INDICATIONS EN ENDOSCOPIE INTERVENTIONNELLE

1. CBNPC au stade précoce : carcinome in situ (CIS) et micro-invasif (radio-occulte, < 3 mm de profondeur)

Lors de l'endoscopie initiale, les zones biopsiées doivent être clairement précisées et localisées. Avant traitement, une endoscopie souple avec autofluorescence ou Narrow Band Imaging (NBI) est recommandée, pour permettre une cartographie précise des lésions et la recherche d'autres lésions pré-cancéreuses en raison du phénomène de cancérisation de champ (143)**.** Les lésions à traiter doivent être accessibles et localisées.

1.1 Carcinome in situ

- **Pourquoi traiter ?**

  Plusieurs études (144–146) ont montré que les CIS pouvaient régresser mais aussi persister ou évoluer vers un carcinome invasif dans 21 à 56% des cas. Cette évolution imprévisible incite à les traiter. Un scanner thoracique est recommandé.

- **Pourquoi un traitement endoscopique ?**

  La résection chirurgicale n'est pas à privilégier d'emblée en raison de l'incertitude de l'évolution des CIS. Elle peut par ailleurs rendre le patient inopérable en cas d'apparition ultérieure d'un authentique cancer bronchique dans un autre territoire. La prise en charge par voie endoscopique a montré son efficacité tout en préservant le parenchyme pulmonaire et la fonction respiratoire du patient.

- **Quels moyens thérapeutiques ?**

  La cryothérapie (133,134,147), la thermocoagulation (131,148), la photothérapie dynamique (148–150) sont à privilégier en première intention. La curiethérapie endobronchique (151–153) est à réserver dans certains cas particuliers, en deuxième intention (132). Elles sont efficaces et réalisables en endoscopie souple sous anesthésie locale**.** Le taux de réponse complète obtenu avec ces techniques se situe entre 80 et 94% selon les études (147–154).

  La cryothérapie est la méthode qui paraît la mieux adaptée en raison de sa capacité à épargner le tissu sain et de l'absence de risque de sténose bronchique cicatricielle ou de perforation.

  La thermocoagulation n'est pas adaptée pour les lésions (quasi-)circonférentielles en raison du risque de sténose bronchique cicatricielle.

  La photothérapie dynamique est la méthode la mieux étudiée dans cette indication mais elle reste lourde et onéreuse et présente des effets indésirables comme le risque de sténose bronchique cicatricielle ou une photosensibilité persistant plusieurs semaines. Dans l'étude de Usuda *et al.,* le photosensibilisant utilisé n'est pas le Photofrin® mais une molécule de 2ème génération, le NPe6, susceptible de pouvoir traiter des lésions de diamètre > 10 mm (150).

- L'utilisation du laser Nd :YAG (155) expose au risque important de perforation bronchique et n'est donc pas recommandée dans cette indication (143).

1.2 Carcinomes micro-invasifs

- **Pourquoi traiter ?**

  Le carcinome micro-invasif est un cancer évolutif. Un bilan d'extension est nécessaire, avec notamment la réalisation d'un PET scan, afin de vérifier l'absence d'envahissement ganglionnaire, et à distance.

- **Quels moyens thérapeutiques ?**

  La résection chirurgicale reste le traitement de référence. Des alternatives non chirurgicales sont possibles, notamment la curiethérapie endo-bronchique (153). Les cas doivent être présentés en RCP.

1.3 Quel suivi après traitement endoscopique des CIS et carcinomes micro-invasifs ?

Le taux de récidive sur la zone traitée est compris entre 0 et 28% selon les études (147–149,151–154), sous la forme d'un nouveau CIS ou d'un carcinome invasif. Il est donc conseillé d'effectuer une surveillance par endoscopie bronchique souple 3 mois après le geste, puis tous les 6 mois pendant 5 ans en raison de ce risque de récidive ou du risque d'apparition d'autres lésions (phénomène de cancérisation de champ). Dans cette indication, il est conseillé d'utiliser l'auto-fluorescence ou le NBI. Les auteurs de ce document préconisent également un scanner thoracique annuel pendant cette période.

2. Obstruction des voies aériennes proximales

Une bronchoscopie souple préalable reste indispensable, même rapide chez un patient très dyspnéique, afin d'évaluer précisément les caractéristiques de l'obstruction (localisation, bourgeon endoluminal ou compression extrinsèque…) mais aussi dans le but d'éliminer une paralysie bilatérale des cordes vocales responsable au moins en partie de la symptomatologie et nécessitant une prise en charge ORL de première intention (cordectomie). Un scanner thoracique, avec reconstructions 3D si possible, permet d'évaluer la viabilité de l'arbre bronchique et du parenchyme pulmonaire d'aval et d'aider au choix de la prothèse (156).

2.1 Par une tumeur maligne endoluminale bourgeonnante

- **Pourquoi traiter ?**

Il est recommandé de traiter une obstruction proximale par une tumeur bourgeonnante afin de diminuer la dyspnée, de lever une atélectasie, de diminuer le risque d'hémoptysie et d'infection sous-sténotique (157). La désobstruction bronchique avant tout traitement anti-cancéreux permet d'améliorer l'état respiratoire et général du patient et donc sa tolérance aux traitements. La survie est améliorée si la désobstruction est réalisée précocement (158). L'adjonction d'un traitement complémentaire paraît également améliorer la survie (158,159).

La désobstruction bronchique ramène le pronostic de la maladie à celui d'un stade équivalent sans obstruction centrale. Trois études récentes confirment l'amélioration de la dyspnée, de la capacité à l'exercice, du VEMS, de la CV forcée, et de la qualité de vie après une bronchoscopie interventionnelle pour obstruction maligne (160–162). Dans SPOC, on note une amélioration de la qualité de vie dans les 2 bras (stent/pas de stent) avec un effet prolongé dans le bras stent (163).

Dans une étude récente, les facteurs associés à une amélioration de la dyspnée et de la qualité de vie chez les patients présentant un cancer avec obstruction des voies aériennes centrales étaient, entre autres : les patients naif de traitement, un délai court entre le diagnostic oncologique et la désobstruction, une meilleure fonction respiratoire et le fait de recevoir une chimiothérapie après la desobstruction (164).

En cas de détresse respiratoire aiguë, ces effets sont suffisamment bénéfiques et immédiats pour justifier un transfert en réanimation et l'intubation du patient dans l'attente du geste endoscopique (165,166), après évaluation du rapport bénéfice risque.

