



This study confirmed the feasibility of intracavitary electrocardiogram for peripherally inserted central catheter positioning and the limits of chest X-ray” Monard et al (2018).

Abstract:

OBJECTIVES: To confirm the feasibility of intracavitary electrocardiogram guidance to verify tip’s position during insertion of peripherally inserted central catheter and to identify clinical factors or intracavitary electrocardiogram patterns associated with aberrant tip’s position.

METHODS: A prospective study was conducted in our university hospital after authorization of the ethics committee. All patients addressed for peripherally inserted central catheter insertion were included and received the insertion using intracavitary electrocardiogram and electromagnetic guidance. Side of insertion and three electrocardiogram factors were collected: visualization of P-wave at baseline (sinusal rhythm), acquisition of the maximal P-wave and the negative deflection. All patients had a systematic post-procedural chest X-ray. One of the investigators assessed all chest X-ray, blinded to the results of intracavitary electrocardiogram, and confirmed whether the tip’s position on chest X-ray matched with the intracavitary electrocardiogram information or if the tip was malpositioned on chest X-ray (mismatch with intracavitary electrocardiogram or aberrant position). Factors associated with malposition were described.

RESULTS: From January 2015 to April 2015, 330 patients were eligible, 5 had an

uninterpretable chest X-ray, and 14 were non-sinusal at baseline. Our main analysis population included 311 patients. We observed a mismatch between intracavitary electrocardiogram and chest X-ray estimate of the tip's position in 3 cases (1%) and an aberrant tip's position occurred in 3 cases (1%). Incidence of malposition was higher in the group of patients with non-sinusal rhythm (14%) and when the catheter was inserted on the left side (7%).

CONCLUSION: This study confirmed the feasibility of intracavitary electrocardiogram for peripherally inserted central catheter positioning and the limits of chest X-ray. Insertion on left side may represent risk factor for aberrant position but our study lacked power to establish a statistical link.

Reference:

Monard, C., Lefèvre, M., Subtil, F., Piriou, V. and David, J.S. (2018) Peripherally inserted central catheter with intracavitary electrocardiogram guidance: Malposition risk factors and indications for post-procedural control. *The Journal of Vascular Access*. June 1st. .

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