Table S1 Necessary definitions and descriptions of variables

Variable	Definition and description
Injury way	
Direct strike	Including motor vehicle crash (driver or passenger), fall, hit, airflow impact, or squeeze.
Seat belt	Seat belt was tied when trauma.
Back hyperextension	Back hyperextension without no external forces.
Pain	Pain in abdomen, chest, back, or lumbar flanks.
Lower limb ischemia	Including pain, weakness, cold, pulselessness, or pallor of lower extremity due to ischemia.
Neurological dysfunction	Including paraplegia, hypoesthesia, asynodia, incontinence, etc.
Other manifestations	Other manifestations other than the above two due to trauma, such as gastrointestinal symptoms, consciousness disorder, vertigo, headache, weakness, hyperhidrosis, dyspnea, etc.
Delayed manifestations	Manifestations that occurred more than 1d later after trauma.
No immediate manifestations	No any manifestations were showed in 1d after trauma.
Shock	Systolic blood pressure was < 90mmHg.
Aortic lesion location	
Zone I	The zone from diaphragmatic hiatus to the SMA.
Zone II	The zone including the SMA and the renal arteries.
Zone III	The zone from infrarenal aorta to the aortic bifurcation.
Aortic lesion severity	
Grade A	Intimal tear or intramural hematoma.
Grade B	Small pseudoaneurysm (less than 50% circumference).
Grade C	Large pseudoaneurysm (more than 50% circumference).
Grade D	Intraluminal truncation.
Grade E	Rupture.
Aortic degeneration	Referred degenerative pathologies such as severe aortic calcification or atherosclerosis reported by imaging studies, pathological examination, or autopsy.
Injuries to organs in abdomen	Injuries to other vital organs or tissues in the abdomen such as abdominal wall, pelvis, diaphragm, omentum, stomach, intestines and mesentery, liver, pancreas, spleen, kidney, etc.
Injuries to lumbar spine	All injuries to lumbar spine which were referred including fracture or deformation.
Injuries to other parts of body	Injuries to other parts of the body other than the above two, including head, thorax, thoracic spine, heart, lung, ribs, clavicles, or limbs.
Core treatment	There are five core treatment modalities. Both surgery and intervention were defined as "operation".
Primary surgery	The aorta was repaired, replaced, or bypassed under direct vision through incisional approach proactively after diagnosis of BAAI.
Secondary surgery	After the diagnosis of BAAI, the patient underwent initial conservative observation and then was switched to surgery passively.
Primary endovascular therapy	Endovascular repair of aorta with covered stent under the monitoring of aortography was performed through percutaneous puncture approach proactively after diagnosis of BAAI.
Secondary endovascular therapy	After the diagnosis of BAAI, the patient underwent initial conservative observation and then was switched to intervention passively.
Conservative observation	Conservative treatment was implemented throughout while monitoring for changes.
Adverse events	Referred any unexpected adverse events other than death following core treatment, such as respiratory diseases, renal failure, heart diseases, infection, lower limb ischemia, neurological dysfunction, peptic ulcer, osteofascial compartment syndrome, poor incision healing, etc.
Death after BAAI	Death was initially from trauma, but not others such as malignant cancer.

SMA: superior mesenteric artery; BAAI: blunt abdominal aortic injury. Other variables included in the study were: age: gender: cardiopulmonary arrest: diagnostic method: timing to core treatment after injury: residual lower limb ischemia: and residual neurological dysfunction