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Visual Case Discussion

Sudden paraparesia in an old man

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A 60-year-old man complaining of inability to stand up and walk was brought to the emergency ward by his relatives.

On admission, he was alert and restless but answered the questions fairly. He complained of inability to move his lower limbs in addition to nausea, abdominal pain and back pain which had been started from this morning following awakening. There was no chest pain, vomiting, dizziness or blurred vision. Also, there was no past medical history, family history, taking medications or allergies. He smoked sometimes.

His vital signs, arterial blood oxygen saturation, and bedside glucose levels were as follows; BP: Right arm= 240/220 mmHg - Left arm = 240/200 mmHg, PR:78 b/min, RR:22/min, T: 370C (Axilla), Sat O2: 98% (room air), BS: 469 mg/dL.

On examination, the patient was obese and seemed restless while could not stand. Heart sounds seemed fairly muffled .The abdomen look liked a little distended. Bowel sounds were absent. Abdomen seemed tympanic. There was generalized abdominal tenderness without rebound. We found no mass or organomegaly. His skin in genitalia and medial aspects of thighs were mottled. The extremities lacked any swelling, deformity, wound or abrasion. The lower limbs were colder than the upper clearly. The femoral arterial pulse was absent completely in the left lower limb whereas seemed week in the right lower limb, but arterial pulses in the upper limbs were normal and symmetric .The muscular force of the lower limbs was 2 of 5 while normal in the upper limbs. Tendon reflexes of the lower limbs seemed intensified whereas were normal in the upper limbs. Skin reflex in the sole of feet was mute (no dorsi or plantar flexion).We found a sensory level from distal to nipple line without pain and heat sensations, while there were sense of deep touch, position and vibration. In digital rectal examination, the anal sphincter tone was normal. Other detailed examination as much as possible seemed to be normal.

After cardiac monitoring and pulse-oximetry, oxygen prescription with nasal canola, embedding intravenous line, blood sampling for some tests, urinary catheterization and getting electrocardiogram(ECG) were done.ECG positive findings included; ST-depression in I,Avl,V2-V6. Bedside e-FAST showed no free fluid in abdomen, pelvic or costophrenic sulcus of lungs whereas showed abdominal aortic diameter as 52 mm with double lumen.

Some test results measured by point of care equipments included;pH:7.24, PaCO2:32.3, HCO3:14.1, BE:-11.5, Hb:12, Hct:37%, Na+:136, K+:3.5, LDH:523, CPK:76, CPK-MB:10, Troponin: Negative, Bun:8, Cr:1.5, BS:420.

By doppler vascular sonography of the lower extremities, we found no arterial blood flow in the left lower limb from inguinal ligament to the end, without any venous thrombosis while others seemed normal.

At this time, vital signs were as before except decreasing blood pressure a little (Right arm = 170/140 mmHg Left arm = 180/150 mmHg). Following enough hydration, brain CT scan and CT-angiography of the chest and abdomen were done (Videos 1–3 and Images 1 and 2). Brain CT scan was normal.

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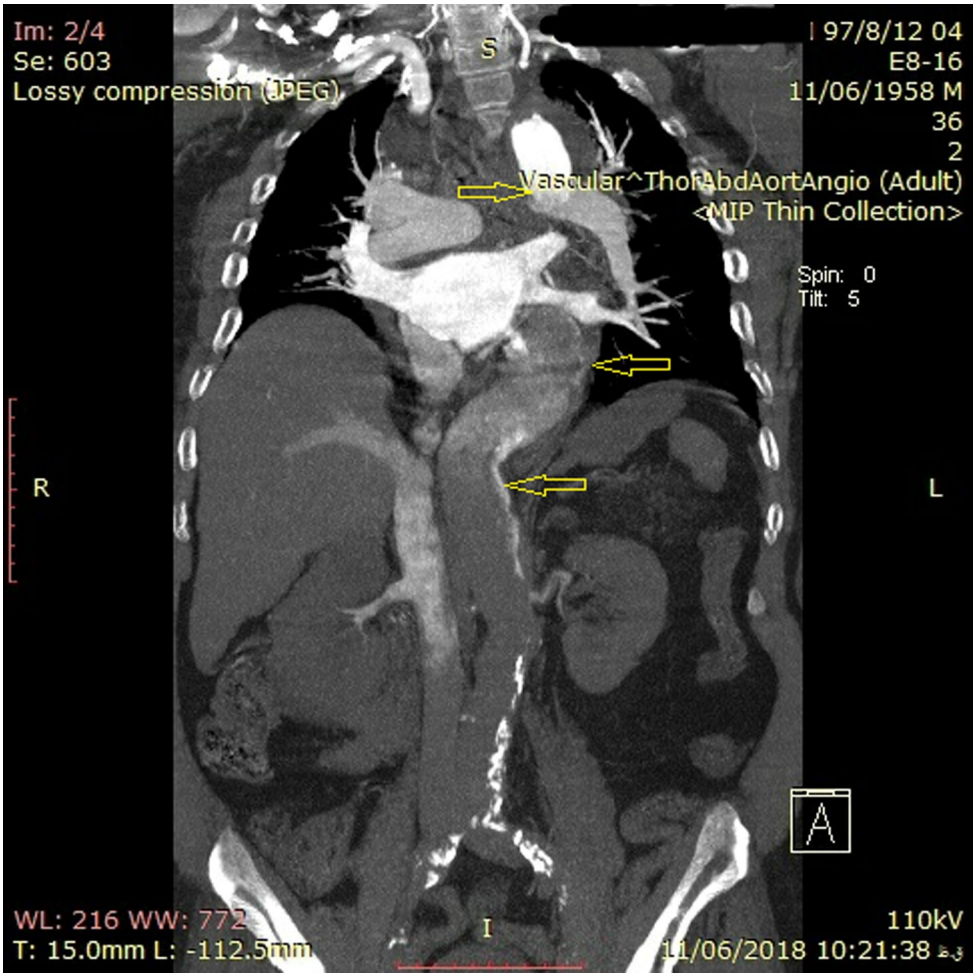

