

MEDICINE

Relief for Polio Symptoms

Local anesthetic injected into nerves along the spinal column improves the condition of clammy, swollen feet and hands of adult patients.

➤ A NEW, SUCCESSFUL treatment for some symptoms of infantile paralysis is announced by three Army medical officers at the Army and Navy General Hospital at Hot Springs, Ark. The officers are Maj. Vincent J. Collins, Lieut. William L. Foster and Capt. William J. West.

The treatment is not a cure for polio. It was devised to relieve the blue, cold, clammy and swollen feet and hands of grownup patients recovering from infantile paralysis. Infantile paralysis, they point out, can no longer be considered unusual in grown persons. They quote one authority as stating that the number of cases in grownups is definitely increasing. At the Hot Springs Army and Navy Hospital, a center for poliomyelitis patients, 131 cases in military personnel were studied.

Muscle spasm and tenderness were also relieved by the new treatment, although it was not devised for this purpose. The finding that it relieved muscle spasm was unexpected, but the relief was so definite and sharp that the Army doctors suggest using the treatment also in the acute stage of the disease. One patient got relief although treatment with hot packs had brought only "mild comfort."

The treatment consists of injections of a local anesthetic solution into nerves along the spinal column. The procedure is known technically as paravertebral sympathetic block. It is not unlike the nerve-cutting operation used in some cases of high blood pressure and which has also been used in some cases of infantile paralysis. But the Army doctors use a chemical, the anesthetic solution, to cut the nerve connections.

The nerves selected are those which control contraction and dilation of the small blood vessels in the arm or foot affected with chilblains and the other symptoms. Apparently these nerves are affected by infantile paralysis, although the amount of paralysis does not run parallel to the effect on the blood vessels. When the nerves controlling the blood vessels are affected, blood circulation is poor and the feet or hands get cold, clammy, blue and swollen.

The change in circulation usually occurs within five or 10 minutes after the chemical is injected. Many patients experienced a "hot foot" and said, "I can't remember when my foot felt so good."

One patient with weakness, tenderness and spasm of the biceps and triceps muscle of his right arm said after the treatment, "My right arm is now better than my left."

The dropsy swelling cleared up slowly in all cases. Three patients, however, said that on the day following the nerve block treatments they could get into a slipper easily.

Patients have continued to be relieved of the poor circulation symptoms for as long as six months after the treatment. If they have a severe relapse, the treatment can be given again.

The treatment could also be given to children, the Army doctors believe, although it would be more difficult because it is necessary to have complete cooperation of the patient to do the block successfully.

Details of the new treatment are reported in the *New England Journal of Medicine* (May 8).

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ENGINEERING

New Auto Engine Uses One-Third Less Gasoline

➤ ONE-THIRD less gasoline is used by a new automobile engine than in present types, it was revealed to the Society of Automotive Engineers by Charles F. Kettering, research chief of General Motors. Its installation in cars will keep step with the development of new fuels.

It is a high-compression engine, with cylinder pressure reaching 1,200 pounds per square inch. Present engines run at only 600 pounds per square inch. Automobiles with the new high-compression engines, operating since last November, are giving 33% to 40% higher economy than ordinary automobile power plants.



FIRE STOP—Gases and fumes from fires are sucked out through ducts, such as the one the operator is adjusting, by an exhaust fan. Sprinklers surround the ducts to cool the air and help block passage of smoke into the stair opening.

But these high-compression engines and fuel developments are in the laboratory stage, he said. How soon they can be incorporated into the automobile will depend upon a large amount of development by both the automobile and the petroleum industries working together toward a common goal. Doubling the compression ratio at one jump cannot be made at once for various reasons. There are 30,000,000 vehicles on the road today which do not require high octane gasoline and must be kept running until they wear out.

The change-over from present engines to very high compression engines can be taken only in steps. As the petroleum industry makes an improvement in fuels the automobile industry can supply a higher compression engine to utilize them.

The new engine is designed according to rather conventional procedures, Mr. Kettering said, except that it is rigid enough to carry the higher loads imposed. It weighs no more per horsepower than present stock engines. Its compression ratio, 12.5 to one, was chosen because tests with a one-cylinder experimental engine showed that most of the gains in efficiency on this cylinder construction could be obtained at this ratio.

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