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Case Report

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K wire: a lethal implant

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ABSTRACT

Pins used to stabilize the acromioclavicular joint have a colourful, interesting history of migrating into remote, life threatening locations such as lungs, spinal cord, the neck, posterior to the carotid sheath and the pleura or close to it. 35 year male 3 year post op K wire fixation acromioclavicular joint came with history of pain in neck was diagnosed with broken K wire in neck. Even though K wire fixation and tension band wiring is one of the modes of treating acromioclavicular dislocation K wire fixation should be kept as the last resort while planning the treatment. Complications of K wire migration can be lethal. Hence K wiring in acromioclavicular joint should be done with utmost caution.

Keywords: K wire, Acromioclavicular dislocation, tension band wiring

INTRODUCTION

Pins used to stabilize the acromioclavicular joint have a colourful, interesting history of migrating into remote, life threatening locations such as lungs,[1] spinal cord,[2] the neck,[3] posterior to the carotid sheath and the pleura or close to it.[4] Vessels in the thorax and neck have also been the recipients of pin migration injury. In this case report we are going to discuss about complication of K wire in treating acromioclavicular dislocation.

CASE REPORT

35 year male came with history of RTA was diagnosed to have grade 3 Acromioclavicular dislocation which was treated with combination of ligamentous repair and reinforcement with K wire fixation and tension band wiring 3 years back (Figure 1). Patient was advised to have regular check-up and need for early implant exit. But patient lost follow up and presented to us with pain in neck. On examination K wire was palpable at neck which was confirmed by X-ray (Figure 2). Patient was investigated further with MRI to see its relation to the vascular structures which showed K wire away from vessel. Patient underwent implant exit (Figure 3) and broken and migrated K wire were removed safely.

Figure 1: Immediate post op.

Figure 2: Three year follow up.

Figure 3: Post op X-ray.

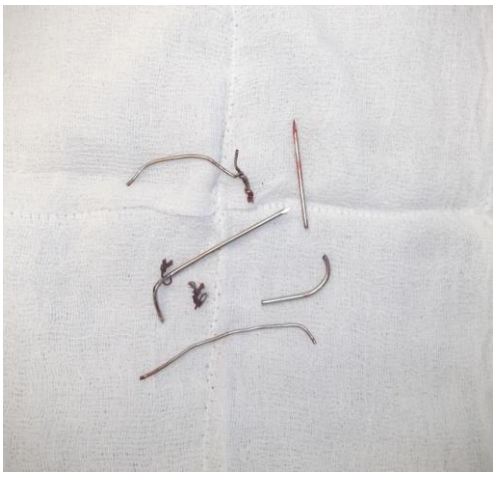

Figure 4: Broken implants.

DISCUSSION

The acromioclavicular joint is commonly involved in traumatic injuries that affect the shoulder. Treatment of these injuries has been controversial and continues to evolve. Most injuries are related to falls onto the shoulder and to repetitive use of the shoulder, such as heavy labor and athletics. Lizaur et al.[5] advocate the use of two 1.8-mm percutaneous Kirschner wires to stabilize the joint, and they emphasize repair of the damaged deltoid and trapezius. These pins can be inserted from the lateral edge of the acromion through the joint and into the clavicle or from the joint out through the acromion and then back across the joint into the clavicle. The wire was then bent back on itself to meet the other end of the wire. The two ends were then fastened together like a safety pin to prevent migration. Although the pin is bent, it can break, migrate, and create serious consequences.

In the most incidences pin migration can be prevented by bending a hook on the portion of the pin that protrudes from the acromion process. However the pins can break and then part of the pin is free to migrate. Patients must be prepared and forewarned of the possible necessity of pin removal and the complications of pins that are not removed. Some of the theories behind pin migration in the thoracic region are muscle action, the great freedom of movement of the shoulder, negative intrathoracic pressures associated with respiration, regional resorption of bone, gravitational force.

In our patient who was a manual labor who does overhead activities had his K wire broken and migrated into the neck. Even though precaution like bending of wire was done the K wire got broken and migrated into neck. Intra operatively we were able to see the broken K wires and SS wires (Figure 4). Lyons and Rockwood[6] reviewed 37 reports of pin migration in operation around shoulder. They recommended that pin use should be avoided in operations about the shoulder. When pins are utilized, they should be bent or have restraining devices to decrease the risk of migration. The patient should be informed of the risks. Close follow up should be performed and pins should be removed at the conclusion of the therapy or whenever migration is noted. The pin migration may have devastating consequences Eight out of thirty seven patients died.

Even though K wire fixation and tension band wiring is one of the modes of treating acromioclavicular dislocation K wire fixation should be kept as the last resort while planning the treatment. Complications of K wire migration can be lethal. Hence K wiring in acromioclavicular joint should be done with utmost caution.

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