Image 1. Coronal view of dissected thoracic and abdominal aorta in CT-angiography.

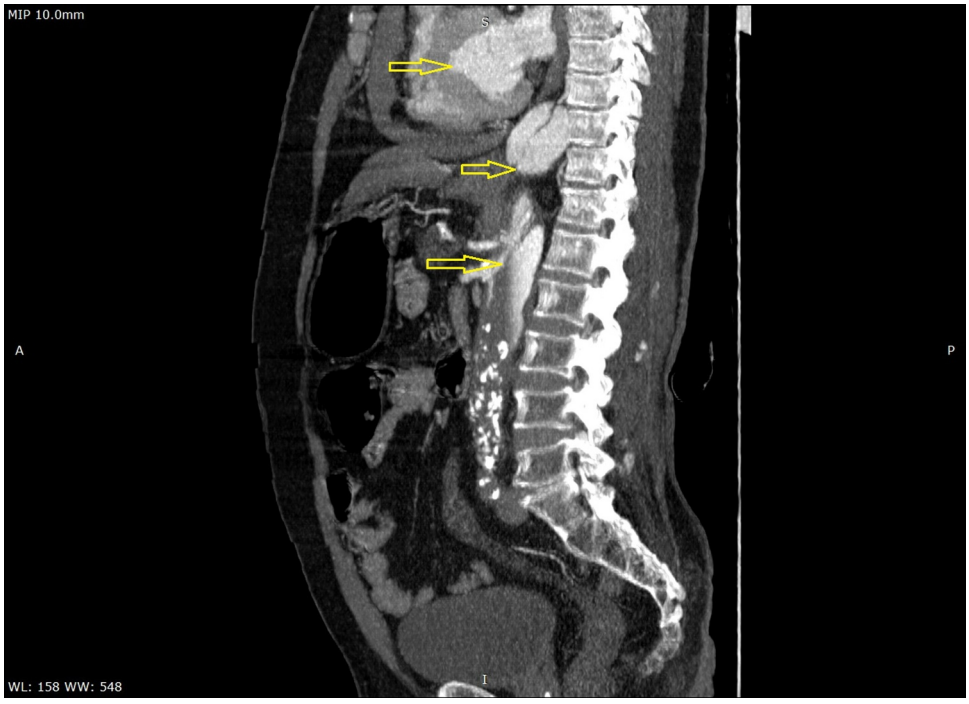

Image 2. Sagital view of dissected thoracic and abdominal aorta in CT-angiography.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.visj.2019.100607.

Reference

1. Walls RM, Hockberger RS, Gausche-Hill M, et al. 9th ed.*ROSEN'S Emergency Medicine Concepts and Clinical Practice.* 1021-1027. Philadelphia: Elsevier; 2018:1298–1307.

Questions

1. What is the most probable diagnosis?
   a. Intracerebral hemorrhage
   b. Guillain-Barré syndrome
   c. Myasthenia gravis
   d. Spinal cord Ischemia
   e. Cuada Eqina Syndrome

2. After opioid prescription and cardiovascular surgery consultation, which of mentioned treatments are the best choices for this patients?
   a. Nitroglycerin
   b. Labetalol
   c. Nitroprusside
   d. Fenoldopam
   e. Nicardipine

Answers

1. Spinal cord Ischemia. Explanation: This presentation is compatible with a spinal cord lesion, most likely anterior cord syndrome (external compression, ischemia, Inflammation, infection or demyelination) characterized by loss of motor function, pain, pinprick, and light touch below the level of the lesion. Lesions from ischemia usually are incomplete. If the physical examination does not support a cord syndrome or cauda equina syndrome (absence of UMN signs or a clear thoracic pinprick level, loss of perianal sensation and rectal tone, urinary retention), the patient may have a peripheral neuropathy affecting the longest nerve tracts first (Guillain-Barré syndrome).Other mentioned diagnoses do not match this case.[1]

2. Labetalol. Explanation: The two goals of medical management are to reduce blood pressure and decrease the rate of rise of the arterial pulse (dP/dt) to diminish shearing forces (SBP $<$ 100–120 mm Hg and HR $<$ 60 b/min). Opioids in addition to titrtable and short-acting beta blockers including Esmolol or Labetalol are the cornerstone of aortic dissection management . Because vasodilators such as sodium Nitroprusside or Fenoldopam or Nitroglycerin reflexively increase the heart rate and may also increase the dP/dt, they require concomitant use of a beta blocker. Nitroglycerin is a less effective arterial dilator than nitroprusside and is less desirable than nitroprusside.[1]