An Ascending Aortic Dissection Detected at Post-Anesthesia Care Unit after Orthopedic Surgery --- A Case report

Tsung-Yang Lee, Kuen-Bao Chen, Kung-Chien Shih, Yong-Rui Wen
Department of Anesthesiology, China Medical University Hospital, Taichung, Taiwan

Introduction

Aortic dissection is a relatively rare illness, and often presents with tearing chest pain and acute hemodynamic compromise. Thoracic aortic dissection can be extremely difficult to diagnose, and the mortality rates are estimated at 50% by 48 hours if undiagnosed. Many patients die before arriving at the emergency department(ED) or before diagnosis made at ED. Early and accurate diagnosis and treatment are essential for survival.

Case Presentation

The patient is a 51-year-old man who had his right femoral neck fracture after the traffic accident in the morning and then received the surgery of closed reduction and internal fixation for femoral neck fracture under spinal anesthesia in the afternoon. After the surgery, he complained of nausea, chest tightness and left arm numbness. Oligouria was also noted despite of fluid challenge at the post-anesthesia care unit(PACU). Significant bilateral upper limb blood pressure difference(106/40 mmHg of Rt arm and 70/54 mmHg of Lt arm) was found and the EKG showed RBBB.

Under the impression of aortic dissection or acute myocardial infarction, aortic CT and blood sampling were performed immediately at PACU. The result of CT scan revealed a tear of aortic wall from aortic root to descending aorta (Figure 1-4). His clinical condition deteriorated rapidly within half an hour. Foamy sputum and desaturation was noticed. We performed emergent endotracheal intubation and the hemodynamic status was stabilized after fluid challenge and adequate drug administration. The emergent surgery of Bentall operation and TEVAR was arranged. After surgery, he was sent to ICU for further care.

Discussion

Aortic dissection is a fatal disease which can be easily missed and survival rate decrease rapidly as time pass by. Aortic dissection is usually suspected under history and physical examination and usually seen from age 50 to 70. The common causes are hypertension, bicuspid aortic valves and connective tissue diseases like Marfan syndrome. Tachycardia and hypotension are usually noticed which were result from aortic rupture, pericardial tamponade, acute aortic valve regurgitation, or even acute myocardial ischemia with involvement of the coronary ostia. Multiple methods were used to diagnose aortic dissection such as CXR, aortic CT, MRI, echocardiography and Aortography. The initial treatment goal is to reduce the force of left ventricular contraction without compromising perfusion. Beta-blockers, sodium nitroprusside, glyceryl trinitrate, or hydralazine are appropriate for reducing blood pressure. Intubation and ventilation are indicated if Glasgow coma scale below 8 points or profound hemodynamic instability. The anesthetist's role in aortic dissection include resuscitation and stabilization, pain relief, transfer, anesthesia, perioperative care and even diagnostic perioperative TEE to aid surgical decision making. In this case we fortunately made an early diagnosis and initial resuscitation. Or it may become a disaster if we delayed our diagnosis and treatment.

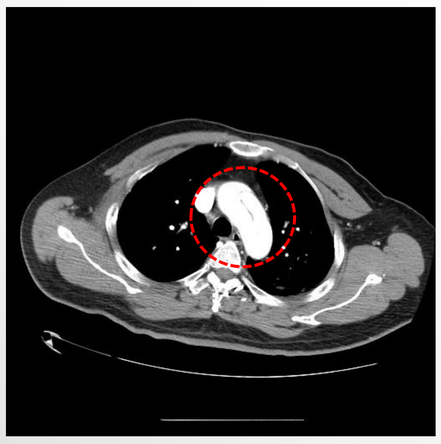

Figure 1

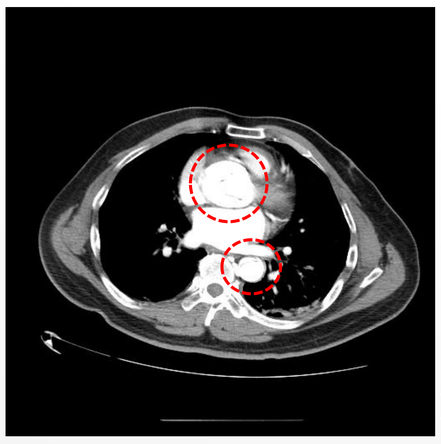

Figure 2

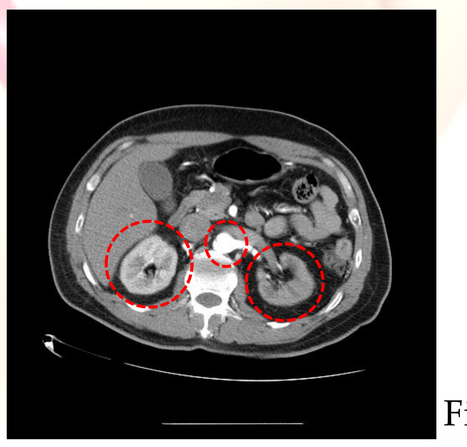

Figure 3

Figure 4

中國醫藥大學附設醫院
麻醉部
CHINA MEDICAL UNIVERSITY HOSPITAL
Department of Anesthesiology

Reference

1. Miller's Anesthesia 7th edition
2. Guidelines for the Diagnosis and Management of Patients With Thoracic Aortic Disease, Circulation. 2010;121:e266-e369
3. Long-Term Survival in Patients Presenting With Type A Acute Aortic Dissection : Insights from the International Registry of Acute Aortic Dissection (IRAD) ,Circulation. 2006;114:I-350-I-356
4. The International Registry of Acute Aortic Dissection (IRAD) New insights Into an Old Disease, JAMA, February 16 2000
5. Clinical Anesthesia Procedures of the Massachusetts General Hospital, Eighth edition
6. Ravi Hebballi, et al, Diagnosis and management of aortic dissection, Continuing Education in Anaesthesia, Critical Care & Pain | Volume 9 Number 1 2009
7. Management of aortic dissection, UpToDate