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Introduction

- Lower limb weakness and restriction after spinal cord injury (SCI) are major causes of deep vein thrombosis (DVT).
- Neurogenic heterotopic ossification (NHO) is a common complication occurring around the hip and elbow joint after SCI.
- In rare cases, enlarged NHO in the hip joint can compress the common iliac vein and femoral vein, causing DVT.
- We here in report an extremely rare case of anterior lumbar spine NHO, compressing the left common iliac vein leading to DVT.

Case report

- A 44-year-old male patient visited a hospital for left lower extremity swelling and pain in December 2023.
- In 2002, he became tetraplegic due to a car accident, resulting in a traumatic spinal cord injury at the C5/6 level.
- He was classified as C5 tetraplegia American Spinal Injury Association Impairment Scale B.
- The left lower extremity Computed Tomography (CT) scan diagnosed DVT, revealing multifocal filling defect throughout the ilio-femoral vein (Fig. 1).
- On 6 December 2023, thrombectomy was performed several times but filling defects remained on the follow-up venogram.
- Ballon dilatation of the left common iliac vein was performed afterwards, but no improvement in venous flow was evident.
- After stent insertion of the left common iliac vein, venous flow improvement was confirmed
- Simultaneously inferior vena cava (IVC) filter insertion was performed (Fig. 2).
- However, CT scan performed afterwards confirmed the stent obstruction, compressed by the right common iliac artery and NHO at the lower anterior lumbar spine (Fig. 3).
- It was consistent with May-Thurner syndrome.
- After visiting our hospital for further treatment, he was admitted to vascular surgery department for IVC filter removal.
- Further stent reinsertion and/or NHO removal surgery is being considered continuing on antithrombotic medication.

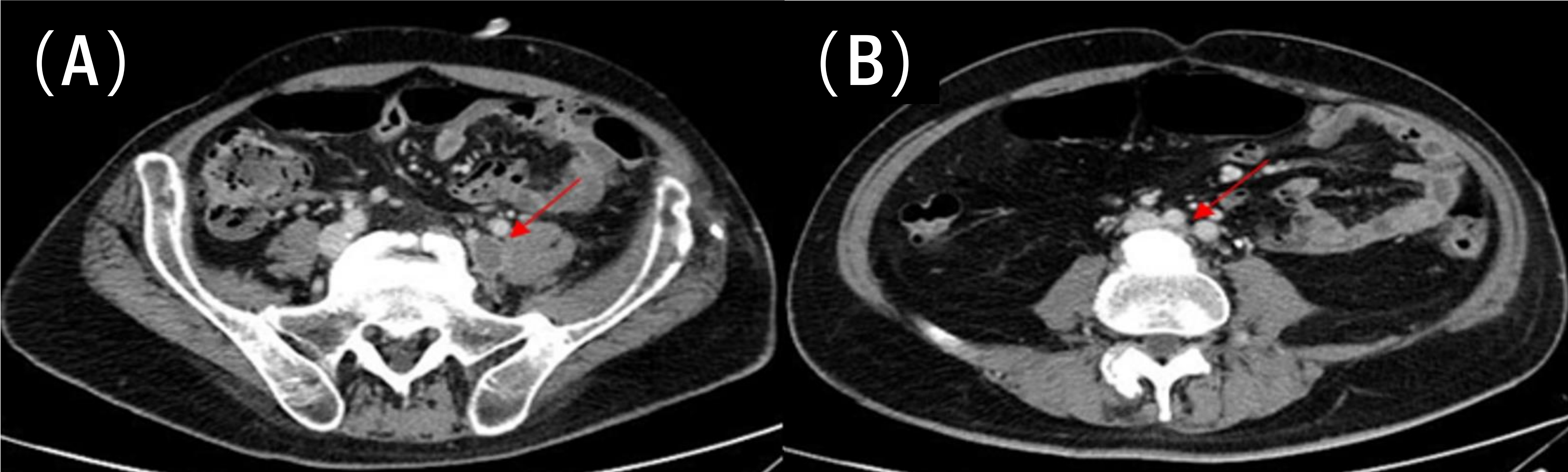


Figure 1. CT abdomen and lower extremity venography findings. (A) In axial view, multifocal filling defects due to thrombus throughout the left ilio-femoral vein are noted (arrow). (B) In axial view, the left common iliac vein compression due to the right common iliac artery and NHO of lumbar spine is noted (arrow).