- **Quand traiter/Qui traiter ?**

Les critères objectifs que les auteurs de ce document retiennent pour poser l'indication d'une désobstruction bronchique sont (128,129,132,135) :

- CBNPC proximal accessible au bronchoscope rigide : trachée, carène, bronches souches, tronc intermédiaire
- Obstruction > 50% ou très symptomatique
- Voies aériennes et poumon fonctionnels et sains au-delà de l'obstruction
- PS ≤ 2 en dehors de l'altération de l'état général directement liée à l'obstruction

REFERENCES

1. Facciolongo N, Patelli M, Gasparini S, Lazzari Agli L, Salio M, Simonassi C, et al. Incidence of complications in bronchoscopy. Multicentre prospective study of 20,986 bronchoscopies. Monaldi Arch Chest Dis Arch Monaldi Mal Torace. mars 2009;71(1):8-14.
2. Hehn BT, Haponik E, Rubin HR, Lechtzin N, Diette GB. The relationship between age and process of care and patient tolerance of bronchoscopy. J Am Geriatr Soc. juill 2003;51(7):917-22.
3. Bechara RI. Practice and Complications of Flexible Bronchoscopy With Biopsy Procedures. J Bronchol Interv Pulmonol. juill 2005;12:139-42.
4. McLaughlin CW, Skabelund AJ, Easterling ER, Morris MJ. The Safety and Utility of Fiberoptic Bronchoscopy in the Very Elderly. J Bronchol Interv Pulmonol. oct 2018;25(4):300-4.
5. British Thoracic Society Bronchoscopy Guidelines Committee, a Subcommittee of Standards of Care Committee of British Thoracic Society. British Thoracic Society guidelines on diagnostic flexible bronchoscopy. Thorax. mars 2001;56 Suppl 1:i1-21.
6. Du Rand IA, Barber PV, Goldring J, Lewis RA, Mandal S, Munavvar M, et al. British Thoracic Society guideline for advanced diagnostic and therapeutic flexible bronchoscopy in adults. Thorax. nov 2011;66 Suppl 3:iii1-21.
7. Du Rand IA, Blaikley J, Booton R, Chaudhuri N, Gupta V, Khalid S, et al. British Thoracic Society guideline for diagnostic flexible bronchoscopy in adults: accredited by NICE. Thorax. août 2013;68 Suppl 1:i1-44.
8. Febvre M, Trosini-Desert V, Atassi K, Hermant C, Colchen A, Raspaud C, et al. [Diagnostic flexible bronchoscopy. Recommendations of the Endoscopy Working Group of the French Society of Pulmonary Medicine]. Rev Mal Respir. déc 2007;24(10):1363-92.
9. van Zwam JP, Kapteijns EFG, Lahey S, Smit HJM. Flexible bronchoscopy in supine or sitting position: a randomized prospective analysis of safety and patient comfort. J Bronchol Interv Pulmonol. janv 2010;17(1):29-32.
10. Yildiz P, Ozgül A, Yilmaz V. Changes in oxygen saturation in patients undergoing fiberoptic bronchoscopy. Chest. mars 2002;121(3):1007-8.
11. Milman N, Faurschou P, Grode G, Jørgensen A. Pulse oximetry during fibreoptic bronchoscopy in local anaesthesia: frequency of hypoxaemia and effect of oxygen supplementation. Respir Int Rev Thorac Dis. 1994;61(6):342-7.
12. Fang W-F, Chen Y-C, Chung Y-H, Woon W-T, Tseng C-C, Chang H-W, et al. Predictors of oxygen desaturation in patients undergoing diagnostic bronchoscopy. Chang Gung Med J. juin 2006;29(3):306-12.
13. Jones AM, O'Driscoll R. Do all patients require supplemental oxygen during flexible bronchoscopy? Chest. juin 2001;119(6):1906-9.
14. Schiffman PL, Westlake RE, Fourre JA, Leonard ET. Arterial oxygen saturation and cardiac rhythm during transoral fiberoptic bronchoscopy. J Med Soc N J. sept 1982;79(10):723-6.
15. Ouellette DR. Elevation of the Double Product During Flexible Bronchoscopy... : Journal of Bronchology & Interventional Pulmonology. J Bronchol Interv Pulmonol. avr 2008;15:73-7.
16. Davies L, Mister R, Spence DP, Calverley PM, Earis JE, Pearson MG. Cardiovascular consequences of fibreoptic bronchoscopy. Eur Respir J. mars 1997;10(3):695-8.
17. Katz AS, Michelson EL, Stawicki J, Holford FD. Cardiac arrhythmias. Frequency during fiberoptic bronchoscopy and correlation with hypoxemia. Arch Intern Med. avr 1981;141(5):603-6.
18. Dweik RA, Mehta AC, Meeker DP, Arroliga AC. Analysis of the safety of bronchoscopy after recent acute myocardial infarction. Chest. sept 1996;110(3):825-8.
19. Dunagan DP, Burke HL, Aquino SL, Chin R, Adair NE, Haponik EF. Fiberoptic bronchoscopy in coronary care unit patients: indications, safety, and clinical implications. Chest. déc 1998;114(6):1660-7.
20. Cordasco EM, Mehta AC, Ahmad M. Bronchoscopically induced bleeding. A summary of nine years' Cleveland clinic experience and review of the literature. Chest. oct 1991;100(4):1141-7.
21. Bernasconi M, Koegelenberg CFN, Koutsokera A, Ogna A, Casutt A, Nicod L, et al. Iatrogenic bleeding during flexible bronchoscopy: risk factors, prophylactic measures and management. ERJ Open Res. avr 2017;3(2).
22. Bjørtuft O, Brosstad F, Boe J. Bronchoscopy with transbronchial biopsies: measurement of bleeding volume and evaluation of the predictive value of coagulation tests. Eur Respir J. nov 1998;12(5):1025-7.
23. Diette GB, Wiener CM, White P. The higher risk of bleeding in lung transplant recipients from bronchoscopy is independent of traditional bleeding risks: results of a prospective cohort study. Chest. févr 1999;115(2):397-402.
24. Trosini-Désert V, Vergnon JM, Collet JP, Montalescot G, Similowski T, Groupe d'Endoscopie bronchique de Langue Française. [Fibreoptic bronchoscopy and anti-platelet agents: a risk-benefit analysis]. Rev Mal Respir. janv 2007;24(1):48-56.
25. Kozak EA, Brath LK. Do « screening » coagulation tests predict bleeding in patients undergoing fiberoptic bronchoscopy with biopsy? Chest. sept 1994;106(3):703-5.
26. Zahreddine I, Atassi K, Fuhrman C, Febvre M, Maitre B, Housset B. [Impact of prior biological assessment of coagulation on the hemorrhagic risk of fiberoptic bronchoscopy]. Rev Mal Respir. juin 2003;20(3 Pt 1):341-6.
27. Abuqayyas S, Raju S, Bartholomew JR, Abu Hweij R, Mehta AC. Management of antithrombotic agents in patients undergoing flexible bronchoscopy. Eur Respir Rev Off J Eur Respir Soc. 30 sept 2017;26(145).
28. Metha N. Should Renal Insufficiency Be a Relative Contraindication to... : Journal of Bronchology & Interventional Pulmonology [Internet]. LWW. [cité 9 nov 2016]. Disponible sur: http://journals.lww.com/bronchology/Fulltext/2005/04000/Should_Renal_Insufficiency_Be_a_Relative.5.aspx
29. Jain P, Sandur S, Meli Y, Arroliga AC, Stoller JK, Mehta AC. Role of flexible bronchoscopy in immunocompromised patients with lung infiltrates. Chest. févr 2004;125(2):712-22.
30. Shannon VR, Andersson BS, Lei X, Champlin RE, Kontoyiannis DP. Utility of early versus late fiberoptic bronchoscopy in the evaluation of new pulmonary infiltrates following hematopoietic stem cell transplantation. Bone Marrow Transplant. avr 2010;45(4):647-55.
31. Weiss SM, Hert RC, Gianola FJ, Clark JG, Crawford SW. Complications of fiberoptic bronchoscopy in thrombocytopenic patients. Chest. oct 1993;104(4):1025-8.
32. Rebulla P. Platelet transfusion trigger in difficult patients. Transfus Clin Biol. juin 2001;8(3):249-54.
33. Febvre M. [Systematic evaluation of hemostasis before a bronchoscopy--against]. Rev Mal Respir. janv 1999;16 Suppl 3:S69-70.

