CASE REPORT

Beau’s lines following elbow dislocation

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Introduction

Transverse band-like depressions extending across the nail and affecting all the nails at the corresponding level are known as Beau’s lines. They were first described in 1846 by Beau as a retrospective indicator of a number of disease states. They appear to occur as a result of inhibition of nail growth, although the detailed pathogenesis has not been established.

History

A 15-year-old girl was a front seat passenger in a head on road traffic accident. The car was traveling at approximately 30 mph. Her left arm was extended and struck the dashboard at impact. She was brought to the local Accident and Emergency department where clinical examination revealed a deformed left elbow with no distal neurovascular deficit. X-ray showed a posterior dislocation of the left elbow with no other associated bony injury.

Her left elbow was relocated under sedation in casualty. She was observed for 2 h and discharged in an above elbow cast with a strong radial pulse and intact motor and sensory function.

She was reviewed and her plaster of Paris removed at 3 weeks post injury. Physiotherapy was requested to encourage elbow mobilisation.

Two months after the initial trauma it was noticed that she had developed Beau’s lines on all four fingers of her injured arm but not on the thumb (Fig. 1). Sudomotor function appeared reduced in her left hand (tactile adherence tested with the plastic pen slide test). However, there were no obvious changes compatible with sympathetic dystrophy. There were no long-term reported sequelae and her Beau’s lines were seen to grow out at 8 months post injury.

Discussion

Justin Honore Simon Beau described transverse depression of the finger nails following acute febrile illness. In Beau’s observations of typhoid fever, he noted the appearance of these nail abnormalities in survivors of the disease. He detailed a severe febrile attack can lead to complete loss of nails and that a milder illness may give rise to transverse depression in one or a number of the nails some weeks after the episode. This depression sometimes involves the whole depth of the nail plate and moves forward with the nail’s growth.

Since Beau’s description transverse depressions in the nails as markers of disease has been reported in a number of conditions such as Raynard’s
Disease, myocardial infarction and pulmonary embolism, acute renal failure, psoriasis, and dysmenorrhea.

Trauma to the hand and wrist with nerve/tendon damage and ischemia after use of an upper extremity tourniquet have both been described giving Beau's lines. Supracondylar fracture giving rise to unilateral Beau's lines has been reported previously as have Beau's lines in conjunction with pyogenic granulomas after either forearm fracture or frank nerve and tendon division. Non-traumatic neuropathy with brachial plexopathy after metastatic infiltration or reflex sympathetic dystrophy after viral illness giving unilateral Beau's lines have also been reported.

In contrast to previously reported cases, we describe a patient who developed Beau's lines after trauma without a fracture or obvious neurovascular injury. Moreover, these Beau's lines only developed in the fingers of the affected arm and did not correspond to any specific neurovascular distribution. We are not aware of any case report in the literature, which presents Beau's lines in conjunction with joint dislocation. Although this patient was documented as having intact neurovascular function, no assessment of autonomic nerve function was routinely performed. We postulate that trauma resulting in an autonomic neuropraxia may be the underlying cause of Beau's lines in this context.

References