Clinical Brief

Unusual K-wire Migration

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ABSTRACT

The authors report a case of intra-abdominal migration of a Kirschner wire from the left hip to the right lobe of the liver in a 5-year-old child. The wire was used for stabilization of the left hip after open reduction for neglected unreduced congenital dislocation of the left hip. The migrated wire was removed by laparotomy. Surprisingly, no injury was noted to any intervening abdominal structure intra-operatively. This unusual migration of a Kirschner wire into a child’s liver has not been reported previously. [Indian J Pediatr 2006; 73 (12) : 1107-1108] E-mail : yadavvikas2001@yahoo.com

Key words : Wire; Liver; Migration; Hip; Laparotomy

Orthopedic procedures frequently involve utilization of internal fixation devices. Migration of these devices viz. Kirschner wires, Rush pins, etc., is well known.¹²,³ Such migrations usually follow a retrograde path and the wires protrude near the entry point. Occasionally migration does occur in antegrade direction. We authors describe a case in which a Kirschner wire migrated from the left hip to the right lobe of liver in a five-year-old child. The migration was noted 6 weeks after the primary hip surgery and the child remained asymptomatic in the intervening period. The wire was removed by a laparotomy and no other structural tissue or organ damage was found. The child recovered uneventfully and was asymptomatic 1 year after the second surgery.

CASE REPORT

A 5-year-old child operated for neglected unreduced congenital dislocation of left hip was brought for routine follow-up in orthopedic outdoor. The procedure had involved open reduction and fixation with a stainless steel Kirschner wire for stabilization of the hip joint and a plaster spica. Radiographs after 2 weeks post-operatively evidenced correct placement of the wire. The wire had been left outside the skin to facilitate easy removal of the wire. When the POP spica was cut, the wire could not be found. The parents were not sure if the wire had backed out and fallen. Fresh roentgenograms of the hip were ordered to be certain and the wire was found to have migrated to the right hypochondrium (Fig. 1). The child was absolutely asymptomatic. Ultrasound of the abdomen confirmed the embedding of a linear foreign body in the liver and no evidence of pneumoperitoneum or haemoperitoneum. A laparotomy was performed to remove the wire through supra-umbilical right transverse muscle cutting incision. It was found embedded 2 inches into the right lobe of the liver without any damage to other intra-abdominal structures. The child recovered uneventfully and remained healthy 1 year after the extraction of the wire.

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Fig. 1. Radiographs showing full length of the migrated wire in AP and lateral views
DISCUSSION

Management of various bone and joint pathologies involves use of Kirschner wires by orthopedic surgeons. These wires have a tendency to migrate. This migration which is usually a back-out takes place in the direction opposite to that of primary insertion. These wires have reportedly migrated to aorta, heart, thorax, spleen and other potentially less dangerous areas from hip, shoulder girdle, sternum etc.\(^4,5,6,7,8\)

The reason these wires migrate is that they are non-threaded and muscular movements propel them usually backwards along the path of least resistance. Antegrade migration is rarely reported. This complication must be avoided by bending the free end of the wire, removing the hardware as soon as possible.

In the present case, the wire was used for stabilizing the hip joint after open reduction of an unreduced neglected congenital dislocation of the left hip. The wire was left outside the skin to facilitate removal without anaesthesia by simply pulling out the wire in the outdoor after 6 weeks. Follow-up at 2 weeks showed the wire in the original placement. But at the next follow-up at 6 weeks, the wire presumably migrated through the acetabulum into the pelvis and across the abdominal cavity to finally embed in the right lobe of liver. Surprisingly, no injury was caused to any intervening structure throughout the path which the wire took about 4 weeks to trace. Another unusual feature of this migration was that all of the 10 cm length of the wire migrated to finally embed in the liver, without breakage. Literature review revealed that no such migration has been previously reported.

REFERENCES