34. Veitch AM, Baglin TP, Gershlick AH, Harnden SM, Tighe R, Cairns S, et al. Guidelines for the management of anticoagulant and antiplatelet therapy in patients undergoing endoscopic procedures. Gut. sept 2008;57(9):1322-9.
35. Veitch AM, Vanbiervliet G, Gershlick AH, Boustiere C, Baglin TP, Smith L-A, et al. Endoscopy in patients on antiplatelet or anticoagulant therapy, including direct oral anticoagulants: British Society of Gastroenterology (BSG) and European Society of Gastrointestinal Endoscopy (ESGE) guidelines. Endoscopy. avr 2016;48(4):385-402.
36. Pathak V, Allender JE, Grant MW. Management of anticoagulant and antiplatelet therapy in patients undergoing interventional pulmonary procedures. Eur Respir Rev Off J Eur Respir Soc. 30 sept 2017;26(145).
37. Siegal DM, Curnutte JT, Connolly SJ, Lu G, Conley PB, Wiens BL, et al. Andexanet Alfa for the Reversal of Factor Xa Inhibitor Activity. N Engl J Med. 17 déc 2015;373(25):2413-24.
38. Herth FJF, Becker HD, Ernst A. Aspirin does not increase bleeding complications after transbronchial biopsy. Chest. oct 2002;122(4):1461-4.
39. Hittelet A, Devière J. Management of anticoagulants before and after endoscopy. Can J Gastroenterol J Can Gastroenterol. mai 2003;17(5):329-32.
40. Yousfi M, Gostout CJ, Baron TH, Hernandez JL, Keate R, Fleischer DE, et al. Postpolypectomy lower gastrointestinal bleeding: potential role of aspirin. Am J Gastroenterol. sept 2004;99(9):1785-9.
41. Ernst A, Eberhardt R, Wahidi M, Becker HD, Herth FJF. Effect of routine clopidogrel use on bleeding complications after transbronchial biopsy in humans. Chest. mars 2006;129(3):734-7.
42. Stather DR, MacEachern P, Chee A, Tremblay A. Safety of endobronchial ultrasound-guided transbronchial needle aspiration for patients taking clopidogrel: a report of 12 consecutive cases. Respir Int Rev Thorac Dis. 2012;83(4):330-4.
43. Meena N, Abouzgheib W, Patolia S, Rosenheck J, Boujaoude Z, Bartter T. EBUS-TBNA and EUS-FNA: Risk Assessment for Patients Receiving Clopidogrel. J Bronchol Interv Pulmonol. oct 2016;23(4):303-7.
44. Gil H-I, Choe J, Jeong B-H, Um S-W, Jeon K, Hahn J-Y, et al. Safety of endobronchial ultrasound-guided transbronchial needle aspiration in patients with lung cancer within a year after percutaneous coronary intervention. Thorac Cancer. 2018;9(11):1390-7.
45. Webb TN, Flenaugh E, Martin R, Parks C, Bechara RI. Effect of Routine Clopidogrel Use on Bleeding Complications After Endobronchial Ultrasound-guided Fine Needle Aspiration. J Bronchol Interv Pulmonol. janv 2019;26(1):10-4.
46. Cadroy Y, Thalamas C, Sakariassen K, Boneu B. Superior efficacy of clopidogrel plus acetylsalicylic acid compared with extended-release dipyridamole plus acetylsalicylic acid in preventing arterial thrombogenesis in healthy volunteers. Thromb Res. 2005;116(4):293-300.
47. Collet JP, Himbet F, Steg PG. Myocardial infarction after aspirin cessation in stable coronary artery disease patients. Int J Cardiol. déc 2000;76(2-3):257-8.
48. Collet JP, Montalescot G, Blanchet B, Tanguy ML, Golmard JL, Choussat R, et al. Impact of prior use or recent withdrawal of oral antiplatelet agents on acute coronary syndromes. Circulation. 19 oct 2004;110(16):2361-7.
49. Kałuza GL, Joseph J, Lee JR, Raizner ME, Raizner AE. Catastrophic outcomes of noncardiac surgery soon after coronary stenting. J Am Coll Cardiol. avr 2000;35(5):1288-94.
50. Kariyawasam HH, Aizen M, Kay AB, Robinson DS. Safety and tolerability of three consecutive bronchoscopies after allergen challenge in volunteers with mild asthma. Thorax. juin 2007;62(6):557-8.
51. Elston WJ, Whittaker AJ, Khan LN, Flood-Page P, Ramsay C, Jeffery PK, et al. Safety of research bronchoscopy, biopsy and bronchoalveolar lavage in asthma. Eur Respir J. sept 2004;24(3):375-7.
52. Tapanainen L, Lindqvist A, Halme M, Laitinen LA. Investigative bronchoscopy and endobronchial biopsy is well tolerated in hyperreactive asthma patients. Respir Med. juin 2002;96(6):466-8.
53. Peacock AJ, Benson-Mitchell R, Godfrey R. Effect of fibreoptic bronchoscopy on pulmonary function. Thorax. janv 1990;45(1):38-41.
54. Chechani V. Flexible Bronchoscopy in Patients with Hypercapnia. : Journal of Bronchology & Interventional Pulmonology. J Bronchol Interv Pulmonol. juill 2000;7:226-32.
55. Rivera MP, Mehta AC, American College of Chest Physicians. Initial diagnosis of lung cancer: ACCP evidence-based clinical practice guidelines (2nd edition). Chest. sept 2007;132(3 Suppl):131S-148S.
56. van der Drift MA, van der Wilt G-J, Thunnissen FBJM, Janssen JP. A prospective study of the timing and cost-effectiveness of bronchial washing during bronchoscopy for pulmonary malignant tumors. Chest. juill 2005;128(1):394-400.
57. McLean AN, Semple PA, Franklin DH, Petrie G, Millar EA, Douglas JG. The Scottish multi-centre prospective study of bronchoscopy for bronchial carcinoma and suggested audit standards. Respir Med. sept 1998;92(9):1110-5.
58. Acharya K V, B U, Shenoy A, Holla R. Utility of Various Bronchoscopic Modalities in Lung Cancer Diagnosis. Asian Pac J Cancer Prev APJCP. 27 2017;18(7):1931-6.
59. Dasgupta A, Jain P, Minai OA, Sandur S, Meli Y, Arroliga AC, et al. Utility of transbronchial needle aspiration in the diagnosis of endobronchial lesions. Chest. mai 1999;115(5):1237-41.
60. Shure D, Fedullo PF. Transbronchial needle aspiration in the diagnosis of submucosal and peribronchial bronchogenic carcinoma. Chest. juill 1985;88(1):49-51.
61. Gellert AR, Rudd RM, Sinha G, Geddes DM. Fibreoptic bronchoscopy: effect of multiple bronchial biopsies on diagnostic yield in bronchial carcinoma. Thorax. sept 1982;37(9):684-7.
62. Popovich J, Kvale PA, Eichenhorn MS, Radke JR, Ohorodnik JM, Fine G. Diagnostic accuracy of multiple biopsies from flexible fiberoptic bronchoscopy. A comparison of central versus peripheral carcinoma. Am Rev Respir Dis. mai 1982;125(5):521-3.
63. Dietel M, Bubendorf L, Dingemans A-MC, Dooms C, Elmberger G, García RC, et al. Diagnostic procedures for non-small-cell lung cancer (NSCLC): recommendations of the European Expert Group. Thorax. févr 2016;71(2):177-84.
64. Rivera MP, Mehta AC, Wahidi MM. Establishing the diagnosis of lung cancer: Diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. Chest. mai 2013;143(5 Suppl):e142S-65S.
65. Minami D, Nakasuka T, Ando C, Iwamoto Md Y, Sato K, Fujiwara K, et al. Bronchoscopic diagnosis of peripheral pulmonary lung cancer employing sedation with fentanyl and midazolam. Respir Investig. sept 2017;55(5):314-7.
66. Steinfort DP, Vincent J, Heinze S, Antippa P, Irving LB. Comparative effectiveness of radial probe endobronchial ultrasound versus CT-guided needle biopsy for evaluation of peripheral pulmonary lesions: a randomized pragmatic trial. Respir Med. nov 2011;105(11):1704-11.
67. Steinfort DP, Khor YH, Manser RL, Irving LB. Radial probe endobronchial ultrasound for the diagnosis of peripheral lung cancer: systematic review and meta-analysis. Eur Respir J. avr 2011;37(4):902-10.

