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Bataclan's Ulnar Nerve Syndrome

To the Editor:

On November 13, 2015, during terrorist attacks in the Bataclan concert room (Paris, France), a 24-year-old man with no medical past history (except for thrombocytopenic purpura in childhood) was injured by gunshots on the left elbow. After having escaped, he was taken in charge by prehospital units and transferred to the emergency department of a nearby general hospital. Upon initial examination, he presented only limited skin erosion without penetrating wound on the posteromedial face of the left elbow, as seen in the **Figure**, panel A. He received a prescription for local antiseptics and simple dressings for 7 days, and was discharged.

However, he initially noticed a numbness of the left fifth finger, which did not improve over days. One week after the initial event, he was referred to our unit, which specializes in upper limb and peripheral nerve surgery.

On physical examination, he presented a complete sensitive-motor palsy of the ulnar nerve, with an anesthesia of the fifth finger. Froment sign and Wartenberg sign were positive. Bouvier's manoeuvre was positive as well, with a 90° flexion of the proximal interphalangeal joint. Third finger mobility, as assessed by Egawa test, was 0.5 cm on the left hand and 5 cm on the right hand. Finally, Tinel sign was also present, suggesting nerve irritation at the cutaneous injury site.

No fracture was seen on radiographs. Electromyographic study concluded on a major ulnar nerve palsy at the elbow

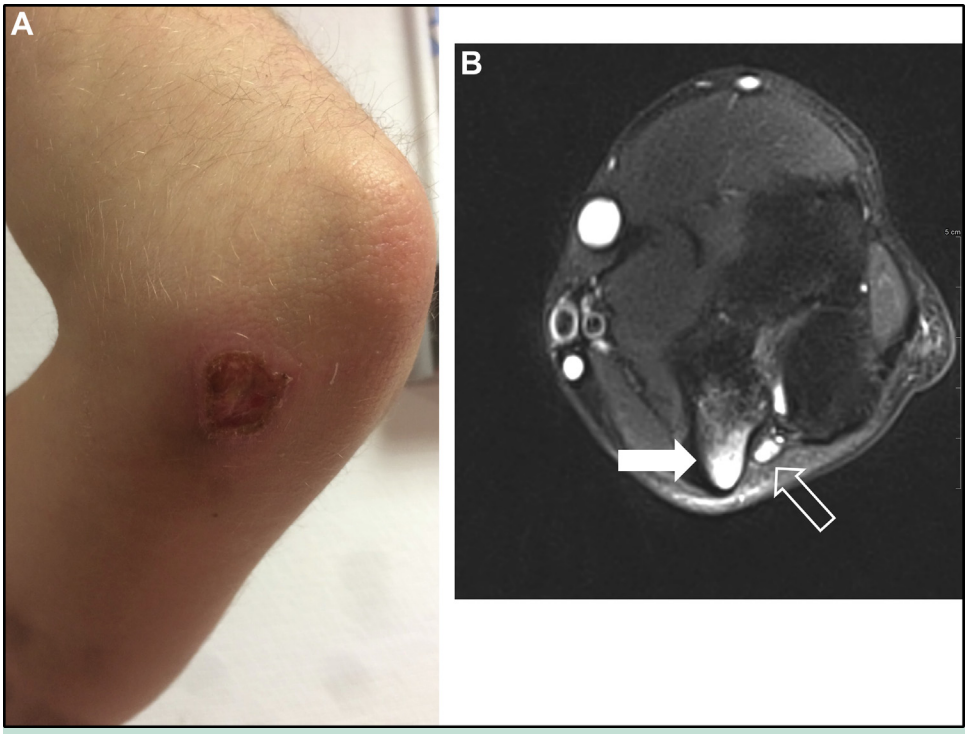

Figure Panel A: skin erosion without penetrating wound on the postero-medial face of the left elbow. Panel B: bony bruise of the medial condyle (white arrow), hypersignal of the ulnar nerve on T2-weighted MRI scan (open arrow).

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level. Elbow magnetic resonance imaging showed a bony bruise of the medial condyle (**Figure**, panel B, white arrow) and a hypersignal of the ulnar nerve on T2-weighted magnetic resonance imaging scans (**Figure**, panel B, open arrow).

Beyond psychological follow-up and anxiolytic therapy (alprazolam 0.25 mg 3 times a day), a conservative management was offered for the ulnar neurological symptoms. As expected, this Sunderland stage 1 nerve injury had a favorable clinical course, with an improvement of the fifth finger sensitivity over the following 6 months. Cautious monitoring is ongoing, because neurolysis might be necessary in case of incomplete recovery.

Although nerve lesions induced by gunshot injuries are well described, cases of nerve palsy in lack of transfixing wound have not been reported to date. The shock wave induced by 7.62-mm bullets from a Kalashnikov AK-47 could account for this ulnar nerve lesion. However, it could theoretically be observed only in subcutaneous nerve segments, such as the ulnar nerve at the elbow or the fibular nerve at the knee.

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