

Figure 2. Plain cervical magnetic resonance (MR) images. A: Sagittal T2-weighted image showing massive retropharyngeal hematoma and high-intensity change in the spinal cord at the C4/5 level. B: Sagittal T2-weighted fat-suppressed image showing high-intensity change in the C6/7 intervertebral disc. C: Axial T2-weighted image showing severe canal stenosis at the C4/5 intervertebral disc level and high signal change in the spinal cord.

gion to the mediastinum was removed, and arterial hemorrhage from the inferior thyroid artery was detected and ligated. Rupture of the OALL was observed and considered the cause of the arterial hemorrhage. Anterior cervical discectomy and fusion (ACDF) were performed under microscopic view. A 10 Fr Blake silicon drainage tube was placed in the retropharyngeal space and removed two days after surgery. The postoperative course was uneventful. As severe paresthesia in both hands remained, a second surgery was performed 23 days after the initial presentation. Decompression was performed at C3-6 and posterior fusion at C3-5 using lateral mass screws to prevent the future enlargement of the segmental OPLL, particularly at C4 and C5 levels because they were considered mobile segments. Twelve months postoperatively, the patient could walk with a cane for 200 m; no functional disturbances remained, and there was no implant failure/loosening.

There are several reports in the literature of arterial injury due to cervical spinal injury, which is a life-threatening condition (Table 1)^{5,6}. A recent systematic review showed that

the majority of the traumatic retropharyngeal hematoma with respiratory symptoms was in geriatric patients with falls or traffic accidents whose symptoms developed within 24 h of blunt trauma, and surgical treatment was performed in 23% of patients⁷. Enhanced CT, angiography, and arterial embolization are the most commonly used techniques to diagnose and manage retropharyngeal hematomas due to arterial injury⁷⁻⁹.

To the best of our knowledge, this is the first documented case of a cervical fracture with DISH and subsequent respiratory insufficiency treated with emergency anterior cervical surgery due to arterial bleeding.

Previous studies have shown that cervical fractures in DISH usually occur at disc levels susceptible to low-energy trauma^{4,10}. These characteristics were also found in this case.

There are two possibilities for the mechanism of damage to the artery: first, the edge of the fractured bone could have directly damaged the artery and second, sclerotic changes to the artery may have caused the rupture. Additionally, pre-existing history of hypertension and the use of oral rivarox-

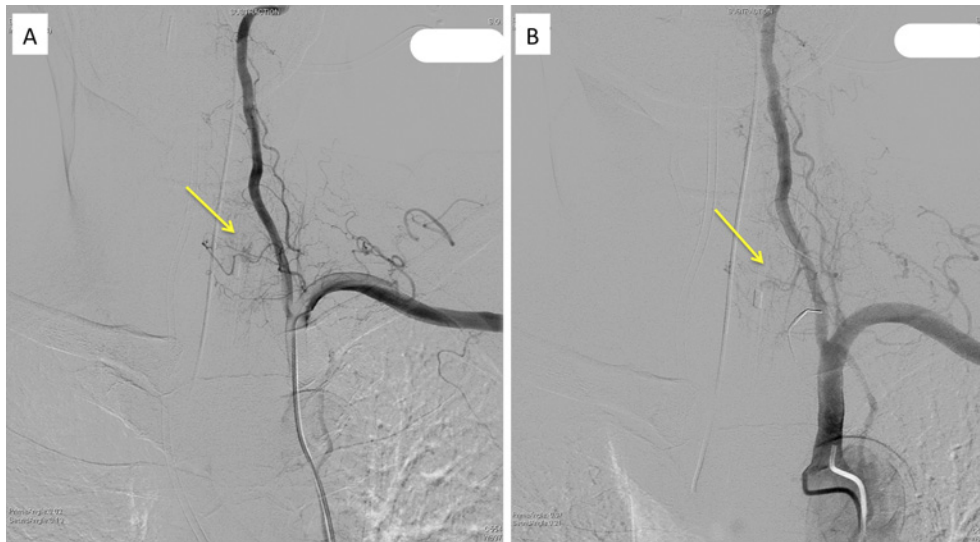


Figure 3. Angiography of left subclavian artery and left common carotid artery, and transcatheter arterial embolization of inferior thyroid artery. A: Before coiling and B: After coiling; both arrows show active bleeding. Residual arterial bleeding was suspected after coiling.

