Teaching NeuroImages:

Focal ischemia of the spinal micturition center and detrusor-external sphincter dyssynergia

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A 50-year-old woman presented with subarachnoid hemorrhage from a conus perimedullary fistula (figure 1A) involving the anterior spinal artery (ASA). She underwent liquid embolization, where reflux into the distal ASA occurred (figure 1B).

Postprocedure, she had difficulty initiating urination. Saddle and perianal sensation, rectal tone, and defecation were normal, as was the remainder of her neurologic examination.

Voiding cystourethrogram demonstrated detrusor-external sphincter dyssynergia (figure 2A). Spinal MRI revealed conus T2 hyperintensity (figure 2B).

Sacral cord injury can result in detrusor-external sphincter dyssynergia.¹ This case illustrates the location of the Onuf nucleus, the micturition center, which contracts the detrusor while relaxing the urethral sphincter.² The patient's symptoms resolved in 2 months.

Figure 2 Voiding cystourethrogram and MRI after embolization

(A) Typical abrupt urethral sphincter tapering (arrow) of detrusor-external sphincter dyssynergia seen on voiding cystourethrogram. (B) Axial T2 lumbar spine MRI demonstrates conus medullaris hyperintensity (arrow).

Figure 1 Angiogram and postembolization cast of spinal fistula

(A) Left L1 anteroposterior spinal angiogram demonstrates a dilated anterior spinal artery (ASA) supplying a perimedullary fistula (arrow) with normal caudal ASA (arrowhead). (B) Unsubtracted view confirms embolic material in normal caudal ASA (arrowhead).

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