Avoiding pinch-off syndrome: Ultrasound-guided infraclavicular axillary vein puncture


Abstract:

PURPOSE: Pinch-off syndrome (POS) is a serious complication encountered during the long-term management of totally implantable access ports (TIAPs). The aim of this study was to examine the effect of ultrasound-guided infraclavicular axillary vein puncture to avoid POS in patients with long-term use of a TIAP.

METHODS: This was a retrospective review of 207 consecutive TIAPs: one hundred devices implanted using an anatomical landmark technique were used as historical controls (Landmark group), while 107 devices were implanted using an ultrasound (US)-guided puncture method (US group). The pinch-off grade (POG) was determined using chest X-ray findings following the definition of Hinke, and the progression of POG during the follow-up period of the Landmark and US groups was compared.

RESULTS: Sixteen cases in the Landmark group were POG-1 and 3 were POG-2, while all cases in the US group were POG-0 at the time of venipuncture (p < 0.001). Eleven patients in the Landmark group showed some degree of progression of the POG during the follow-up period. In contrast, there were no cases showing progression of the POG in the US group (p = 0.002).

CONCLUSIONS: US-guided infraclavicular axillary vein puncture was found to effectively make it possible to avoid POS for the long-term management of TIAPs, as well as at the time of implantation.