

Supplementary material

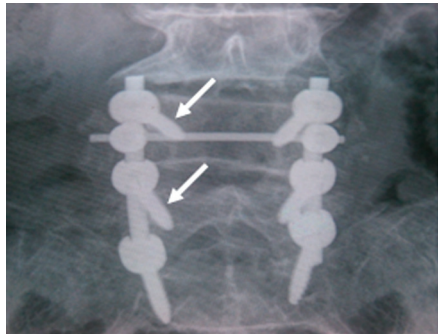


Fig. aa

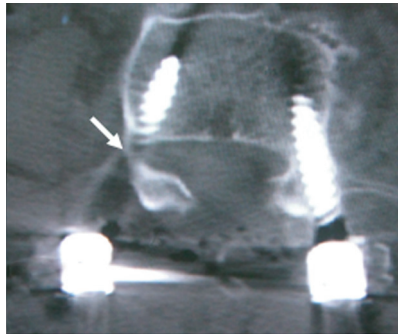


Fig. ab

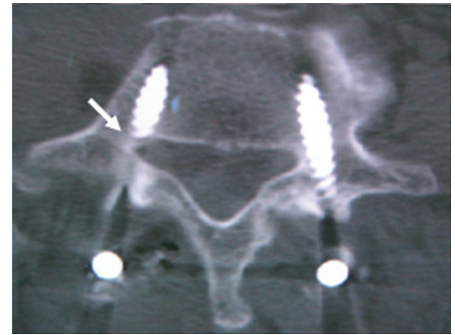


Fig. ac

Procedure images for case 2. aa) suspicious malpositioning of transpedicular screws in L4 and L5 by AP plain radiograph (white arrow); ab) medial perforation of screw in L4 (white arrow) by CT scanning; ac) medial perforation of screw in L5 by CT scanning (white arrow).



Fig. ba



Fig. bb

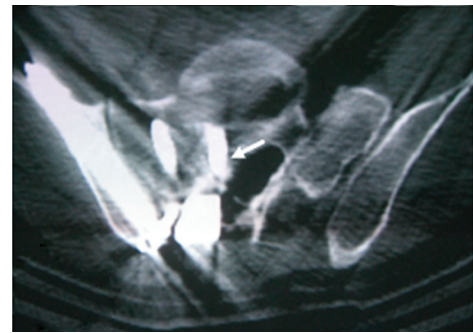


Fig. bc

Procedure images for case four. ba) comminuted fracture of right sacrum by CT scanning (white arrow); bb) suspicious malpositioning of transpedicular screw in the sacral canal by AP plain radiograph (white arrow); bc) misplaced screw in the spinal canal by CT scanning.