A 51-year-old man presented to a direct-access physical therapy clinic with persistent neck pain for 5 days after a fall in shallow water while surfing. Impact to the left side of his head caused right lateral flexion and axial compression, resulting in immediate but fleeting pain radiating into the right upper extremity. He denied a loss of consciousness, headache, dizziness, vertigo, or paresthesia. The patient was an avid swimmer and had resumed swimming 1 day after the injury.

On examination, he was alert and exhibited no distress. He reported that his pain was 2/10 to 7/10 and localized to the mid to lower cervical paraspinous region. He demonstrated only mild range-of-motion deficits. Based on “dangerous mechanism of injury” from the Canadian cervical spine rule as being a high risk factor,1 the physical therapist ordered radiographs of the cervical spine.

Radiographs indicated subtle C4–5 anterior subluxation and widening of the interspinous space, suggestive of a more serious injury (FIGURE 1). Following consultation with neuroradiology, a computed tomography scan revealed a C4 right pedicle and lamina fracture, causing a free-floating mass fracture. Extension of the fracture line across the right transverse foramen suggested associated injury to the vertebral artery (FIGURE 2). A magnetic resonance angiogram confirmed right vertebral artery dissection at the C4 level, with resultant distal absence of flow-related enhancement (FIGURE 3). Neurosurgery was consulted, and no further treatment of the right vertebral artery dissection was indicated.

The patient underwent an urgent C3–5 anterior cervical discectomy and fusion. At 4-month follow-up, he reported no pain or neurovascular symptoms, and returned to surfing and swimming without complication. This unusual case illustrates how a dangerous mechanism of injury may result in significant trauma, despite few clinical signs. Additionally, it illustrates the need for the application of imaging guidelines in patients who delay in seeking medical care.

Reference

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