	64%
Thoracoscopic talc vs medical talc	81%	96%
Thoracoscopic sclerosant vs bedside sclerosant	53%	89%

Shaw et al. Cochrane 2004.

Comparison 3. Is thoracoscopic instillation of sclerosant better than bedside instillation

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Efficacy of pleurodesis	5	145	Risk Ratio (M-H, Fixed, 95% CI)	1.67 [1.34, 2.09]
1.1 Different sclerosants/tubes	5	145	Risk Ratio (M-H, Fixed, 95% CI)	1.67 [1.34, 2.09]
2 Mortality with pleurodesis	4	127	Risk Ratio (M-H, Fixed, 95% CI)	1.36 [0.88, 2.10]
2.1 Different sclerosants/tubes	4	127	Risk Ratio (M-H, Fixed, 95% CI)	1.36 [0.88, 2.10]

Comparison 4. Is thorascopic pleurodesis preferable to medical pleurodesis?

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Efficacy of pleurodesis	3	141	Risk Ratio (M-H, Fixed, 95% CI)	1.16 [0.99, 1.34]
1.1 Talc	2	112	Risk Ratio (M-H, Fixed, 95% CI)	1.19 [1.04, 1.36]
1.2 Tetracycline	1	29	Risk Ratio (M-H, Fixed, 95% CI)	0.93 [0.39, 2.22]
2 Mortality with pleurodesis	1	57	Risk Ratio (M-H, Fixed, 95% CI)	1.31 [0.85, 2.03]
2.1 Talc	1	57	Risk Ratio (M-H, Fixed, 95% CI)	1.31 [0.85, 2.03]
2.2 Tetracycline	0	0	Risk Ratio (M-H, Fixed, 95% CI)	Not estimable

Hémoptysies massives

- Revue rétrospective de 877 cas de cancer bronchique
- 29 hémoptysies fatales (3,3%)
- Facteur favorisant: épidermoïde, tumeur cavitée, bronche souche

Miller. Cancer; 1980: 200.

Factors associated with fatal hemoptysis in cancer patients.