68. Han Y, Kim HJ, Kong KA, Kim SJ, Lee SH, Ryu YJ, et al. Diagnosis of small pulmonary lesions by transbronchial lung biopsy with radial endobronchial ultrasound and virtual bronchoscopic navigation versus CT-guided transthoracic needle biopsy: A systematic review and meta-analysis. PloS One. 2018;13(1):e0191590.
69. Nakai T, Matsumoto Y, Suzuk F, Tsuchida T, Izumo T. Predictive factors for a successful diagnostic bronchoscopy of ground-glass nodules. Ann Thorac Med. sept 2017;12(3):171-6.
70. Huang C-T, Tsai Y-J, Ho C-C, Yu C-J. The value of repeat radial-probe endobronchial ultrasound-guided transbronchial biopsy after initial non-diagnostic results in patients with peripheral pulmonary lesions. BMC Pulm Med. 17 oct 2017;17(1):132.
71. Bertoletti L, Robert A, Cottier M, Chambonniere ML, Vergnon J-M. Accuracy and feasibility of electromagnetic navigated bronchoscopy under nitrous oxide sedation for pulmonary peripheral opacities: an outpatient study. Respir Int Rev Thorac Dis. 2009;78(3):293-300.
72. Gildea TR, Mazzone PJ, Karnak D, Meziane M, Mehta AC. Electromagnetic navigation diagnostic bronchoscopy: a prospective study. Am J Respir Crit Care Med. 1 nov 2006;174(9):982-9.
73. Makris D, Scherpereel A, Leroy S, Bouchindhomme B, Faivre J-B, Remy J, et al. Electromagnetic navigation diagnostic bronchoscopy for small peripheral lung lesions. Eur Respir J. juin 2007;29(6):1187-92.
74. Eberhardt R, Anantham D, Herth F, Feller-Kopman D, Ernst A. Electromagnetic navigation diagnostic bronchoscopy in peripheral lung lesions. Chest. juin 2007;131(6):1800-5.
75. Mehta AC, Wang K-P. Teaching conventional transbronchial needle aspiration. A continuum. Ann Am Thorac Soc. déc 2013;10(6):685-9.
76. Naruke T, Suemasu K, Ishikawa S. Lymph node mapping and curability at various levels of metastasis in resected lung cancer. J Thorac Cardiovasc Surg. déc 1978;76(6):832-9.
77. Mountain CF. Regional lymph node classification for lung cancer staging. 1997;(111):1710-7.
78. Rusch VW, Crowley J, Giroux DJ, Goldstraw P, Im J-G, Tsuboi M, et al. The IASLC Lung Cancer Staging Project: Proposals for the revision of the N descriptors in the forthcoming seventh edition of the TNM classification for lung cancer. J Thorac Oncol. juill 2007;2(7):603-12.
79. Wahidi MM, Herth F, Yasufuku K, Shepherd RW, Yarmus L, Chawla M, et al. Technical Aspects of Endobronchial Ultrasound-Guided Transbronchial Needle Aspiration: CHEST Guideline and Expert Panel Report. Chest. mars 2016;149(3):816-35.
80. Fujiwara T, Yasufuku K, Nakajima T, Chiyo M, Yoshida S, Suzuki M, et al. The Utility of Sonographic Features During Endobronchial Ultrasound-Guided Transbronchial Needle Aspiration for Lymph Node Staging in Patients With Lung Cancer: A Standard Endobronchial Ultrasound Image Classification System. Chest. avr 2010;138(3):641-7.
81. Memoli JSW, El-Bayoumi E, Pastis NJ, Tanner NT, Gomez M, Huggins JT, et al. Using endobronchial ultrasound features to predict lymph node metastasis in patients with lung cancer. Chest. déc 2011;140(6):1550-6.
82. Garcia-Olivé I, Monsó E, Andreo F, Sanz J, Castellà E, Llatjós M, et al. Sensitivity of linear endobronchial ultrasonography and guided transbronchial needle aspiration for the identification of nodal metastasis in lung cancer staging. Ultrasound Med Biol. août 2009;35(8):1271-7.
83. Wang L, Wu W, Hu Y, Teng J, Zhong R, Han B, et al. Sonographic Features of Endobronchial Ultrasonography Predict Intrathoracic Lymph Node Metastasis in Lung Cancer Patients. Ann Thorac Surg. oct 2015;100(4):1203-9.
84. Satterwhite LG, Berkowitz DM, Parks CS, Bechara RI. Central intranodal vessels to predict cytology during endobronchial ultrasound transbronchial needle aspiration. J Bronchol Interv Pulmonol. oct 2011;18(4):322-8.
85. Nakajima T, Anayama T, Shingyoji M, Kimura H, Yoshino I, Yasufuku K. Vascular image patterns of lymph nodes for the prediction of metastatic disease during EBUS-TBNA for mediastinal staging of lung cancer. J Thorac Oncol Off Publ Int Assoc Study Lung Cancer. juin 2012;7(6):1009-14.
86. Dooms C, Vander Borght S, Yserbyt J, Testelmans D, Wauters E, Nackaerts K, et al. A Randomized Clinical Trial of Flex 19G Needles versus 22G Needles for Endobronchial Ultrasonography in Suspected Lung Cancer. Respir Int Rev Thorac Dis. 2018;96(3):275-82.
87. De Leyn P, Dooms C, Kuzdzal J, Lardinois D, Passlick B, Rami-Porta R, et al. Revised ESTS guidelines for preoperative mediastinal lymph node staging for non-small-cell lung cancer. Eur J Cardio-Thorac Surg Off J Eur Assoc Cardio-Thorac Surg. mai 2014;45(5):787-98.
88. Dooms C, Muylle I, Yserbyt J, Ninane V. Endobronchial ultrasound in the management of nonsmall cell lung cancer. Eur Respir Rev Off J Eur Respir Soc. 1 juin 2013;22(128):169-77.
89. Lee HS, Lee GK, Lee H-S, Kim MS, Lee JM, Kim HY, et al. Real-time endobronchial ultrasound-guided transbronchial needle aspiration in mediastinal staging of non-small cell lung cancer: how many aspirations per target lymph node station? Chest. août 2008;134(2):368-74.
90. Casal RF, Staerkel GA, Ost D, Almeida FA, Uzbeck MH, Eapen GA, et al. Randomized clinical trial of endobronchial ultrasound needle biopsy with and without aspiration. Chest. sept 2012;142(3):568-73.
91. Nasir BS, Yasufuku K, Liberman M. When Should Negative Endobronchial Ultrasonography Findings be Confirmed by a More Invasive Procedure? Ann Surg Oncol. 10 janv 2017;
92. Oki M, Saka H, Kitagawa C, Kogure Y, Murata N, Adachi T, et al. Rapid on-site cytologic evaluation during endobronchial ultrasound-guided transbronchial needle aspiration for diagnosing lung cancer: a randomized study. Respir Int Rev Thorac Dis. 2013;85(6):486-92.
93. Murakami Y, Oki M, Saka H, Kitagawa C, Kogure Y, Ryuge M, et al. Endobronchial ultrasound-guided transbronchial needle aspiration in the diagnosis of small cell lung cancer. Respir Investig. mai 2014;52(3):173-8.
94. Griffin AC, Schwartz LE, Baloch ZW. Utility of on-site evaluation of endobronchial ultrasound-guided transbronchial needle aspiration specimens. CytoJournal. 2011;8:20.
95. van der Heijden EHFM, Casal RF, Trisolini R, Steinfort DP, Hwangbo B, Nakajima T, et al. Guideline for the acquisition and preparation of conventional and endobronchial ultrasound-guided transbronchial needle aspiration specimens for the diagnosis and molecular testing of patients with known or suspected lung cancer. Respir Int Rev Thorac Dis. 2014;88(6):500-17.
96. Sakairi Y, Nakajima T, Yasufuku K, Ikebe D, Kageyama H, Soda M, et al. EML4-ALK fusion gene assessment using metastatic lymph node samples obtained by endobronchial ultrasound-guided transbronchial needle aspiration. Clin Cancer Res Off J Am Assoc Cancer Res. 15 oct 2010;16(20):4938-45.
97. van der Heijden EHFM, Casal RF, Trisolini R, Steinfort DP, Hwangbo B, Nakajima T, et al. Guideline for the acquisition and preparation of conventional and endobronchial ultrasound-guided transbronchial needle aspiration specimens for the diagnosis and molecular testing of patients with known or suspected lung cancer. Respir Int Rev Thorac Dis. 2014;88(6):500-17.
98. Chaddha U, Hogarth DK, Murgu S. The role of endobronchial ultrasound transbronchial needle aspiration for programmed death ligand 1 testing and next generation sequencing in advanced non-small cell lung cancer. Ann Transl Med. août 2019;7(15):351.

