

Online Supplement Table 1. Cohorts and case series reporting on infections related to airway stenting

First author, year [ref]	Study design, n of pts	Cause of obstruction ^a , number of patients	Stent type, number of stents placed	Site(s) of stricture	Number of stented patients with infectious complication, n/N (%)	Time interval ^b (number of patients ^c)	Type of infection (number of patients ^c), pathogen(s) identified	Interventional treatment in patients with infectious complication (number of patients receiving interventional treatment)	Mortality of patients with infectious complication, n/N (%)
Spanteka, 1991 [15]	retrospective case series, 4	benign, 4 (lung or heart-lung transplantation; immunosuppressive treatment)	Gianturco expanding metallic stents, 4	anastomotic site	1/4 (25)	14 months (1)	NR/NR	NR	NR
George, 1992 [17]	retrospective cohort, 15	malignant, 9; benign, 6 (lung or heart-lung transplantation immunosuppressive treatment, 3; other benign, 3)	Gianturco expanding metallic stents, NR	trachea; main bronchi	2/15 (13)	immediate post-operative period (1)	pneumonia (1)/NR	NR	1/2 (50)
Mondain, 1993 [18]	retrospective cohort, 54	benign, 54	Montgomery silicone stent, 54	larynx; trachea	7/54 (13)	NR	lung abscess (1); recurrent pneumonia (6), NR	NR	NR
Higgins, 1994 [19]	retrospective cohort, 14	benign, 14 (lung or heart-lung transplantation; immunosuppressive treatment)	Gianturco expanding metallic stents and silicon rubber stent, NR	anastomotic site	2/14 (14)	infection active at stent placement (2)	pneumonia (2), <i>Aspergillus fumigatus</i> , <i>Staphylococcus aureus</i>	NR	2/2 (100)
Anderson, 1995 [12]	retrospective case series, 5	benign, 5 (lung transplantation; immunosuppressive treatment)	Endoxane silicone stents, 6	main bronchi	1/5 (20)	infection active at stent placement (1)	NR, NR	NR	1/1 (100)
Wasserman, 1996 [20]	retrospective cohort, 10	malignant, 10	Dumon cylindrical silicone stent and dynamic bifurcated stent, 21	trachea; carina; main bronchi	7/10 (70)	NR	bronchial infection (3); pneumonia (4), <i>Staphylococcus aureus</i> , <i>Pseudomonas aeruginosa</i> , <i>Proteus mirabilis</i>	stent replacement (4)	4/7 (57)
Dasgupta, 1998 [21]	retrospective cohort, 37	malignant, 20; benign, 17	Wall self-expanding metallic stents, 52	main bronchi; intermediate bronchus; trachea	3/37 (8)	20 months (1)	pneumonia (1); bronchial infection (2), <i>Staphylococcus</i> spp.	removal of obstructive granule (1); stent removal (1)	0/1 (0)
Belleguic, 1999 [22]	retrospective cohort, 51	malignant, 51	Dumon silicone stent, 65; Wall self-expanding metallic stent, 1	trachea; main bronchi	2/51 (4)	NR	pneumonia (2), NR	NR	1/1 (100)
Sasano, 2001 [16]	retrospective cohort, 18	malignant, 15; benign, 3	nitinol expanding metallic stents, 24	trachea; main bronchi	1/18 (6)	NR	pneumonia (1)	NR	1/1 (100)
Herrera, 2001 [23]	retrospective cohort, 18	benign, 18 (lung transplantation; immunosuppressive treatment)	Gianturco expanding metal stents, 26	anastomotic site	2/18 (11)	infection active at stent placement (2)	pneumonia (1), <i>Aspergillus fumigatus</i> , <i>Pseudomonas aeruginosa</i>	NR	2/2 (100)
Madden, 2002 [24]	retrospective cohort, 25	malignant, 9; benign, 16 (lung transplantation; immunosuppressive treatment, 3; other benign, 13)	Ultraflex self-expanding metallic stents, 28	trachea; main bronchi	5/25 (20)	immediate postoperative period (1)	NR, NR	NR	1/5 (20)
Shin, 2003 [28]	prospective cohort, 35	malignant, 35	nitinol polyurethane covered, expanding metallic stents, 47	trachea; main bronchus; trachea	9/35 (26)	2–26 weeks ^d	pneumonia (9), NR	NR	9/9 (100)
Saad, 2003 [25]	retrospective cohort, 12	benign, 12 (lung transplantation; immunosuppressive treatment)	Wall self-expanding metallic stents, 10; Ultraflex self-expanding metallic stents, 5	anastomotic site	4/12 (33)	NR	bronchial infection (4), <i>Staphylococcus aureus</i>	stent removal (1)	NR