R J Panos, L F Barr, T J Walsh and H J Silverman

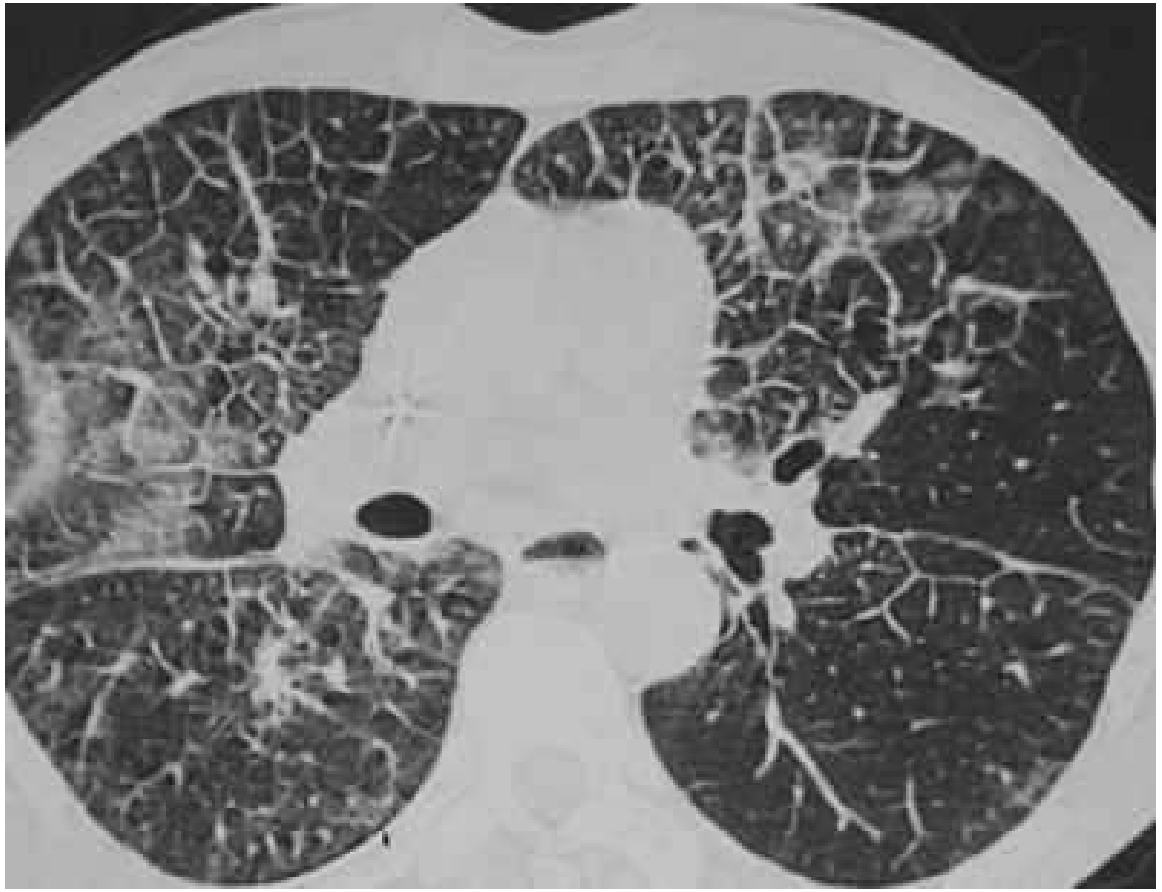
Chest 1988:94:1008-1013

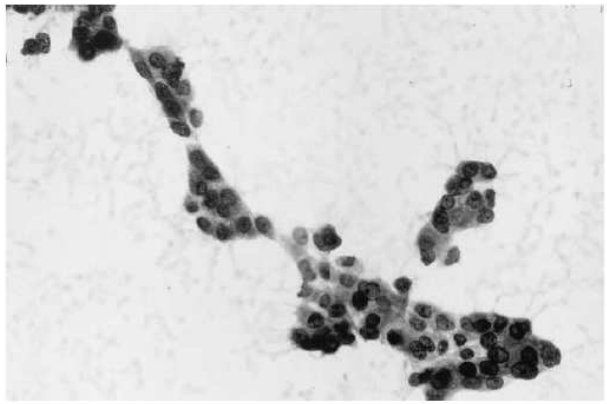
Table 3—*Clinical Features of Patients with Solid Tumors*

Feature	Fatal Hemoptysis, no. (%)	Nonfatal Hemoptysis, no. (%)
No. of patients	11	23
Age (x ± SD), yr	65.7 ± 4.5	62.2 ± 2.5
Bronchogenic carcinoma	7 (64)	15 (65)
Cell type		
Squamous cell/necrosis	6/6* (86)	7/1 (47)
Adenosquamous	0 (0)	2 (13)
Adenocarcinoma	0 (0)	4 (27)
Large cell	1 (14)	1 (7)
Small cell	0 (0)	1 (7)
Metastatic carcinoma	2 (18)	8 (35)
Endobronchial lesion	0 (0)	6 (75)
Diffuse alveolar damage	2 (100)	0 (0)
Unknown	0 (0)	2 (25)
Esophageal carcinoma	2 (18)	0 (0)

*$p<0.01$

Les emboles néoplasiques





Série autopsique:
3 à 26% des tumeurs solides

Table. Primary Tumors and Reported Tumor Embolism

Malignancy	Number of Cases	References
Breast	29	(3–5,8–20)
Stomach	12	(3,4,7,14,15,18,21–23)
Lung	11	(4,5,15,24)
Liver	9	(3,4,8)
Prostate	8	(3,12,15)
Pancreas	6	(3,4,17)
Bone	4	(4,7,25)
Undifferentiated carcinoma	4	(3,15,26)
Ovary	3	(5,27,28)
Bladder	3	(11,29)
Cervix	3	(7,30,31)
Colorectal	3	(32–34)
Kidney	2	(15,25)
Mesothelioma	2	(15)
Wilms' tumor	2	(35,36)
Other*	8	(7,15,25,37,38)
Total	109	

* One each of the following: esophageal, parotid, melanoma, myxoma, thyroid, trophoblastic, vulvar carcinomas, and neurogenic sarcoma.

Roberts et al. Am J Med. 2003: 228.