LETTERS *to the Editor*

Of Maturity in Medical Practice

TO THE EDITOR: It was cheering to read your "Carrots and Sticks" editorial (Are Carrots and Sticks for Donkeys or Doctors? West J Med 120: 237-238, Mar 1974) not only because of the full title but also because it is proper and timely, and I would hope instructive to the younger generation of physicians. However, despite its cogency, in the current worship of change and of the newest and latest both in politics and medicine itself, I have a lingering doubt of its acceptance. It appears that the rapid scientific strides in medicine of the last two to three decades spawned this assumption of the superiority of the new and devaluation of the old—the tried and proven.

I find it amusing to see occasionally in the medical literature frank reappraisals of prevalent ideas and concepts, held up as almost infallible for a period of time, and their dismissal. The old rule —proof of time and experience—still applies. That is why I put only a little stock in "continuing education" which is basically an emphasis on the newest and latest. (This is not to imply that the progress in such subjects as immunology, genetics and virology—just to mention only three new disciplines—is to be deprecated or minimized!)

There are, of course, fashions or patterns of medical outlook—fashions, like those in other aspects of living, which are popular for a time. It is difficult (and often unacceptable) for the younger physician to believe that the newest theories and postulates can be wrong. It would appear appropriate, however, not to hide this old rule from the young; it should be re-emphasized. There is often no urgent need for a headlong rush to try out the newest. It is a sign of maturity to wait a while (not a sign of ignorance!) until a true crystallization of factual knowledge is at hand. This, with particular reference not only to medicine, but also—to return to the purpose of your editorial—to politics.

EDWARD PALMER, MD
Lake Oswego, Oregon

Thermography in Venous Thrombosis

TO THE EDITOR: The recent specialty conference[1] and subsequent editorial[2] in the March 1974 issue of THE WESTERN JOURNAL OF MEDICINE aptly refers to the problem of recurrent venous thrombosis and pulmonary embolism as one of the most difficult clinical problems.

There was a fine review of currently available diagnostic methods. The editorial specifically referred to newer diagnostic and therapeutic approaches. We would like to call attention to one very promising diagnostic modality, namely, the use of thermography.

Cooke's article[3] emphasizes that one of the most constant clinical signs in deep venous thrombosis, present when other signs were either absent or equivocal, was an increase in the heat of the limb and delayed cooling on exposure. Consideration of the chemical activity in the limb accompanying and consequent on a thrombotic episode did suggest the possibility that increased heat could be present but subclinical from an early stage. Thus, a means of measuring this increased heat would possibly present a method by which deep venous thrombosis could be detected early in its development. Thermography offers such a technique. It has also the advantage of being truly non-invasive. Thermography shows the temperature difference on an object in the form of a thermal picture (grey-tone thermogram) using the natural infra-red radiation which varies with the surface temperature of the object. In our study we used the AGA thermovision system 680, which operates in a similar fashion to a closed circuit television in which a camera is coupled to a display unit. The camera unit consists of a single indium antimonide detector cooled with liquid nitrogen to attain a high sensitivity in the spectral band of 2 to 5.6 microns. Encouraged by Cooke's report, we have applied the study to 17 patients with suspected pulmonary embolus. In 15 such patients, all of whom had abnormal perfusion scans and clinical course entirely compatible with the diagnosis of pulmonary embolism,

thermography demonstrated unilateral heating of one thigh or leg. Two patients clinically suspected of having pulmonary embolism had normal lung scans and the clinical follow-up suggested that they had a different explanation for the onset of chest pain. In both patients thermography of the legs was normal. In one of these two patients there was clinical suspicion of deep vein thrombosis and a phlebogram was obtained. This demonstrated varices but no thrombosis.

Five of the 15 patients who had positive thermography and abnormal lung scans had also x-ray contrast venography which did demonstrate unilateral thrombosis in the leg or thigh veins. The thermographic examination is conducted in a room with temperature maintained around 76° and where all sources of draft are excluded, such as open windows and doors. The patient is exposed to the pubis, remains so for 10 minutes before thermographic examination, the legs at the ankles placed 4-6 inches apart and externally rotated. This procedure allows the legs to obtain thermal equilibrium with the surrounding atmosphere. The ankles are elevated slightly so that the calves are not compressed by touching the mattress, allowing an unobstructed venous return. Time taken to examine one patient is about 10 minutes for cooling and about 5 minutes to expose the different pictures.

A personal communication from Dr. Cooke[4] states that he has recently studied 100 postoperative and general medical cases with correlations between thermography and phlebography. There were only 3 discrepancies in the sense there were two false negatives by thermography and one apparent false positive.

In our limited experience, this modality represents a major advance in the diagnosis of patients with venous thrombosis and pulmonary embolism.

JORGE A. FRANCO, MD
BERNADINE KOVALESKI
KLITIA VANAGS
MONIKA SCHRIER
Nuclear Medicine
O'Connor Hospital Medical Center
San Jose, California

REFERENCES

1. Silvergleid AJ: Thromboembolism—Diagnosis and treatment—Stanford University School of Medicine (Specialty Conferences). West J Med 120:219-225, Mar 1974
2. Rapaport SI: Venous thrombosis—Newer diagnostic and therapeutic approaches (Editorial). West J Med 120:239-240, Mar 1974
3. Cooke ED, Pilcher MF: Thermography in diagnosis of venous thrombosis. Br Med J 2:523-526, Jun 1973
4. Cooke ED: Personal communication