

An unusual complication of internal jugular vein catheterization

Sir,

Central venous catheter (CVC) is a valuable tool in the management of critically ill patients and is often employed for monitoring the hemodynamic status and administering parenteral nutrition and medications. Complications associated with CVCs may be seen in more than 15% of patients.^[1,2] We encountered an unusual complication associated with CVC where the catheter tip was misplaced into the pleural cavity, and we outline how we identified the misplacement and effectively managed the complication.

Our patient was a 58-year-old lady who was diagnosed to have malignant ovarian cancer and underwent a staging laparotomy for the ovarian tumor. The surgery consisted of total abdominal hysterectomy with bilateral salphingo-oophorectomy, total omentectomy, diaphragmatic stripping, resection, and reconstruction of the right diaphragm. An intercostal drain was placed in the right chest. A right internal jugular CVC was placed intra-operatively using the 'landmark' technique and was successful in the first attempt with good back flow. Following an uneventful surgery, there was a deterioration of her vitals in the immediate post-operative period. The intercostal tube drained close to 1500 ml of serosanguinous fluid. The chest x-Ray showed blunting of the right costo-phrenic angle with clear lung fields and the central line tip in the correct position [Figure 1]. As the intercostal tube

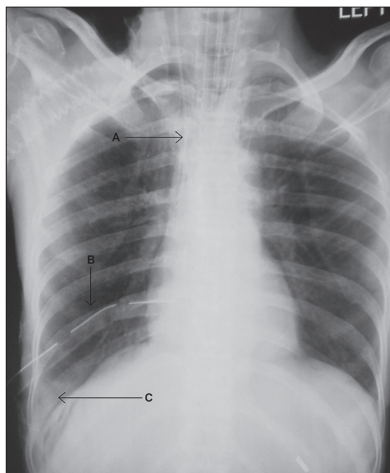


Figure 1: A: Central venous catheter B: Intercostal tube C: Small pleural effusion

drained copiously, we suspected a communication of the catheter with the right pleural cavity. To confirm this, we injected 50 ml of total parenteral nutrition fluid through the central line. Within a minute, the milky fluid drained out through the chest tube confirming misplacement of the central line. The central line was immediately occluded, and the patient resuscitated through peripheral lines. The patient responded well to the resuscitation and remained stable thereafter. The central line was removed 12 hours later. The patient had an uneventful recovery and was discharged on the 9th post-operative day.

Various studies have found that the experience of the medical professionals, number of attempts, attempts in conscious patients, obesity and prior catheterization to name a few, to have an association with the incidence of complications with CVC.^[2] Development of hydrothorax after CVC has also been described.^[3-5] The reason for the hydrothorax is the catheter tip eroding the vascular wall and entering the mediastinum and pleural cavity. Most of the reports describe this complication to have occurred in a delayed fashion and more importantly the complication usually went unnoticed, resulting in a delay in diagnosis. Communication of the CVC with the pleural cavity occurred in an acute setting in our patient. The misplacement was not immediately evident as the check chest x-Ray showed the catheter to be in the correct place. Ideally, injection of a radio-opaque contrast into the catheter would have diagnosed its misplacement. We used a simple, safe, yet effective method to confirm the misplacement of the catheter. Our patient had an intercostal drain, which made it easier for us to suspect the complication and diagnose it. If an intercostal drain was not present, this complication would have been more difficult to ascertain. A rapidly accumulating pleural effusion should then raise the suspicion of this complication. The use of ultrasound to guide the placement of CVC has reduced the incidences of complications. But, the routine use of ultrasound is not common in the developing countries, and this is the reason why we felt the need to report this case. Due to early identification and intervention, we were able to avoid a potentially life – threatening event in our patient.

**Rajaram Burrah, Archana Sonig, Patel Ravi,
Devi Uma**

Department of Gynaecologic Oncology, Kidwai Memorial Institute of Oncology,
Bangalore, Karnataka, India

Correspondence:
Dr. Uma Devi,

Department of Gynaecologic Oncology, Kidwai Memorial Institute of
Oncology, Bangalore - 560 029, India.
E-mail: icoccon@hotmail.com

References

1. Merrer J, De Jonghe B, Golliot F, Lefrant JY, Raffy B, Barre E, *et al.* Complications of femoral and subclavian venous catheterization in critically ill patients: A randomized controlled trial. *JAMA* 2001;286:700-7.
2. Ruesch S, Walder B, Tramèr MR. Complications of central venous catheters: Internal jugular versus subclavian access-a systematic review. *Crit Care Med* 2002;30:454-60.
3. Duntley P, Siever J, Korwes ML, Harpel K, Heffner JE. Vascular erosion by central venous catheters. Clinical features and outcome. *Chest* 1992;101:1633-8.
4. Kunizawa A, Fujioka M, Mink S, Keller E. Central venous catheter-induced delayed hydrothorax via progressive erosion of central venous wall. *Minerva Anestesiol* 2010;76:868-71.
5. Westermann SA, Pahlplatz PV, Brouwers MA. Timeline of cellulitis and

late development of hydrothorax induced by a right-sided central venous catheter: Report of a case. *JPEN J Parenter Enteral Nutr* 2010;34:341-3.

Access this article online	
Quick Response Code: 	Website: www.ijccm.org
	DOI: 10.4103/0972-5229.118419

Dispatch and return notification by E-mail

The journal now sends email notification to its members on dispatch of a print issue. The notification is sent to those members who have provided their email address to the association/journal office. The email alerts you about an outdated address and return of issue due to incomplete/incorrect address.

If you wish to receive such email notification, please send your email along with the membership number and full mailing address to the editorial office by email.