

Chemoport insertion without image guidance via Rt IJV: A single center experience on peri-procedural complications

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Purpose:

To report our early experience in chemo port insertion without image guidance by surgeons. **Materials & Methods:** This was a cross-sectional study conducted in a tertiary center with 19 chemo port insertions done from November 2017 to May 2018. The chemo ports were inserted at the operation theater unit. All the chemo ports had right Internal Jugular Vein (IJV) as the entry site. Other entry sites included the left IJV, sub-clavian veins and the inferior vena cava was not used. Immediate and early complications were recorded. None of the port insertions were performed under image guidance with the aid of ultrasound and fluoroscopy. **Results:** The technical success rate was 100%. In terms of immediate complications, there were only two cases of arterial puncture that resolved with local compression. No pneumothorax or air embolism was documented. No case of early complications was recorded. The most common early complication was catheter blockage (2/19; 10.52%), followed by catheter-related infection (2/19; 10.52%). No incidence of catheter malposition, venous thrombosis and catheter dislodgement or leak was recorded. A total of 1 (5.26%) chemo ports had to be removed within 30 days; most of them were due to infections that failed to respond to systemic antibiotic therapy. In terms of place of procedure, there were no significant differences in complication rates between the chemo port catheter placements via image guidance in comparison to the one done without image guidance. **Conclusion:** Chemo port insertion without image guidance by surgeons gives low peri-procedural complication rates in comparison to chemo port insertion done by image guidance. Using right IJV as the entry site, the image guidance gives good success rate with least complication. The advantage of doing it without image guidance is that it saves a lot of time. It can be done under local anesthesia. It doesn't require any radiological assistance during the procedure. And it requires lesser number of skilled personals in terms of manpower. To our best knowledge, this is the first publication of chemo port insertion without image guidance.

This was a cross-sectional study conducted in a tertiary center with 161 chemoport insertions done from June 2008 to June 2010. The chemoports were inserted either at the angiography suite or at the mobile operation theater unit. Ninety percent of the chemoports had right internal jugular vein (IJV) as the entry site. Other entry sites included the left IJV, subclavian veins and the inferior vena cava. Immediate and early complications were recorded. All insertions were performed under image guidance with the aid of ultrasound and fluoroscopy. The technical success rate was 99.4%. In terms of immediate complications, there were only two cases of arterial puncture that resolved with local compression. No pneumothorax or air embolism was documented. Twenty-six early complications

were recorded. The most common early complication was catheter blockage (12/161; 7.4%), followed by catheter-related infection (9/161; 5.6%). Other complications were catheter malposition, venous thrombosis and catheter dislodgement or leak. A total of 11 (6.8%) chemoports had to be removed within 30 days; most of them were due to infections that failed to respond to systemic antibiotic therapy. In terms of place of procedure, there were no significant differences in complication rates between the angiography suite and the mobile operation theater unit. It is widely assumed that central venous stenosis (CVS) is most commonly associated with previous central venous catheterization among the chronic hemodialysis (HD) patients. We evaluated the validity of this assumption in this retrospective study. The clinical records from 2,856 consecutive HD patients with vascular access failure during a 5-year period were reviewed, and a total of 26 patients with symptomatic CVS were identified. Combined with radiological findings, their clinical characteristics were examined. Only seven patients had a history of internal jugular dialysis catheterization. Diagnostic multidetector row computed tomography angiography showed that 7 of the 19 patients with no history of catheterization had left innominate vein stenosis due to extrinsic compression between the sternum and arch vessels. These patients had a shorter period from the time of creation of the vascular access to the initial referral (9.2 \pm 7.6 months) than the rest of the patients (35.5 \pm 18.6 months, $p = 0.0017$). Our findings suggest that cases without a history of central venous catheterization may not be rare among the HD patients with symptomatic CVS. However, those still need to be confirmed by larger prospective studies of overall chronic HD patients with symptomatic CVS.

Central venous catheterization; complications; interventional radiology; vascular access ports.

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