

## Simultaneous Multiorgan Complications in Subacute Stage of Cervical Spinal Cord Injury

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### Background

Cervical spinal cord injury (SCI) can cause dysfunction in various organs and higher morbidity. Knowing about complications of cervical SCI is important as it can be life-threatening. During acute phase, cardiovascular complications such as bradycardia, hypotension, deep vein thrombosis and pulmonary embolism, gastrointestinal complications such as gastric ulcer (GU) bleeding, endocrine complications such as SIADH and adrenal insufficiency are common. Among these, we experienced a case of simultaneous multiorgan complications in a patient with cervical SCI which required intensive care.

### Case report

A 82-year-old woman visited other hospital by both arms and legs weakness after falling down and hitting forehead to floor. In cervical MRI, it showed signal change at the level of C3-5 (Figure 1) that she got anterior cervical discectomy and fusion between C3-5. After then, she got enoxaparin to prevent deep vein thrombosis (DVT). Two weeks later, she was transferred to our hospital for rehabilitation accompanied by right leg swelling and skin wound with bleeding caused by extravasation. For wound control, we considered to stop enoxaparin, so we tried venous CT. However, we had to take duplex sonography instead of venous CT due to poor venous condition. It showed no evidence of DVT that we stopped enoxaparin. However, three days later, her left leg began to swell with fever and CK, LDH, D-dimer elevation. So, we extended APCT range including iliac and proximal femoral vein which was performed to search fever focus. There was DVT in those veins that we started enoxarpin again (Figure 2). At the same time, systolic blood pressure (BP) fell down to 65mmHg regardless of diet and position. So, we started inotropics but, it didn't work. Then we performed labs evaluating adrenal functions and it showed low level of cortisol with 3.99ug/dL and hyponatremia with 133mEq/L. Endocrinologist diagnosed adrenal insufficiency and recommended steroid. However, she suddenly showed hematemesis, melena that hemoglobin fell down abruptly from 8.2g/dL to 6.6g/dL in a day. So, we did emergent endoscopy and performed ablation on multiple GU to stop bleeding (Figure 3). After then, we had to stop enoxarpin and delay steroid due to risk of further GU bleeding. Fortunately, her BP recovered naturally without steroid and GU bleeding didn't recur. So we restarted enoxarpin 1 month later.

### Conclusion

Patients with spinal cord injuries are at risk for many complications and most of them can be controlled with appropriate medical intervention. However, if serious multiorgan complications occur simultaneously, it could be life-threatening that physicians must pay

attention to it all the time. Also, even though duplex sonography is gold standard to diagnose DVT, venous CT can be more beneficial if DVT is located in proximal veins. Moreover, if BP drops regardless of diet and position, physicians need to evaluate adrenal functions to check adrenal insufficiency.



Figure 1. Initial T2-weighted cervical spine MRI



Figure 2. DVT in Lt common iliac vein in APCT

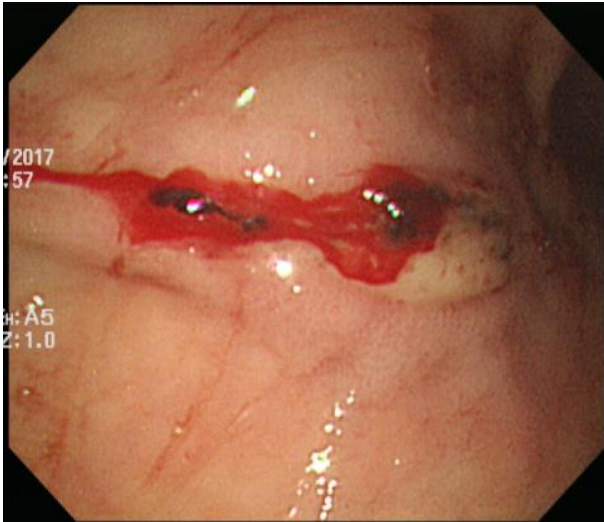


Figure 3. Gastric ulcer bleeding in EGD