99. Izumo T, Matsumoto Y, Chavez C, Tsuchida T. Re-biopsy by endobronchial ultrasound procedures for mutation analysis of non-small cell lung cancer after EGFR tyrosine kinase inhibitor treatment. BMC Pulm Med. 26 juill 2016;16(1):106.
100. Goag EK, Lee JM, Chung KS, Kim SY, Leem AY, Song JH, et al. Usefulness of Bronchoscopic Rebiopsy of Non-Small Cell Lung Cancer with Acquired Resistance to Epidermal Growth Factor Receptor-Tyrosine Kinase Inhibitor. J Cancer. 2018;9(6):1113-20.
101. Kim J, Kang HJ, Moon SH, Lee JM, Kim HY, Lee G-K, et al. Endobronchial Ultrasound-Guided Transbronchial Needle Aspiration for Re-biopsy in Previously Treated Lung Cancer. Cancer Res Treat Off J Korean Cancer Assoc. oct 2019;51(4):1488-99.
102. Heymann JJ, Bulman WA, Swinarski D, Pagan CA, Crapanzano JP, Haghighi M, et al. PD-L1 expression in non-small cell lung carcinoma: Comparison among cytology, small biopsy, and surgical resection specimens. Cancer Cytopathol. déc 2017;125(12):896-907.
103. Biswas A, Leon ME, Drew P, Fernandez-Bussy S, Furtado LV, Jantz MA, et al. Clinical performance of endobronchial ultrasound-guided transbronchial needle aspiration for assessing programmed death ligand-1 expression in nonsmall cell lung cancer. Diagn Cytopathol. mai 2018;46(5):378-83.
104. Sakakibara R, Inamura K, Tambo Y, Ninomiya H, Kitazono S, Yanagitani N, et al. EBUS-TBNA as a Promising Method for the Evaluation of Tumor PD-L1 Expression in Lung Cancer. Clin Lung Cancer. sept 2017;18(5):527-534.e1.
105. Skov BG, Skov T. Paired Comparison of PD-L1 Expression on Cytologic and Histologic Specimens From Malignancies in the Lung Assessed With PD-L1 IHC 28-8pharmDx and PD-L1 IHC 22C3pharmDx. Appl Immunohistochem Mol Morphol AIMM. août 2017;25(7):453-9.
106. Büttner R, Gosney JR, Skov BG, Adam J, Motoi N, Bloom KJ, et al. Programmed Death-Ligand 1 Immunohistochemistry Testing: A Review of Analytical Assays and Clinical Implementation in Non-Small-Cell Lung Cancer. J Clin Oncol Off J Am Soc Clin Oncol. 20 oct 2017;JCO2017747642.
107. Kim S, Koh J, Kwon D, Keam B, Go H, Kim YA, et al. Comparative analysis of PD-L1 expression between primary and metastatic pulmonary adenocarcinomas. Eur J Cancer Oxf Engl 1990. 2017;75:141-9.
108. Sakata KK, Midthun DE, Mullon JJ, Kern RM, Nelson DR, Edell ES, et al. Comparison of Programmed Death Ligand-1 Immunohistochemical Staining Between Endobronchial Ultrasound Transbronchial Needle Aspiration and Resected Lung Cancer Specimens. Chest. oct 2018;154(4):827-37.
109. Silvestri GA, Gonzalez AV, Jantz MA, Margolis ML, Gould MK, Tanoue LT, et al. Methods for staging non-small cell lung cancer: Diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. Chest. mai 2013;143(5 Suppl):e211S-50S.
110. Chouaid C, Salaün M, Gounant V, Febvre M, Vergnon J-M, Jouniaux V, et al. Clinical efficacy and cost-effectiveness of endobronchial ultrasound-guided transbronchial needle aspiration for preoperative staging of non-small-cell lung cancer: Results of a French prospective multicenter trial (EVIEPEB). PloS One. 2019;14(1):e0208992.
111. Silvestri GA, Gould MK, Margolis ML, Tanoue LT, McCrory D, Toloza E, et al. Non invasive staging of non-small cell lung cancer. Chest. 2007;132(3 suppl):178S-201S.
112. Hishida T, Yoshida J, Nishimura M, Nishiwaki Y, Nagai K. Problems in the current diagnostic standards of clinical N1 non-small cell lung cancer. Thorax. juin 2008;63(6):526-31.
113. Wang J, Welch K, Wang L, Kong F-MS. Negative predictive value of positron emission tomography and computed tomography for stage T1-2N0 non-small-cell lung cancer: a meta-analysis. Clin Lung Cancer. mars 2012;13(2):81-9.
