is not yet entirely clear. That the tourniquet and the epinephrine may be factors has already been indicated. Direct pressure by the mass of the injected material may play a role in view of the lack of tissue distensibility at the base of the digits. Minute quantities of protoplasmic poisons derived from chemical changes in the anesthetic drugs must also be considered, as well as a peculiar local allergic response. Susceptibility to vascular thrombosis may be increased by the slowing of the blood stream attendant on a local inflammatory lesion or perivascular lymphangitis. . . .

"In only a few of the recorded cases did the patient apply for treatment before an obviously irreversible process had occurred. Koschucharoff was able to begin treatment only two hours after the operation, when his attention was called to the blanching, pain and stiffness of the involved finger. He immediately instituted massage, movement and warm soaks, with the result that the circulation was restored and gangrene avoided. Heinicke advised that a pancreatic extract (padutin) be administered in the hope of relieving arterial spasm. After gangrene has become inevitable one should be guided by general surgical principles. It is advisable to wait for a well defined line of demarcation, and the choice between operative and spontaneous amputation can be made on the basis of functional and plastic considerations. . . . Until a fuller understanding of the cause of gangrene following nerve block is achieved, one cannot offer a technic which is entirely safe. On the basis of present knowledge, however, the following precautions seem advisable: Digital nerve block is contraindicated in all cases in which there is preexisting vascular disease. A contraindication likewise exists in the presence of any inflammatory process or lymphatic involvement at the projected site of the block. The use of a tourniquet is not advisable. . . . The use of epinephrine should be avoided in digital nerve block procedures. . . . Small quantities of fluid should be injected directly over the lateral digital nerves rather than a large volume of fluid that will completely encircle the base of the finger and produce blanching of the tissues by local pressure. Where feasible, the lateral injections should be made at different levels in order to avoid too great a distention of tissues at one level. . . . After completion of the operative procedure it is wise to massage the site of the injected fluid in order to promote its prompt absorption and to reduce pressure on the vessels. Makai has advised that all patients who have been subjected to nerve block anesthesia be seen again one hour after the operation in order to determine whether the circulation is adequate. This may permit active therapy before irreversible changes have occurred. Patients should be cautioned about the use of hot soaks in the immediate postoperative period. They should be told to try out the temperature of the solution with the hand which was not operated on so that burns of the anesthetized digits can be avoided." 29 references.

J. C. M. C.

BOROFF, DANIEL A.; COOPER, ANITA, AND BULLOWA, JESSE G. M.: *Inhibition of Sulfapyridine by the Procaine in Chest Fluids After Procaine Anesthesia.* Proc. Soc. Exper. Biol. & Med. **47**: 182, 1941.

Procaine and other derivatives of para-aminobenzoic acid have been shown to exert an inhibitory effect on sulfanilamide. Procaine is widely used as a local anesthetic for pleural aspirations and it is possible to demonstrate its presence in the fluids removed. A study has thus been undertaken to determine the amount of procaine present and the inhibitory effects of these amounts on sulfapyridine.

Pleural fluid was aspirated from 10 tuberculosis patients under procaine anesthesia (1.5 cc. of 2 per cent solution) using a syringe uncontaminated by procaine. The average concentration of procaine was 0.0002 per cent in these fluids. It was then found that such a concentration of procaine is sufficient to inhibit the action of 0.003–0.005 per cent of sulfapyridine.

It is possible that after procaine anesthesia sufficient procaine may be present in the remaining chest fluid at least temporarily to inhibit the action of sulfapyridine and permit bacterial growth.

The effect of urethane was also studied, and it was found to exert no antisulfapyridine action in concentrations as high as 0.05 per cent.

R. D. D.

FELLOWS, E. J.: *The Toxicity and Local Anesthetic Activity of Three New Biphenyl Derivatives.* J. Pharmacol. & Exper. Therap. **72**: 146–151 (June) 1941.

"Numerous modifications of para-aminobenzoic acid have been made since Einhorn demonstrated in 1899 that esters of this compound produced local anesthesia but Einhorn's diethyl-aminoethyl ester of para-aminobenzoic acid (procaine) still is the most extensively used of all the local anesthetic agents. . . . 1. The hydrochlorides of β-diethylaminoethyl-4-amino-4'-biphenyl carboxylate (compound V), di-(β-diethylaminoethyl)-2-2'-diamino-5-5'-biphenylcarboxylate (compound VI) and di-(β-diethylaminoethyl)-5-5'-diaminodiphenate (compound VII) were found to have marked local anesthetic properties. 2. The anesthetic activity of V after intradermal injection is slightly greater than that of the hydrochloride of p-amino-benzoyl-diethylamino ethanol (procaine) but it is also more toxic subcutaneously and produces tissue damage. While the anesthetic potency of VI is somewhat greater it is also more than twice as toxic subcutaneously as procaine. The marked anesthetic activity of VII as compared with procaine is offset by a five fold increase in subcutaneous toxicity. 3. The irritant properties of V and the poor depth of anesthesia produced by VI and VII make the present biphenyl compounds inferior to cocaine as topical anesthetics. 4. Comparison of V with closely related substances discloses that position of the substituent groups on the biphenyl nucleus alters local anesthetic activity. This also was observed in the case of compounds VI and VII." 6 references.

J. C. M. C.

SPINK, W. W., AND BELLIS, C. J.: *Sulfathiazole and Sodium Sulfathiazole in the Treatment of Postoperative Pneumonia.* Surg., Gynec. & Obst. **72**: 989–994 (June) 1941.

"The term 'postoperative pneumonia' is applied to patients having a lobular or lobar type of consolidation, or a purulent bronchitis with a low-grade type of parenchymal inflammation usually accompanied by atelectasis. The pneumococcus is the etiological agent in the majority of cases.

"Twenty-two patients with postoperative pneumonia were treated with sulfathiazole and/or sodium sulfathiazole with satisfactory clinical results.

"Since sulfathiazole causes less nausea and vomiting, and appears to be equally as effective for pneumococcic pulmonary infections as sulfapyridine, it is recommended that sulfathiazole or sodium sulfathiazole should be used in the treatment of postoperative pneumonia." 11 references.

J. C. M. C.

GOYAN, F. M., AND DANIELS, T. C.: *Certain Salts of Atropine, Ephedrine, Epinephrine and Procaine.* J. Am. Pharm. A. **30**: 98–105 (April) 1941.

"It is often desirable to reduce the acidity of solutions of the hydrochlorides, hydrobromides and sulfates of