Electrocardiography

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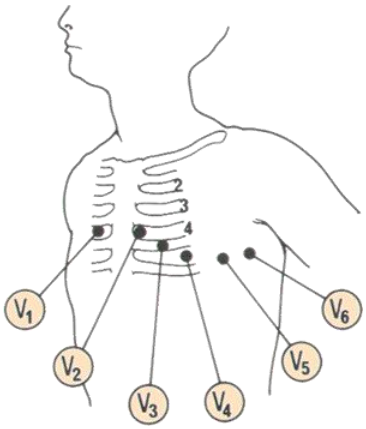
I. Introduction

Electrocardiography is the evaluation of the heart's electrical activity. It's an electrical picture of the heart. An electrocardiogram is commonly referred to as an ECG or EKG. (EKG is referring to the German spelling.) This cardiovascular technology for a variety of purposes such as: finding the rate of the patients' heartbeat, regularity of the heartbeat, size of heart chambers, damage done to the heart, and the effects of medicine or other cardiovascular technology such as a pacemaker.

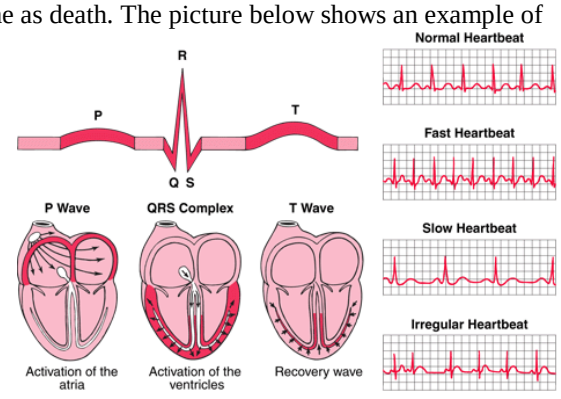
II. Methods

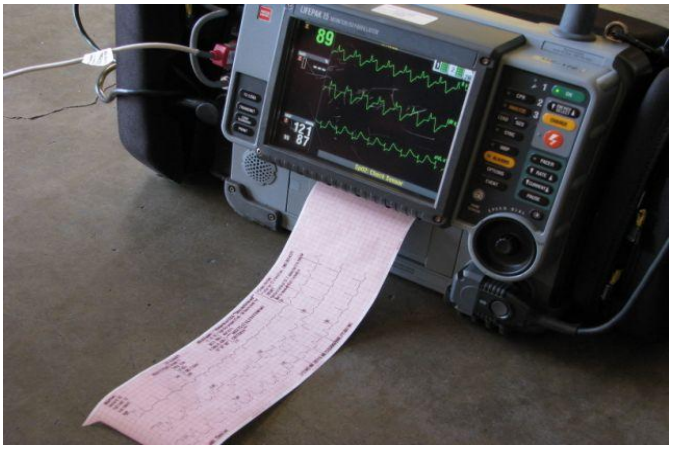
Specialized stickers are placed on the patients' chest. It must be direct skin to sticker contact without any hair interfering. Alcohol swabs are used to enhance conductivity because the skin is a poor conductor. The stickers that are attached to the skin each have their own long wire that stems off which is called a lead. The figure to the right shows an example of where the ECG attachments would probably be placed in order to read the electricity conducted through the body's fluids. .



III. Results

An ECG shows different variations to a regular heartbeat. A Heartbeat that is too fast or too slow even by a small amount can be extremely harmful to the body. Complications can range from losing consciousness and fainting to being as extreme as death. The picture below shows an example of what a normal, fast, slow, and irregular ECG might look like. The body's natural regulator is located at the Sino-Atrial node. This node is located at the upper portion of the heart. The electrical impulse is produced which contracts the heart and causes blood to pump throughout the heart and to the rest of the body. The problem however, is that even though the heart may produce an electrical impulse, the heart may not contract and blood may not be pumped to the rest of the body. An ECG is not able to show this distinction.





IV. Discussion

An ECG is a common and successful machine that records the incorrect and correct heart rhythms of a patient. An area in this device that needs to be improved is the successfulness of the device to find problems in the heart that could be interfering with these electrical impulses which causes a problem with contractions and blood flow. Combining technology of other cardiovascular devices and improving these devices is near in the future. It's even keeping up with the popularity and convenience of having this technology right in the palm of your hand. An app for the iPhone suggests that it's possible to have an accurate reading without even making a trip to the doctor's office.

References

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