114. Lee PC, Port JL, Korst RJ, Liss Y, Meherally DN, Altorki NK. Risk factors for occult mediastinal metastases in clinical stage I non-small cell lung cancer. Ann Thorac Surg. juill 2007;84(1):177-81.
115. Nakajima T, Yasufuku K, Fujiwara T, Chiyo M, Sekine Y, Shibuya K, et al. Endobronchial ultrasound-guided transbronchial needle aspiration for the diagnosis of intrapulmonary lesions. J Thorac Oncol Off Publ Int Assoc Study Lung Cancer. sept 2008;3(9):985-8.
116. Tournoy KG, Rintoul RC, van Meerbeeck JP, Carroll NR, Praet M, Buttery RC, et al. EBUS-TBNA for the diagnosis of central parenchymal lung lesions not visible at routine bronchoscopy. Lung Cancer Amst Neth. janv 2009;63(1):45-9.
117. Zhao H, Xie Z, Zhou Z-L, Sui X-Z, Wang J. Diagnostic value of endobronchial ultrasound-guided transbronchial needle aspiration in intrapulmonary lesions. Chin Med J (Engl). nov 2013;126(22):4312-5.
118. Sarwate D, Sarkar S, Krimsky WS, Burgan CM, Patel K, Evans R, et al. Optimization of mediastinal staging in potential candidates for stereotactic radiosurgery of the chest. J Thorac Cardiovasc Surg. juill 2012;144(1):81-6.
119. Steinfort DP, Siva S, Leong TL, Rose M, Herath D, Antippa P, et al. Systematic Endobronchial Ultrasound-guided Mediastinal Staging Versus Positron Emission Tomography for Comprehensive Mediastinal Staging in NSCLC Before Radical Radiotherapy of Non-small Cell Lung Cancer: A Pilot Study. Medicine (Baltimore). févr 2016;95(8):e2488.
120. Schonewolf CA, Verma V, Post CM, Berman AT, Frick MA, Vachani A, et al. Outcomes of invasive mediastinal nodal staging versus positron emission tomography staging alone for early-stage non-small cell lung cancer treated with stereotactic body radiation therapy. Lung Cancer Amst Neth. 14 juill 2017;
121. Vial MR, Khan KA, O'Connell O, Peng SA, Gomez DR, Chang JY, et al. Endobronchial Ultrasound-Guided Transbronchial Needle Aspiration in the Nodal Staging of Stereotactic Ablative Body Radiotherapy Patients. Ann Thorac Surg. mai 2017;103(5):1600-5.
122. Annema JT, van Meerbeeck JP, Rintoul RC, Dooms C, Deschepper E, Dekkers OM, et al. Mediastinoscopy vs endosonography for mediastinal nodal staging of lung cancer: a randomized trial. JAMA. 24 nov 2010;304(20):2245-52.
123. Vilmann P, Clementsen PF, Colella S, Siemsen M, De Leyn P, Dumonceau J-M, et al. Combined endobronchial and esophageal endosonography for the diagnosis and staging of lung cancer: European Society of Gastrointestinal Endoscopy (ESGE) Guideline, in cooperation with the European Respiratory Society (ERS) and the European Society of Thoracic Surgeons (ESTS). Endoscopy. juin 2015;47(6):c1.
124. Dong Z, Li H, Jiang H, Wu C. Evaluation of cytology in lung cancer diagnosis based on EBUS-TBNA. J Cytol. juin 2017;34(2):73-7.
125. Uchimura K, Yamasaki K, Hirano Y, Sakagami K, Kido T, Mukae H, et al. The Successful Removal of a Broken Needle as an Unusual Complication of Endobronchial Ultrasound-guided Transbronchial Needle Aspiration (EBUS-TBNA): A Case Report and Literature Review. J UOEH. 2019;41(1):35-40.
126. Navani N, Brown JM, Nankivell M, Woolhouse I, Harrison RN, Jeebun V, et al. Suitability of endobronchial ultrasound-guided transbronchial needle aspiration specimens for subtyping and genotyping of non-small cell lung cancer: a multicenter study of 774 patients. Am J Respir Crit Care Med. 15 juin 2012;185(12):1316-22.
127. Miller DR, Mydin HH, Marshall ADL, Devereux GS, Currie GP. Fatal haemorrhage following endobronchial ultrasound-transbronchial needle aspiration: an unfortunate first. QJM Mon J Assoc Physicians. mars 2013;106(3):295-6.

