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## Lethal aortic injury after falling while paragliding

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**Abstract:** The subject of this case report is a 62-year-old male who fell from an altitude of 15 m while paragliding. A physician-staffed helicopter was dispatched to transport the subject after his accident. When the staff of the helicopter checked him, he was in cardiac arrest. The initial rhythm was asystole. He underwent emergency thoracotomy and aortic clamp at the scene, receiving advanced cardiac life support. Thoracotomy revealed massive hemorrhaging in the left thorax. On arrival at the hospital, he remained in cardiac arrest. Both feet were swollen and deformed. Autopsy imaging revealed aortic injury in addition to diaphragmatic rupture and ischium fracture. Physicians should be alert for lethal aortic injury when treating patients who have fallen while paragliding.

**Keywords:** Paragliding; fall; aortic injury

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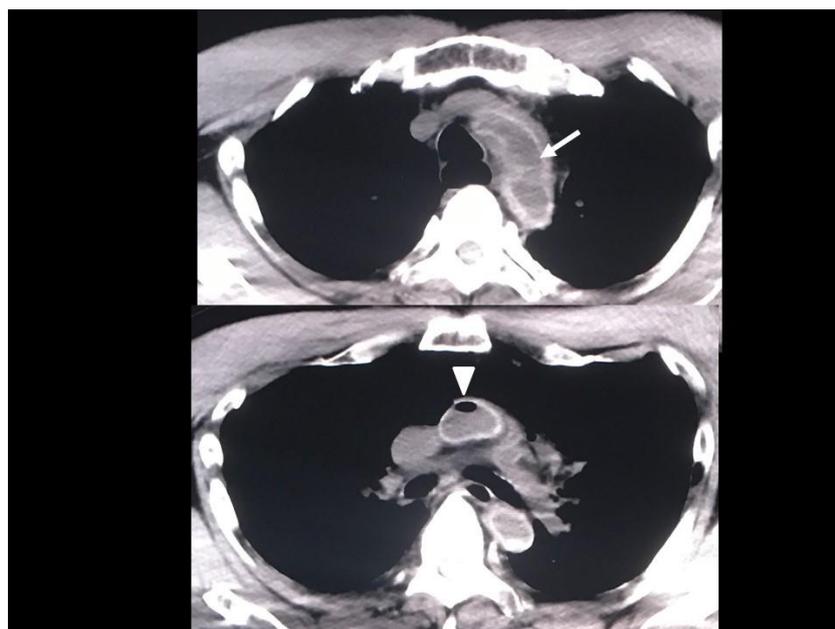
### INTRODUCTION

Injuries induced by falling while paragliding tend to occur in the lower extremities, spine, head, and as multiple injuries, in order of increasing frequency.[1] We report a rare case of a lethal aortic injury after falling while paragliding.

### CASE PRESENTATION

The subject of this case report is a 62-year-old male who fell from an altitude of 15 m while paragliding. A physician-staffed helicopter was dispatched to transport

the subject after his accident. When the staff of the helicopter checked him, he was in cardiac arrest. The initial rhythm was asystole. He underwent emergency thoracotomy and aortic clamp at the scene, receiving advanced cardiac life support. Thoracotomy revealed massive hemorrhaging in the left thorax. On arrival at the hospital, he remained in cardiac arrest. Both feet were swollen and deformed. Resuscitation failed to obtain spontaneous circulation. Autopsy imaging revealed aortic injury in addition to diaphragmatic rupture and ischium fracture (Figure 1).



**Fig-1:** The autopsy imaging shows mediastinal hematoma with shrinkage of the thoracic aortic arch (upper image, arrow) and air in the ascending aorta (lower image, triangle), suggesting aortic injury.

## DISCUSSION

Blunt trauma can damage the thoracic aorta by several mechanisms. The most commonly reported cause of rupture is the development of differential forces within the chest due to deceleration in either the horizontal or vertical plane.[2,3]The descending aorta remains fixed to the posterior chest wall, while the heart and ascending aorta swing forward and tear free at the isthmus. Given that the present subject had injuries to his feet as well as ischium fractures, both of which are frequently induced by energy through the vertical plane, the aortic injury was presumably caused by mainly vertical trauma due to a fall from a height. There have been three case reports of aortic injury after falling while paragliding in Japan. [4-6]

Physicians should be alert for lethal aortic injury when treating patients who have fallen while paragliding.

## Conflict of interest

We do not have conflict of interest to declare.

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