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## LETTER TO THE EDITOR

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### MISTAKING POST-STROKE MUSCLE SPASM FOR ARTERIAL PULSATION IN PATIENT WITH HEMIPLEGIA AFTER STROKE

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Seventy four year-old male patient was scheduled for elective pancreaticoduodenectomy-pylorus-preserving operation. He has history a cerebral infarction with right hemiplegia. Electrocardiogram, pulse oximetry and non-invasive blood pressure monitor were applied before general anesthesia induction. Invasive arterial pressure monitor was needed, so we tried to cannulate at right radial artery. The radial artery typically lies between the brachialis and flexor carpi radialis tendons. But, we couldn't palpate any pulses there. So we searched for it around there because the location of radial artery might be varied<sup>1</sup>. We found the pulsation at lateral dorsal side of right wrist, and we considered it as a dorsal carpal branch of radial artery. However, it was doubtful that the pulsation was a real artery, because its pulsation rhythm was not synchronized with electrocardiogram. So we checked the pulsation with ultrasonography to confirm the blood vessel. On Doppler, there was no sign of blood flow. We found the same pulsated movement in the proximal portion of the dorsal forearm, and confirmed it an extensor pollicis longus tendon.

In stroke patients, post-stroke spasticity may affect about 30% in survivors<sup>2</sup>. Symptoms of spasticity vary in localization and severity and may include hypertonicity, clonus, exaggerated deep tendon reflexes, muscle spasm, scissoring, and fixed joints. The degree of spasticity may vary from mild muscle stiffness to severe, painful, and uncontrollable muscle spasms<sup>3</sup>. In this case, twitching of extensor pollicis longus muscle was misunderstood as a radial arterial pulsation. Electrocardiogram is routinely monitored in the operation room setting, so we had question about discordance between heart rhythm and pulsation. But, it can be misunderstood for arterial pulsation without real time electrocardiogram and tendon injury can be caused. So, physicians have to pay attention to this point when doing arterial blood sampling or cannulation in post-stroke patients. Detailed history taking about stroke and post-stroke spasm is necessary, and if possible, electrocardiogram or ultrasound may be helpful.

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## References

1. RUENSAKULRACH P, EIZENBERG N, FAHRER C, FAHRER M, BUXTON BF: Surgical implications of variations in hand collateral circulation: anatomy revisited. *J Thorac Cardiovasc Surg*; 2001, 122(4):682-6.
2. MAYER NH, ESQUENAZI A: Muscle overactivity and movement dysfunction in the upper motoneuron syndrome. *Physical Medicine & Rehabilitation Clinics of North America*; 2003, 14:855-883.
3. PATEL AT: Early diagnosis of post-stroke spasticity and treatment options. *US neurology*; 2010, 5(2):47-51.