128. Bolliger CT, Mathur PN, Beamis JF, Becker HD, Cavaliere S, Colt H, et al. ERS/ATS statement on interventional pulmonology. European Respiratory Society/American Thoracic Society. Eur Respir J. févr 2002;19(2):356-73.
129. Ernst A, Silvestri GA, Johnstone D, American College of Chest Physicians. Interventional pulmonary procedures: Guidelines from the American College of Chest Physicians. Chest. mai 2003;123(5):1693-717.
130. Verkindre C, Brichet A, Maurage CA, Ramon P, Homasson JP, Marquette CH. Morphological changes induced by extensive endobronchial electrocautery. Eur Respir J. oct 1999;14(4):796-9.
131. Tremblay A, Marquette C-H. Endobronchial electrocautery and argon plasma coagulation: a practical approach. Can Respir J J Can Thorac Soc. juin 2004;11(4):305-10.
132. Guibert N, Mazieres J, Marquette C-H, Rouviere D, Didier A, Hermant C. Integration of interventional bronchoscopy in the management of lung cancer. Eur Respir Rev Off J Eur Respir Soc. sept 2015;24(137):378-91.
133. Lee S-H, Choi W-J, Sung S-W, Kim Y-K, Kim C-H, Zo J-I, et al. Endoscopic cryotherapy of lung and bronchial tumors: a systematic review. Korean J Intern Med. juin 2011;26(2):137-44.
134. Vergnon J-M, Huber RM, Moghissi K. Place of cryotherapy, brachytherapy and photodynamic therapy in therapeutic bronchoscopy of lung cancers. Eur Respir J. juill 2006;28(1):200-18.
135. Vergnon J-M. [Supportive care. Endoscopic treatments for lung cancer]. Rev Mal Respir. oct 2008;25(8 Pt 2):3S160-166.
136. Akopov A, Rusanov A, Gerasin A, Kazakov N, Urtenova M, Chistyakov I. Preoperative endobronchial photodynamic therapy improves resectability in initially irresectable (inoperable) locally advanced non small cell lung cancer. Photodiagnosis Photodyn Ther. sept 2014;11(3):259-64.
137. Moghissi K, Dixon K, Thorpe JAC, Stringer M, Oxtoby C. Photodynamic therapy (PDT) in early central lung cancer: a treatment option for patients ineligible for surgical resection. Thorax. mai 2007;62(5):391-5.
138. Fernando HC, Landreneau RJ, Mandrekar SJ, Nichols FC, Hillman SL, Heron DE, et al. Impact of brachytherapy on local recurrence rates after sublobar resection: results from ACOSOG Z4032 (Alliance), a phase III randomized trial for high-risk operable non-small-cell lung cancer. J Clin Oncol Off J Am Soc Clin Oncol. 10 août 2014;32(23):2456-62.
139. Speiser BL, Spratling L. Remote afterloading brachytherapy for the local control of endobronchial carcinoma. Int J Radiat Oncol Biol Phys. 15 mars 1993;25(4):579-87.
140. Seven-Year Experience with the Dumon Prosthesis. : Journal of Bronchology & Interventional Pulmonology [Internet]. LWW. [cité 28 sept 2015]. Disponible sur: http://journals.lww.com/bronchology/Fulltext/1996/01000/Seven_Year_Experience_with_the_Dumon_Prosthesis_.3.aspx
141. Ernst A, Feller-Kopman D, Becker HD, Mehta AC. Central airway obstruction. Am J Respir Crit Care Med. 15 juin 2004;169(12):1278-97.
142. Husain SA, Finch D, Ahmed M, Morgan A, Hetzel MR. Long-term follow-up of ultraflex metallic stents in benign and malignant central airway obstruction. Ann Thorac Surg. avr 2007;83(4):1251-6.
143. Wisnivesky JP, Yung RC-W, Mathur PN, Zulueta JJ. Diagnosis and treatment of bronchial intraepithelial neoplasia and early lung cancer of the central airways: Diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. Chest. mai 2013;143(5 Suppl):e263S-77S.
144. Bota S, Auliac JB, Paris C, Métayer J, Sesboüé R, Nouvet G, et al. Follow-up of bronchial precancerous lesions and carcinoma in situ using fluorescence endoscopy. Am J Respir Crit Care Med. 1 nov 2001;164(9):1688-93.
145. Venmans BJ, van Boxem TJ, Smit EF, Postmus PE, Sutedja TG. Outcome of bronchial carcinoma in situ. Chest. juin 2000;117(6):1572-6.
146. Jeremy George P, Banerjee AK, Read CA, O'Sullivan C, Falzon M, Pezzella F, et al. Surveillance for the detection of early lung cancer in patients with bronchial dysplasia. Thorax. janv 2007;62(1):43-50.
147. Deygas N, Froudarakis M, Ozenne G, Vergnon JM. Cryotherapy in early superficial bronchogenic carcinoma. Chest. juill 2001;120(1):26-31.
148. Mathur PN, Edell E, Sutedja T, Vergnon J-M, American College of Chest Physicians. Treatment of early stage non-small cell lung cancer. Chest. janv 2003;123(1 Suppl):176S-180S.
149. Edell ES, Cortese DA. Photodynamic therapy in the management of early superficial squamous cell carcinoma as an alternative to surgical resection. Chest. nov 1992;102(5):1319-22.
150. Usuda J, Ichinose S, Ishizumi T, Hayashi H, Ohtani K, Maehara S, et al. Outcome of photodynamic therapy using NPe6 for bronchogenic carcinomas in central airways >1.0 cm in diameter. Clin Cancer Res Off J Am Assoc Cancer Res. 1 avr 2010;16(7):2198-204.
151. Pérol M, Caliandro R, Pommier P, Malet C, Montbarbon X, Carrie C, et al. Curative irradiation of limited endobronchial carcinomas with high-dose rate brachytherapy. Results of a pilot study. Chest. mai 1997;111(5):1417-23.
152. Marsiglia H, Baldeyrou P, Lartigau E, Briot E, Haie-Meder C, Le Chevalier T, et al. High-dose-rate brachytherapy as sole modality for early-stage endobronchial carcinoma. Int J Radiat Oncol Biol Phys. 1 juin 2000;47(3):665-72.
153. Aumont-le Guilcher M, Prevost B, Sunyach MP, Peiffert D, Maingon P, Thomas L, et al. High-dose-rate brachytherapy for non-small-cell lung carcinoma: a retrospective study of 226 patients. Int J Radiat Oncol Biol Phys. 15 mars 2011;79(4):1112-6.
154. van Boxem TJ, Venmans BJ, Schramel FM, van Mourik JC, Golding RP, Postmus PE, et al. Radiographically occult lung cancer treated with fibreoptic bronchoscopic electrocautery: a pilot study of a simple and inexpensive technique. Eur Respir J. janv 1998;11(1):169-72.
155. Cavaliere S, Foccoli P, Toninelli C. Nd: YAG Laser Therapy in Lung Cancer: An 11-Year Experience... : Journal of Bronchology & Interventional Pulmonology. J Bronchol Interv Pulmonol [Internet]. [cité 20 sept 2015]; Disponible sur: http://journals.lww.com/bronchology/Fulltext/1994/04000/Nd__YAG_Laser_Therapy_in_Lung_Cancer__An_11_Year.6.aspx
156. Asimakopoulos G, Beeson J, Evans J, Maiwand MO. Cryosurgery for malignant endobronchial tumors: analysis of outcome. Chest. juin 2005;127(6):2007-14.
157. Simoff MJ, Lally B, Slade MG, Goldberg WG, Lee P, Michaud GC, et al. Symptom management in patients with lung cancer: Diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. Chest. mai 2013;143(5 Suppl):e455S-97S.
158. Jeon K, Kim H, Yu C-M, Koh W-J, Suh GY, Chung MP, et al. Rigid bronchoscopic intervention in patients with respiratory failure caused by malignant central airway obstruction. J Thorac Oncol Off Publ Int Assoc Study Lung Cancer. mai 2006;1(4):319-23.
159. Han CC, Prasetyo D, Wright GM. Endobronchial palliation using Nd:YAG laser is associated with improved survival when combined with multimodal adjuvant treatments. J Thorac Oncol Off Publ Int Assoc Study Lung Cancer. janv 2007;2(1):59-64.
160. Oviatt PL, Stather DR, Michaud G, Maceachern P, Tremblay A. Exercise capacity, lung function, and quality of life after interventional bronchoscopy. J Thorac Oncol Off Publ Int Assoc Study Lung Cancer. janv 2011;6(1):38-42.

