with pulmonary LCH and PH who quit smoking and received corticosteroids [10]. Whether antiproliferative therapy such as cladribine might affect PH in patients with pulmonary arterial wall involvement by Langerhan's cells is unknown.

In conclusion, these observations demonstrate that long-term improvement of PH may be obtained using bosentan in patients with pulmonary LCH, further supporting the theory of pulmonary vasculopathy. Bosentan therapy may be considered in individual cases as a bridge to lung transplantation, which remains the therapy of choice in patients with pulmonary LCH and severe PH.

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Airway stent improves outcome in intubated oesophageal cancer patients

To the Editors:

Advanced, unresectable oesophageal cancer with airway invasion has a very poor prognosis. For tumours extending into the airway lumen, the primary goals of therapy are for the palliative relief of the malignant obstruction of the oesophageal lumen and central airway and to close the fistula between the oesophagus and central airway. Palliative options include mechanical core-out, dilatation, laser ablation, electrocautery, cryotherapy, photodynamic therapy and brachytherapy [1, 2]. However, satisfactory results may not be immediate or lasting. Endoscopic stenting is effective for airway stenosis from both extrinsic compression and direct tumour invasion, and has also been shown to be useful in the treatment of tracheo-oesophageal fistulas [3]. Among patients with obstruction of the trachea and main stem bronchi with tumour invasion, respiratory failure is one of the most severe complications. Due to advances in airway stents and insertion techniques, interventional bronchoscopic procedures have been reported to facilitate weaning from mechanical ventilation [4]. Moreover, covered self-expandable metallic stents have been used to seal off tracheo-oesophageal fistulas and to avoid aspiration symptoms [5]. However, little has been reported about the effect of stent implantation in respiratory failure patients with oesophageal cancer complicated with airway invasion.

As we previously reported, Ultraflex stent (Boston Scientific, Natick, MA, USA) placement in central airway obstruction, we retrospectively included 16 intubated patients with oesoageal cancer and central airway invasion after Ultraflex stenting in our intensive care unit (ICU) from 2001 to 2009 (table 1) [6]. The outcomes including ventilator weaning rate, ICU and overall survival were described. Most patients (11 out of 16 (68.7%)) were withdrawn from the ventilator and survived after airway Ultraflex stenting. Five patients were finally discharged from hospital and received further treatment including concurrent

TABLE 1 Demographics and outcomes of patients who received airway Ultraflex stenting

Case	Age yrs	Sex	Invasion site	Stent size#	Weaning	ICU outcome	In-hospital outcome	Hospital days	OS days	Treatment	Complication
1	46	Male	LT	20×8	-	M	M	5	5	None	Unknown
2	57	Male	MT	20×8	+	S	S	21	101	RTO	Tumour ingrowth
3	56	Male	LT	20×10	+	S	S	22	40	CCRT	None
4	57	Male	LT	20×6	+	M	M	11	7	None	Unknown
5	65	Male	LT	20×8	+	S	S	49	183	CCRT	Tumour ingrowth
6	70	Male	MT	18×8	+	S	M	90	90	None	TE fistula
7	71	Male	MT	18×6	+	S	M	82	82	None	Secretion
8	55	Male	LT	16×8	+	S	S	8	45	RTO	None
9	53	Male	LT	18×6	+	S	S	18	125	CCRT	None
10	63	Male	LT	20×6	-	M	M	24	19	None	Pneumothorax
11	73	Male	LM	18×6	+	S	M	43	37	None	Migration
12	66	Male	LM	14×4	-	M	M	9	4	None	Secretion
13	77	Male	LM	16×6	+	S	M	113	102	None	Tumour ingrowth
14	68	Male	MT	20×8	-	M	M	12	10	None	Secretion
15	39	Male	LM	14×4	-	M	M	47	31	None	Secretion
16	61	Male	LM	14×4	+	S	M	23	16	None	Unknown

ICU: intensive care unit; OS: overall survival; LT: lower trachea; MT: middle trachea; LM: left main bronchus; -: weaning failed; +: weaning succeeded; M: mortality; S: survival; RTO: radiotherapy; CCRT: concurrent chemoradiotherapy; TE: tracheo-oesophageal. #: presented as outer diameter mm × length cm. The Ultraflex Stent is manufactured by Boston Scientific (Natick, MA, USA).

chemoradiotherapy (three out of 16 (18.7%)) or palliative radiotherapy (two out of 16 (12.5%)). The mean hospital stay survived durations were 36.1 (range 5–113) and 56.1 days (range 5–183). The ICU survival rate (10 out of 11 (91%) *versus* zero out of five (0%); $p<0.01$) and overall survived duration (mean 75.3 days *versus* 13.8 days, $p<0.01$) of patients who were successfully weaned were significantly better than those of patients who were not weaned from their ventilators.

All patients were in a critical condition, therefore general anaesthesia, rigid bronchoscopy and subsequent silicone stent implantation were not feasible. The alternative method of airway Ultraflex stenting, using flexible bronchoscopy without fluoroscopic guidance, provided these critical patients with alternative treatment to resolve their recurrent aspiration. After the stent was implanted successfully, we showed that some of these critical patients could be liberated from their ventilators and further discharged from the ICU and hospital. Thereafter, they could receive further treatment for oesophageal cancer including radiotherapy or concurrent chemoradiotherapy [7], and their overall chances of survival can improve. In conclusion, the current study describes an alternative method of stent implantation in mechanically ventilated patients with oesophageal cancer and central airway invasion. Despite these patients having a poor prognosis, this method may be lifesaving and may facilitate successful withdrawal from mechanical ventilation, hospitalisation in an environment with a lower level of care and may even extend their chances of survival. It may be difficult to enrol enough patients but a prospective study is warranted, investigating the added benefit of Ultraflex stents in respiratory failure patients due to oesophageal cancer with airway involvement.

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