

November 25, 2020

Dear editor,

The manuscript has been revised according to the requirements of the reviewer.

The reviewer's question:

The authors should include the type of trauma causing the injuries, and also if these injuries were restricted to upper limb? or there were other organs or structures involved?. It is required when you approach the study of trauma-related thrombophilia. The fractures were a consequence of the traumatism event, even when the initial D-dimer levels were normal, the late PTE may be preceded by an undetected DVT. The patient was not obese, his BMI was below 30.

Answer:

The patient had a motorcycle accident on August 28, 2013. The left little finger landed first, then the left wrist flexed and landed, and the dorsal skin of the left forearm was punctured by ulna and radius fractures, causing pain, swelling and bleeding of the left upper limb. He was sent to our hospital for emergency treatment for debridement, and his left arm was fixed with long arm plaster. The X-ray radiography showed fractures of the left distal ulna, radius and little finger, as well as wrist joint dislocation. The injury occurred only in the left upper limb and no other organs or tissues were injured. Then external fixation and Kirschner wire were used to stabilize the left distal ulna, radius and little finger. The patient walked every day after the operation. The swelling of the left forearm was reduced 12 d after the first surgery. Open reduction and internal fixation were performed under general anesthesia to stabilize the left distal ulna and radius. Since some of the bone in the distal radius was lost due to compression, we took about 10 g bone from the left ilium to fill. Operation continued for 4h. After the anesthesia recovery period, the patient told us that he suffered severe pain and could hear the noise from the electric drill during the operation, but he was unable to communicate this during the operation. This led to psychological trauma. The patient became very

sensitive to pain, and remained in bed until the 3rd post-operative day. The activity of both lower limbs was significantly reduced, resulting in slow movement of the blood in the both lower limbs circulation. On the third post-operative morning, when he got out of bed and was going to the toilet, he was unable to stand, owing to double lower limb weakness and pain. The double lower limbs were not tumid, and the skin color was normal. When he received a shot for the intravenous infusion, he was very nervous, and suddenly felt chest pain, asthma, and had breathing difficulty. Additionally, his double lung breaths sounded thick, and had a large number of dry and wet rales. The partial pressure of arterious blood oxygen was 7.2kPa (normal range 11-13 kPa), arterial oxygen saturation was 88.8% (normal range 91.9-99.0%), and central venous pressure was 11 cmH₂O (normal range 5-10 cmH₂O). After oxygen therapy, peripheral capillary hemoglobin oxygen saturation was 92%, blood pressure was 158/110 mmHg, heart rate was 110 bpm, and respiratory rate was 30 bpm. The brain natriuretic peptide troponin I was negative. The serum D-dimer level was 17.48 µg/mL. The bedside electrocardiograph showed sinusachycardia. Wells and revised Geneva scores were 9 and 11, respectively. The patient was diagnosed with high clinical probability of PTE based on these Wells and revised Geneva scoring systems. Computed tomographic pulmonary angiography (CTPA) showed intravascular wirelike, sheet filling defects in both sides of the pulmonary artery trunks and its branches; the large shadow in the right pulmonary trunk was about 56 mm × 16 mm. Doppler ultrasonography showed no significant anomalies in the upper extremity deep vein, within the bilateral posterior tibial veins of the lower limb thrombus formation. We hypothesized that PTE might be caused by the detachment of thrombus in the deep veins of lower limbs. The patient was a 51-year-old male, weighed 90 kg and was 175 cm tall. His body mass index was 29.4 kg/m². Asians and the west people belong to different races. The BMI obesity standard of WHO is not very suitable for Chinese people, so the reference standard of BMI obesity in China is established as BMI ≥ 28 kg/m².

Best regards,

Feng Xue