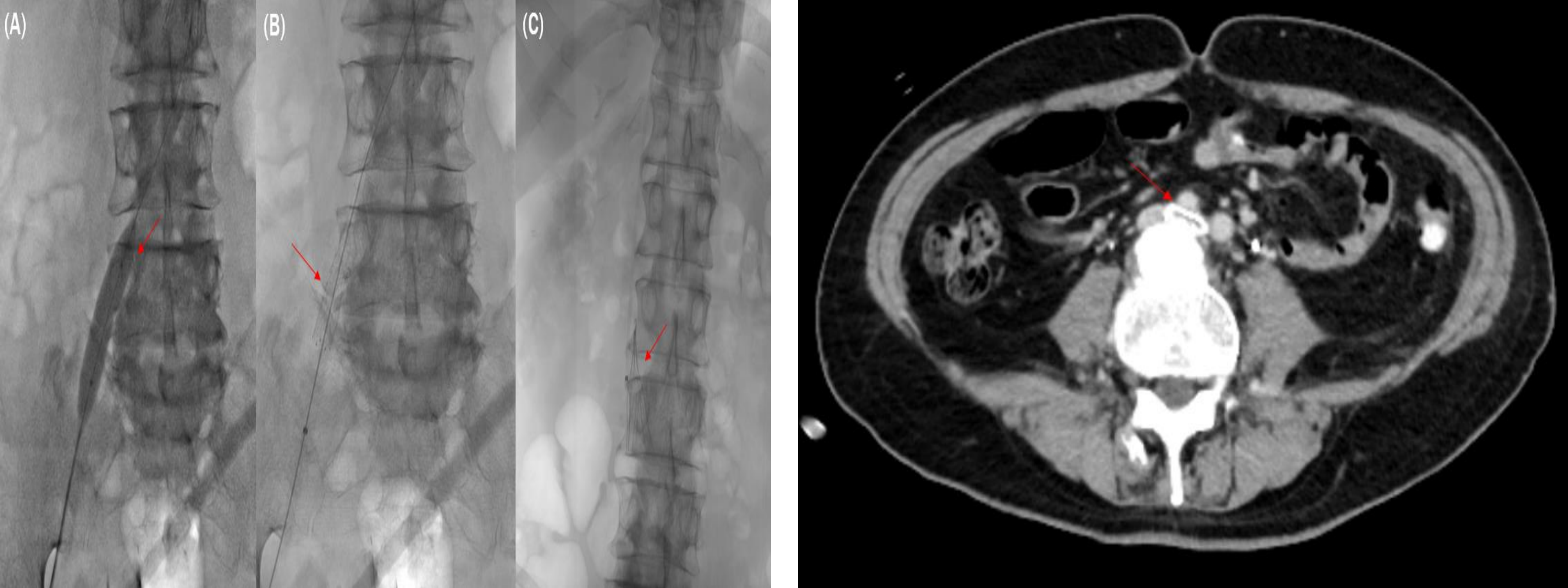


Figure 2. (A) Balloon dilatation was done at the left common iliac vein. (B) Stent insertion was performed at the left common iliac vein. (C) IVC filter was inserted.

Figure 3. CT abdomen and lower extremity venography finding. Stent compression (arrow) was noted due to NHO at lumbar spine and the right common iliac artery.

Conclusion

- While NHO at hip joint after SCI is a common complication, spinal involvement is extremely rare.
- Additionally, NHO typically develops and matures within 18 months after SCI.
- In this rare case, the anterior lumbar spine NHO caused DVT, occurring more than 10 years after the SCI.
- If a patient with SCI has lower extremity edema and pain symptoms with confirmed DVT at common ilio-femoral vein on CT scan, it is necessary to determine the occurrence of venous compression due to spinal involvement of NHO.

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