

An Unusual Cause of Electrocardiographic Artefact: Patient's Warming Blanket

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Abstract : In electrocardiography, an ECG artefact is used to indicate something that is not heart-made. Although technological advancements have produced monitors with the potential of providing accurate information and reliable heart rate alarms, despite this, interference of the displayed electrocardiogram still occurs. These interferences can be from the various electrical gadgets present in the operating room or electrical signals from other parts of the body. Artefacts may also occur due to poor electrode contact with the body or due to machine malfunction. Knowing these artefacts is of utmost importance so as to avoid unnecessary and unwarranted diagnostic as well as interventional procedures. We report a case of ECG artefacts occurring due to patient warming blanket and its consequences. A 20-year-old male with a preoperative diagnosis of exstrophy epispadias complex was posted for surgery under epidural and general anaesthesia. Just after endotracheal intubation, we observed nonspecific ECG changes on the monitor. At a first glance, the monitor strip revealed broad QRS complexes suggesting a ventricular bigeminal rhythm. Closer analysis revealed these to be artefacts because although the complexes were looking broad on the first glance there was clear presence of normal sinus complexes which were immediately followed by 'broad complexes' or artefacts produced by some device or connection. These broad complexes were labeled as artefacts as they were originating in the absolute refractory period of the previous normal sinus beat. It would be physiologically impossible for the myocardium to depolarize so rapidly as to produce a second QRS complex. A search for the possible reason for the artefacts was made and after deepening the plane of anaesthesia, ruling out any possible electrolyte abnormalities, checking of ECG leads and its connections, changing monitors, checking all other monitoring connections, checking for proper grounding of anaesthesia machine and OT table, we found that after switching off the patient's warming apparatus the rhythm returned to a normal sinus one and the 'broad complexes' or artefacts disappeared. As misdiagnosis of ECG artefacts may subject patients to unnecessary diagnostic and therapeutic interventions so a thorough knowledge of the patient and monitors allow for a quick interpretation and resolution of the problem.

Keywords : ECG artefacts, patient warming blanket, peri-operative arrhythmias, mobile messaging services

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