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The Synergistic Action of Benzyl Ephedrine and Adrenaline.

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It has already been stated¹ that benzylephedrine, B-phenyl-B-hydroxy-d-methyl-ethyl-methyl-benzyl-amine, has a local anesthetic action about twice as powerful as procaine, as measured by the wheal method.

The principle of adrenaline-procaine synergism was applied to this new compound. Using 0.05% solutions the addition of 0.0005% adrenaline prolonged the time of wheal anesthesia from 8 to 18 minutes. The further addition of adrenaline up to 0.005% prolonged the time to 140 minutes. The latter is a greater potentiation than is obtained with procaine adrenaline mixtures. Increasing the amount of benzylephedrine prolonged the anesthesia, but greater increase obtained with the higher percentage of adrenaline would

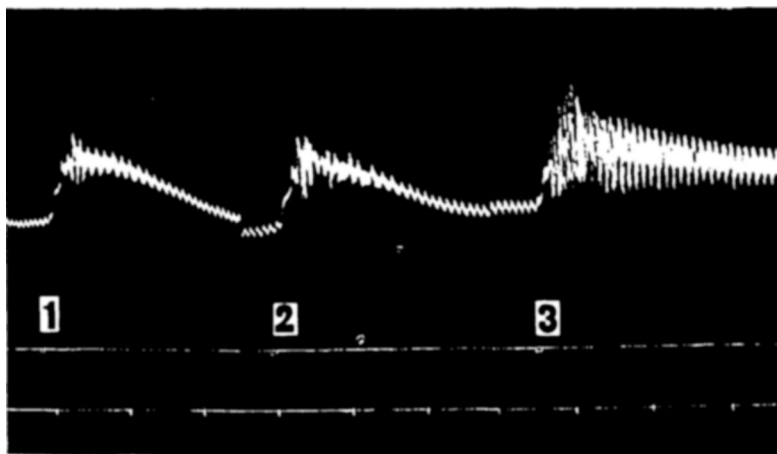


FIG. 1.

A comparison of the actions of benzyl ephedrine and cocaine with adrenaline. Dog ♂. 9.6 kilos. Luminalized 0.15 per kilo.

1. 1 cc. adrenaline, 1 in 100,000, by intravenous injection.
2. Same amount of adrenaline 15 minutes after administering 192 mgm. benzylephedrine (1%) subcutaneously.
3. Same amount of adrenaline 15 minutes after 192 mgm. cocaine (1%) subcutaneously.

¹ Proceedings of the International Physiological Congress, Boston, August 19, 1929.

indicate that vasoconstriction and subsequently delayed absorption is the more important factor.

The known potentiation of the blood pressure action of adrenaline by cocaine with its excessive vasoconstriction is thought to be the factor in the toxicity of this mixture. Comparative experiments upon luminalized dogs with benzylephedrine show that: 1. Benzyl-ephedrine does not potentiate the blood pressor action of adrenaline as is seen with cocaine (see Fig. 1). 2. The pulse did not show such marked changes as are seen with cocaine-adrenaline reactions. 3. After benzyl-ephedrine-adrenaline produced a slower respiration, which effect was greater than that after cocaine.