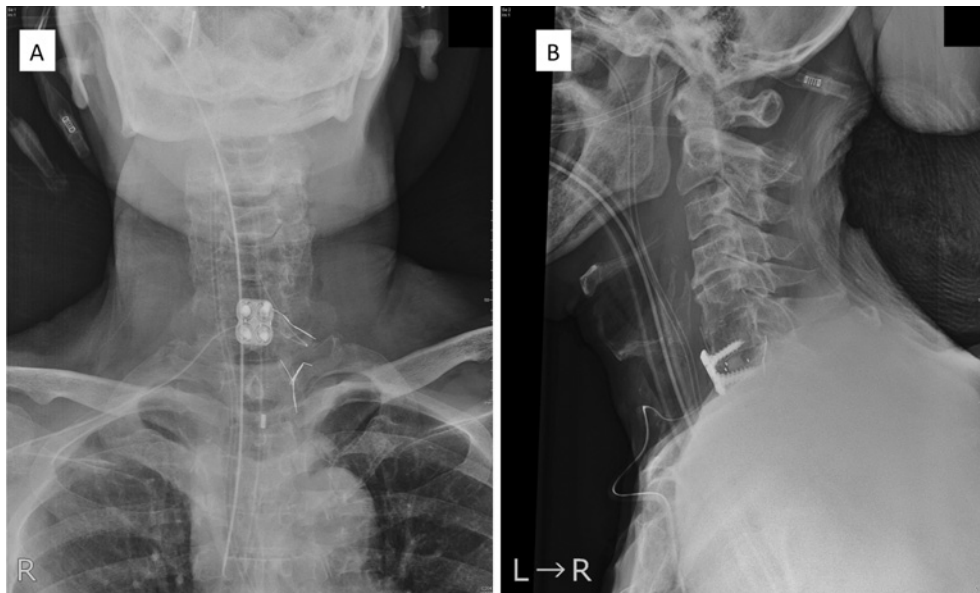


Figure 4. Postoperative X-ray images of C6/7 anterior discectomy and fusion. A: Anteroposterior X-ray and B: Lateral X-ray.

aban are potential risk factors for abnormal bleeding and difficulties in blood coagulation⁴).

Conflicts of Interest: The authors declare that there are no relevant conflicts of interest.

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manuscript.

Ethical Approval: None. (As this is a case report without identifiers.)

Informed Consent: The authors certify that they obtained all appropriate patient consent forms. The patient has given his consent to include the images and other relevant clinical data in this report. The patient understands that his name and initials will not be published, and due efforts will be made to conceal his identity; he also understands that anonymity cannot be guaranteed.

Table 1.

Case reports	Author	Journal	Year	No. of cases	Age	Sex	Fracture	Level	Cause	Time from trauma	Risk factors	Procedure	Findings
	Smith JP	J Trauma	1988	1	77	F							
	O'Donnell JJ	Eur J Emerg Med	1997	1	19	M	C1/2 fracture dislocation	C1/2	Motorcycle accident		Anticoagulant therapy		Difficulty in intubation
	Sandooram D	J Laryngol Otol	2000	1		M			Minor frontal wound				
	Kette F	Eur J Emerg Med	2000	1		M					Tracheostomy, per-oral drainage, and nasogastric tube feeding		
	Dullivard C	Eur Argh Otorhinolaryngol	2005	2									
	Anagnostara A	Emerg Radiol	2005	1	58	M	None		Motor vehicle accident		Methylprednisolone		
	Freeman BJC	Injury	2005	1	31	M	Occipital condylar fractures		Motorcycle accident			Emergency endotracheal intubation	
	Rizk NN	Laryngoscope	2010	1	55	F	None		Uncontrolled hypertension and cervical spine arthritis			Transoral and transcervical incisions and drainage	
	Wronka KS	Ann R Coll Surg Engl	2011	1			Odontoid fx	C2	Fall			Tracheal intubation	
	Iizuka S	J Emerg Med	2012	1	30	F	None		Motor vehicle collision	4 h		Angiography	Active bleeding from the right thyrocervical artery rupture
	Kudo S	Am J Emerg Med	2017	1	83	F	C4/5 dislocation	C5	Motorcycle accident			Angiography and endovascular embolization	Active bleeding from the right vertebral artery rupture and hemorrhagic shock
	Iida A	Int J Surg Case Rep	2020	1	79	M	None	C3	Fall from height	3.5 h	Warfarin	Active bleeding from the right thyrocervical trunk of ascending cervical artery and embolization	
	Yu S	Korean J Neurotrauma	2020	1	55	M	None	C6/7	Bicycle accident	4 h		Percutaneous aspiration of hematoma, urokinase administration, and coiling	Active bleeding from right superior thyroid artery posterior branch
	Baek JH	Medicine	2020	1	49	M	None	C3	Minor car accident	2 h		Observation	
	Tanaka I	Cureus	2022	1	52	M	None	C3	Fall while walking	3 days		Tracheostomy	
Review papers	Lee J	Ther Clin Risk Manag	2019	62								Retropharyngeal space thickness at C2 is associated with difficult direct laryngoscopy	
	Tsao YL	Emerg Med Int	2021	68	13-94				Falls (54.4%) and traffic accidents (35.3%)	95.2% within 24 h		Conservative (63.2%), surgical embolization (8.8%), and died in 12 cases	
	Shiba D	Eur J Trauma Emerg Surg	2022	24	69 (median)				27% Anticoagulant/antiplatelet medication			16/24 tracheal intubation and 9/16 tracheostomy	

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