

Action of Acetylcholine and Adrenaline upon the Membrane Potential of the Atrio-ventricular Node (Tawara)*

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For the purpose to elucidate the mechanism of the dromotropic actions of the vagus and sympathetic nerves upon the A-V conduction, the effects of acetylcholine and adrenaline on the cellular action potentials of the A-V node¹⁾ of the puppy were investigated.

As shown in the Fig. 1, acetylcholine depressed the rate of rise of action potential, prolonged the delay of the spike until the spike became extinguished leaving only a minute local depolarization (A-V block). Such effect of acetylcholine is not like to that upon the ordinary atrial fiber. The effect of adrenaline was opposite to the effect of acetylcholine: increase of action potential rising velocity, decrease of the spike delay, slight increase of spike height.

Both of these effects were quite reversible as well as reproducible.

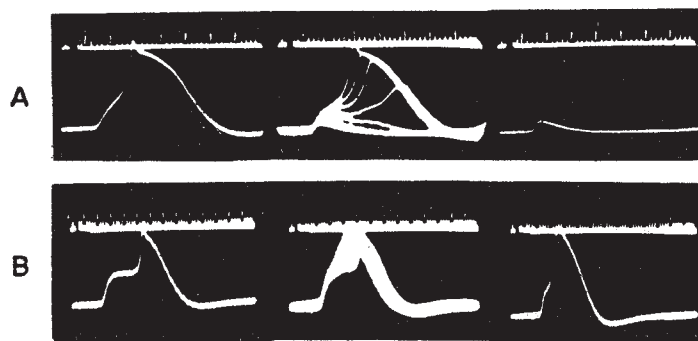


Fig. 1. Effects of acetylcholine (A) and adrenaline (B) on the membrane action potential of the A-V node. Left: control, middle: successive changes superimposed, right: final stage. Dog.

References : 1) Matsuda, Hoshi and Kameyama, This journal, 1958, **68**, 8.

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