Saad, 2003 [26]	retrospective cohort, 82	malignant, 50; benign, 32 (lung or heart-lung transplantation with immunosuppressive treatment, 11; other benign, 21)	Wall self-expanding metallic stents, 90 ^e ; Ultraflex self-expanding metallic stents, 22 ^e	trachea; main bronchi; intermediate bronchus; left lower lobe	13/82 (16)	NR	bronchial infection (12); intraluminal stent infection (fungus ball) (1), staphylococcus aureus, fungus	stent removal (1)	NR
Geller, 2004[13]	retrospective case series, 9	benign, 9	Palmaz balloon-expanding stent, 13	trachea; main bronchus	2/9 (22)	8 months (1); 22 months (1)	upper airway infection (1); pneumonia (1), NR	NR	2/2 (100)
Shin, 2006 [14]	retrospective case series, 7	malignant, 1; benign, 6	nitinol polyurethane covered, 7; nitinol polytetrafluoroethylene covered, 1	trachea; main bronchus	1/7 (14)	NR	pneumonia (1), <i>Pseudomonas aeruginosa</i> , <i>Streptococcus viridans</i>	NR	0/1 (0)
Ernst, 2007 [29]	prospective cohort, 58	benign, 58	Dumon silicone stent, 65	trachea; main bronchi	14/58 (24)	median: 26 days; range: 3–865 days ^d	NR, NR	stent removal (NR); stent replacement (NR)	NR
Terra, 2007 [30]	prospective cohort, 16	malignant, 3; benign, 13	Polyflex polyester mesh with silicone coating stents, 21	trachea	1/16 (6)	NR	pneumonia (1), NR	NR	NR
Lin, 2008 [27]	retrospective cohort, 26	malignant, 21; benign, 5	Ultraflex self-expanding metallic stents, 29	trachea; main bronchi	12/26 (46)	NR	pneumonia (12), NR	NR	NR

Data on administration of antimicrobial agents for the treatment of patients with stent-related infection was not reported for all but one study; indeed, in the study by Saad et al. [26], 1 patient with fungus ball received amphotericin B and fluconazole for 8 weeks.

In the studies of Dasgupta et al. [21] and Belleguic et al. [22], mortality data are not available for 2 out of 3 and 1 out of 2 patients with SARTI respectively. NR = Not reported.

^a Patients with lung or heart-lung transplantation are mentioned separately. ^b Time interval between the stent placement and the onset of infection. ^c For the remaining patients with stent-related infection, no data were available regarding the time interval between the stent placement and the onset of infection as well as the type of infection. ^d This time interval refers to all stent-associated complications (not only infectious complications). ^e Both covered and uncovered types of stents.

Online Supplement Table 2. Case reports on infections related to airway stenting

First author, year [ref]	Sex/age	Cause of obstruction, comorbidity	Stent type, number of stents	Site of stricture	Time interval ^a	Infection type	Pathogen(s)	Culture type	Antimicrobial treatment, duration	Interventional treatment	Outcome
Noppen, 2003 [11] ^b	M/47	tracheobronchomalacia-	Ultraflex expanding metallic stent, 1	trachea; main bronchi	NR	pneumonia	NR	NR	NR	insertion of a silicone stent inside the metallic	cure
Park, 2005 [8]	F/9	benign, heart-lung transplantation; immunosuppressive treatment	Palmaz balloon-expanding metallic stent, 1	tracheal anastomosis	9 months	intraluminal stent infection (fungus ball)	<i>Candida albicans</i>	stent culture	none	none	death
Sha, 2007 [9]	M/27	benign, heart-lung transplantation; immunosuppressive treatment	Ultraflex expanding metallic stents, 2	tracheal anastomosis and left main bronchus	11 months	pneumonia	<i>Pseudomonas aeruginosa</i>	bronchial secretions	imipenem-cilastatin, 1 week	NR	death
Abbas, 2007 [10]	M/47	benign, relapsing polychondritis; immunosuppressive treatment	Ultraflex expanding metallic stent, 2	right intermediate and left mainstem bronchus	1 week	cavitary pneumonia	<i>Pseudomonas aeruginosa</i>	BAL	ceftazidime, polymyxin, 3 months	stent placement in the right intermediate followed by balloon dilatation	cure

M = Male; F = female; BAL = bronchoalveolar lavage; NR = not reported.

^a Time interval between the stent placement and the onset of infection. ^b This paper reports on two complicated cases of stented patients; only the second patient (detailed in the table) developed an infectious complication (pneumonia).