161. Ost DE, Ernst A, Grosu HB, Lei X, Diaz-Mendoza J, Slade M, et al. Therapeutic bronchoscopy for malignant central airway obstruction: success rates and impact on dyspnea and quality of life. Chest. mai 2015;147(5):1282-98.
162. Zaric B, Kovacevic T, Stojsic V, Sarcev T, Kocic M, Urosevic M, et al. Neodymium yttrium-aluminium-garnet laser resection significantly improves quality of life in patients with malignant central airway obstruction due to lung cancer. Eur J Cancer Care (Engl). juill 2015;24(4):560-6.
163. Vergnon JM, Thibout Y, Dutau H. Is a stent required after initial resection of an obstructive lung cancer. The lessons of the SPOC trial, the first randomized study in interventional bronchoscopy. ERS Int Congr 2013.
164. Ong P, Grosu HB, Debiane L, Casal RF, Eapen GA, Jimenez CA, et al. Long-term quality-adjusted survival following therapeutic bronchoscopy for malignant central airway obstruction. Thorax. 25 sept 2018;thoraxjnl-2018-211521.
165. Murgu S, Langer S, Colt H. Bronchoscopic intervention obviates the need for continued mechanical ventilation in patients with airway obstruction and respiratory failure from inoperable non-small-cell lung cancer. Respir Int Rev Thorac Dis. 2012;84(1):55-61.
166. Boyd M, Rubio E. The utility of interventional pulmonary procedures in liberating patients with malignancy-associated central airway obstruction from mechanical ventilation. Lung. oct 2012;190(5):471-6.
167. Guibert N, Mazieres J, Lepage B, Plat G, Didier A, Hermant C. Prognostic factors associated with interventional bronchoscopy in lung cancer. Ann Thorac Surg. janv 2014;97(1):253-9.
168. Wahidi MM, Unroe MA, Adlakha N, Beyea M, Shofer SL. The use of electrocautery as the primary ablation modality for malignant and benign airway obstruction. J Thorac Oncol Off Publ Int Assoc Study Lung Cancer. sept 2011;6(9):1516-20.
169. Simone CB, Friedberg JS, Glatstein E, Stevenson JP, Sterman DH, Hahn SM, et al. Photodynamic therapy for the treatment of non-small cell lung cancer. J Thorac Dis. févr 2012;4(1):63-75.
170. Nihei K, Ishikura S, Kawashima M, Ogino T, Ito Y, Ikeda H. Short-course palliative radiotherapy for airway stenosis in non-small cell lung cancer. Int J Clin Oncol. oct 2002;7(5):284-8.
171. Dagnault A, Ebacher A, Vigneault E, Boucher S. Retrospective study of 81 patients treated with brachytherapy for endobronchial primary tumor or metastasis. Brachytherapy. sept 2010;9(3):243-7.
172. Manali ED, Stathopoulos GT, Gildea TR, Fleming P, Thornton J, Xu M, et al. High dose-rate endobronchial radiotherapy for proximal airway obstruction due to lung cancer: 8-year experience of a referral center. Cancer Biother Radiopharm. avr 2010;25(2):207-13.
173. Hauswald H, Stoiber E, Rochet N, Lindel K, Grehn C, Becker HD, et al. Treatment of recurrent bronchial carcinoma: the role of high-dose-rate endoluminal brachytherapy. Int J Radiat Oncol Biol Phys. 1 juin 2010;77(2):373-7.
174. de Aquino Gorayeb MM, Gregório MG, de Oliveira EQ, Aisen S, Carvalho H de A. High-dose-rate brachytherapy in symptom palliation due to malignant endobronchial obstruction: a quantitative assessment. Brachytherapy. oct 2013;12(5):471-8.
175. Reveiz L, Rueda J-R, Cardona AF. Palliative endobronchial brachytherapy for non-small cell lung cancer. Cochrane Database Syst Rev. 2012;12:CD004284.
176. Rodrigues G, Macbeth F, Burmeister B, Kelly K-L, Bezjak A, Langer C, et al. Consensus statement on palliative lung radiotherapy: third international consensus workshop on palliative radiotherapy and symptom control. Clin Lung Cancer. janv 2012;13(1):1-5.
177. Bolliger CT, Sutedja TG, Strausz J, Freitag L. Therapeutic bronchoscopy with immediate effect: laser, electrocautery, argon plasma coagulation and stents. Eur Respir J. juin 2006;27(6):1258-71.
178. Saji H, Furukawa K, Tsutsui H, Tsuboi M, Ichinose S, Usuda J, et al. Outcomes of airway stenting for advanced lung cancer with central airway obstruction. Interact Cardiovasc Thorac Surg. oct 2010;11(4):425-8.
179. Vergnon JM, Costes F, Bayon MC, Emonot A. Efficacy of tracheal and bronchial stent placement on respiratory functional tests. Chest. mars 1995;107(3):741-6.
180. Razi SS, Lebovics RS, Schwartz G, Sancheti M, Belsley S, Connery CP, et al. Timely airway stenting improves survival in patients with malignant central airway obstruction. Ann Thorac Surg. oct 2010;90(4):1088-93.
181. Caplin ME, Baudin E, Ferolla P, Filosso P, Garcia-Yuste M, Lim E, et al. Pulmonary neuroendocrine (carcinoid) tumors: European Neuroendocrine Tumor Society expert consensus and recommendations for best practice for typical and atypical pulmonary carcinoids. Ann Oncol Off J Eur Soc Med Oncol ESMO. août 2015;26(8):1604-20.
182. Neuberger M, Hapfelmeier A, Schmidt M, Gesierich W, Reichenberger F, Morresi-Hauf A, et al. Carcinoid tumours of the lung and the « PEPPS » approach: evaluation of preoperative bronchoscopic tumour debulking as preparation for subsequent parenchyma-sparing surgery. BMJ Open Respir Res. 2015;2(1):e000090.
183. Bertoletti L, Elleuch R, Kaczmarek D, Jean-François R, Vergnon JM. Bronchoscopic cryotherapy treatment of isolated endoluminal typical carcinoid tumor. Chest. nov 2006;130(5):1405-11.
184. Brokx HAP, Paul MA, Postmus PE, Sutedja TG. Long-term follow-up after first-line bronchoscopic therapy in patients with bronchial carcinoids. Thorax. mai 2015;70(5):468-72.
185. Luckraz H, Amer K, Thomas L, Gibbs A, Butchart EG. Long-term outcome of bronchoscopically resected endobronchial typical carcinoid tumors. J Thorac Cardiovasc Surg. juill 2006;132(1):113-5.
186. Fuks L, Fruchter O, Amital A, Fox BD, Abdel Rahman N, Kramer MR. Long-term follow-up of flexible bronchoscopic treatment for bronchial carcinoids with curative intent. Diagn Ther Endosc. 2009;2009:782961.
187. Neyman K, Sundset A, Naalsund A, Espinoza A, Solberg S, Kongerud J, et al. Endoscopic treatment of bronchial carcinoids in comparison to surgical resection: a retrospective study. J Bronchol Interv Pulmonol. janv 2012;19(1):29-34.