

Intracavitary EKG for tip position of PICC-ports

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BACKGROUND

The intracavitary EKG method is the gold standard technique for catheter tip verification. It reduces time, costs and exposure to ionizing radiation, it is cost-effective, simple to apply and safe for the patient. In this study we present the application of the method to the insertion by nurses of a new venous catheter called PICC-port.

AIM

To demonstrate efficacy, reliability and accuracy of IC-EKG in comparison with chest-X ray in patients with PICC-port devices.

MATERIAL AND METHODS

- **Type of study:** observational study.
- **Population:** first 25 oncology patients undergoing PICC-port insertion by nurses.
- **Context:** a tertiary hospital in Madrid (Spain).
- **Methodology:** tip position of PICC-port were verified by IC-EKG during procedure, considering correct tip location a non bifasic maximal IC P-wave (image 1). After procedure, a chest x-ray was performed. Correct tip location was considered when tip was visible between 2-4cm below tracheal carina reference (image 2). Results between both methods were then compared.

RESULTS

- There were no complication due to the method itself.
- IC-EKG method was feasible 100% of cases → superficial P wave was visible.
- IC P-wave (no bifasic, maximal) was reliable in 100% cases
- In 2 cases of 25, tip position verified by chest X-ray was not clear enough to understand the exact position (8%) (IC-EKG was correct)
- In 2 cases of 23, the tip was visible above the tracheal carina (8.6%) (IC-EKG was correct).
- In 21 cases of 23, the method was accurate → the tip was visible in the right place (91.3%).

LIMITATIONS

- Small sample
- Different operators performing chest X-ray
- Difficulty of chest X-ray lecture

CONCLUSIONS

- Results are similar to literature
- First time in Spain SIPP protocol
- Only 2 malpositions based on chest X-ray
- **Feasible:** applicable in all cases of this study
- **Easy to observe** IC P-wave
- **Accurate:** almost 100% precision rate.

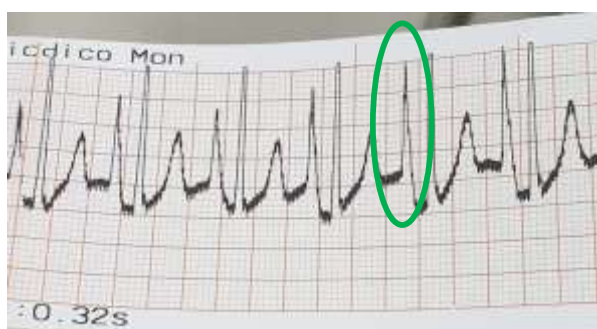


Image 1. IC-EKG were non bifasic maximal IC P-wave can be observed.

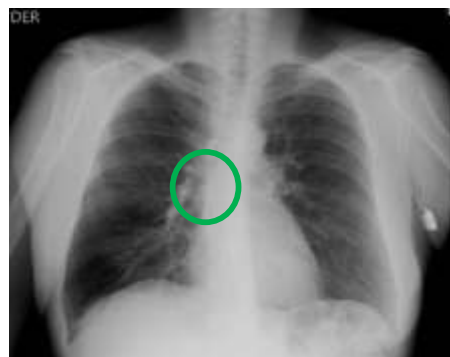


Image 2. Catheter tip position 2-4cm below carina in chest X-ray.