

Study	Age (years) (at Time of PEP Surgery)	Sex	Medical history	Indication for surgery	Cervical surgery	Mechanism of PEP	Interval Between PEP Diagnosis (Recurrence) and Surgical Treatment	Size of the esophageal perforation	Initial symptoms	Instrumentation Removal	Posterior Fixation	Surgery treatment	Outcome	Follow-up	Type of bacteria
Gibson et al. (1)	80	M	Crohn disease	Cervical degenerative disease	ACDF (C4-6)	Hardware failure	15	NA	Acute exacerbation of chronic dysphagia, newonset odynophagia, and severe neck pain and stiffness	Hardware removal	No	Repair esophagus + SCAIF flap	Resolution	3 M after treatment, the patient refused care and died	Klebsiella pneumoniae, Candida albicans
Coelho et al. (2)	47	M	NA	C5-C6 fracture	ACDF (C5-7) + posterior (C4-6)	NA	25	7*5 cm	Swallowing difficulties	Hardware removal	Already present	Repair esophagus + ALT free flap	Resolution	3 Y	NA
Ikuma et al. (3)	59	M	NA	C5 compression-flexion injury	ACCF (C4-6)	Micro-trauma-induced pressure sores	17	Length 5 cm	Dysphagia	Hardware removal	No	Repair esophagus + SCM flap	Resolution	1 Y	Candida albicans, Clostridium innocuum, Lactobacillus jensenii, Lactobacillus fermentum
Park et al. (4)	66	M	NA	NA	ACDF (C4-6)	Hardware failure	20	Small opening in previously healed esophageal perforation	Shoulder pain and progressive quadriparesis	Conservative treatment	No	NA	Improved	/	Streptococcus alactolyticus
							25	NA	Progressive quadriparesis	Hardware removal +iliac bone graft with anterior plating (C3-4)	No	Repair esophagus	Resolution	1 Y	
Yahanda et al. (5)	57	F	HTN, tobacco use	NA	ACDF (C4-6)	Hardware failure	15	Erosion into esophageal wall at C4	Dysphagia, neck pain	Hardware removal	No	Without treatment for esophagus	NA	NA	NA
Zakko et al. (6)	51	M	NA	NA	ACDF (C4-7)	Hardware failure	12	Length 4 cm	Sharp, stabbing, and burning pain radiating to trapezius	Hardware removal + titanium cages were placed and buttressed by plates across the C4-5 and C6-7 spaces	Posterior (C4-7)	Repair esophagus	Failed	/	Lactobacillus gasseri, Rothia mucilaginosa, Candida albicans

										-	-	Esophageal reconstruction with a SCAIF flap	Improved	1 Y	
Gazzeri et al. (7)	45	M	immunodepressionAfter severe skin burns and a blunt trauma to the head delivered by a horse kick	Spondylodiscitis and spinal fracture of C4 and C5 vertebral bodies	ACSS (C3-6)	Hardware failure	11	NA	Severe dysphagia and high fever	Remove the extruded screw and to leave the plate and the remaining screws.	No	Repair esophagus	Resolution	6 M	NA
Almre et al. (8)	53	M	NA	Trauma	ACSS (C5-T2)	Hardware failure	18	Length 3 cm	Progressive dysphagia	Hardware removal	No	Repair esophagus + excise diverticulum	Resolution	1 Y	NA
Lucas et al. (9)	85	M	NA	Multilevel spondylotic radiculopathy and myelopathy	ACSS (C3-7)	NA	10	NA	Dysphagia	Hardware removal	No	Repair esophagus	die after 18 d due to pneumonia	18 D	Candida albicans, oral flora, hemolytic streptococcus
Vrouenraets et al. (10)	57	F	NA	Spondylarthrosis,	ACCF (C2-5)	NA	10	NA	Dysphagia	Hardware removal	No	Esophageal defect was left open and adequately drained	Resolution	6 M	NA
Harman et al. (11)	40	F	NA	C6 vertebral fracture	ACDF (C5-7)	Hardware failure	12	Length 2 cm	Dysphagia and weight loss	Hardware removal	Yes	Repair esophagus	Failed after 4 w	/	NA
										/	Already present	Repaired with endoscopic plastic stent	Resolution	1 Y	
Kau et al. (12)	75	F	breast carcinoma	Metastatic tumor of C5	ACSS (C5-7)	NA	13	Length 3 cm	Dysphagia, weight loss, fevers, night sweats, and voice changes	Hardware removal	No	The defect was unable to be sutured and submental island flap was used.	Resolution	7 W	NA
Present case	53	F	NA	Cervical spondylosis	ACCF (C5-7)	Plate decubitus	10	Length 5 cm	Neck Pain	Hardware removal	No	Repair esophagus + excise diverticulum + SCM flap	Resolution	8 Y	NA

PEP, pharyngo-esophageal perforation; M, male; F, female; NA, not applicable; SCM, sternocleidomastoid muscle; MCS, midcervical spine; CTJ, cervicothoracic junction; SCAIF, supraclavicular artery island fascial; ALT, adipofascial anterolateral thigh; ACSS, anterior cervical spine surgery; ACCF, anterior cervical corpectomy and fusion; ACDF, anterior cervical discectomy and fusion

Supplementary Table 1. Summary of literature review for esophageal perforation more than 10 years after anterior cervical spine surgery

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