

ABSTRACTS

Editorial Comment: A fixed style of presentation for this department of ANESTHESIOLOGY has purposely not been defined. It is the wish of the Editorial Board to provide our readers with the type of abstract they desire. Correspondence is invited offering suggestions in regard to the length of abstracts, character of them, and source of them. The Board will appreciate the cooperation of the membership of the Society in submitting abstracts of outstanding articles to be considered for publication.

LOOMIS, T. A.; JESSEPH, J. E., AND BEYER, R. E.: *Prolongation of the Anticoagulant Action of Heparin with Procaine and Butacaine Conjugates*. *J. Pharmacol. & Exper. Therap.* 104: 87-92 (Jan.) 1952.

"One of the principal undesirable factors associated with the use of heparin in the clinic as an anticoagulant drug is its brief duration of action. Intravenous therapeutic doses of heparin produce an effect on the clotting time which is not greater than six hours. Furthermore following intravenous use of this drug, in order to achieve at least four hours of therapeutic effect it is necessary to give doses of the drug which are so great that the immediate effect results in a clotting time which is longer than the desired therapeutic level. In attempt to circumvent these undesirable factors continuous intravenous or intramuscular administration has been used. . . . Heparin is known to be precipitated from aqueous solution by a number of compounds. Among these are protamine . . . and aureomycin . . . both of which also antagonize the anticoagulant action of heparin. It was

found in this laboratory that certain local anesthetic agents would also precipitate heparin from aqueous solution but would not decrease the anticoagulant action of the drug. When such a compound was injected intramuscularly the conjugate would apparently dissociate leading to the absorption of free heparin. From the compounds which have been prepared, the procaine and butacaine conjugates of heparin were selected for the animal study which is the subject of this report.

"The butacaine-heparin preparation produces sufficiently decreased absorption so that 24 hours' duration of anticoagulant action is present [in dogs]. No evidence of butacaine toxicity was observed with the doses used. Procaine-heparin produced prolongation of anticoagulant action but showed evidence of procaine toxicity. Heparin in gelatin-dextrose menstrum showed some increase in duration of action as compared with control aqueous heparin preparations, but neither of these preparations resulted in anticoagulant action for longer than sixteen hours."

A. A.