

RECENT ADVANCES

TAPES COULD LEAD TO BREAKTHROUGH IN HYPERTENSION TREATMENT

TAPE recordings of heartbeats, respiratory rate, blood pressure and other parameters, obtained by attaching mini recorders to patients' bodies, could lead to a breakthrough in hypertension treatment. This is one of a number of projects being undertaken at the Medical Research Council's Clinical Research Centre. Others include the development of an automated miniature pump which injects small quantities of drugs into the bloodstream to reduce or abolish pain after surgery; and an inexpensive device to measure the peak lung expiratory flow. □□

STEMLESS IMPLANTS RESURFACE WORN-OUT HIP JOINTS

A HIP joint implant from a British firm can offer relief for many sufferers from osteo-arthritis and similar crippling diseases of the hip.

Comprising a chrome-cobalt cap and a polythene cup, the JRI implant is much simpler to fit than the stem prosthesis used for total hip joint replacement and saves much more of the existing bone structure since it is not necessary to remove the top of the bone and to hollow out the shaft. The cap fits

over the end of the femur and the cup is inserted into the acetabulum.

Using this technique, it is possible to perform the operation on adult patients of almost any age. In the past it was necessary to wait at least until the age of fifty had been reached, often causing the patient many years of suffering in the interval. If the patient is young he can in later years be fitted with a conventional stem implant should this be necessary. Although the implant is not intended to supersede the stem prostheses in severe cases, it provides a valuable alternative for many patients and is much less likely to work loose.

The profile of the cap is made greater than a hemisphere to provide adequate articulation. After holes have been drilled in the head

of the femur, the cap is simply cemented over it. Cement fills the holes and provides a firm anchorage. Ribs on the inside of the cap prevent it turning on the femur and their thickness and disposition also impart strength to the casting.

Since the skirt of the cap has the same internal diameter as its equator, excess cement can escape from the skirt and it is unnecessary to leave a hole for this purpose in the top. As a result of firm pressure applied to the cap, the cement is equally distributed throughout the surface of the femoral head, equalising the pressure of weight bearing.

The acetabular cup is in the form of a 4 mm thick shell which is fixed to the bone with a 1 mm layer of cement. The whole assembly can



be deformed with the fingers, thus corresponding much more closely to the coefficient of elasticity of cancellous bone than has been possible before, say the makers. □□

NEW DEVICE EASES GLAUCOMA TESTS BY FPS

Medical Tribune Report

NEW YORK — A new - 600 electronic tonometer with a digital readout screen could make it easier for family physicians and internists to include glaucoma testing in their routine physical examinations.

Called "Digiton," the device makes an audible beep upon touching the cornea, and displays intraocular pressure digitally in Schiotz units. It is battery-powered, weighs five ounces, and can store up to two readings at once in a memory unit.

The manufacturer, Ical, Inc., of Sunnyvale, Calif., says the tonometer can make "accurate, repeatable readings after minimal training." The display system "allows the physician to concentrate on proper placement of the device without having to read a cumbersome, complicated scale at the same time," said Ical President Charles Munnerlyn, Ph.D. "Many family physicians have skipped such tests because available tonometers have been too big, awkward, or expensive."

Last year the National Academy for the Prevention of Blindness launched a nationwide "Glaucoma Alert," urging that tonometry be included as a routine part of the physical examination. The American Academy of Family Physicians supports the effort, "but does not endorse any particular device."

"Glaucoma screening on the FP level is needed," says Dr. John Ritch, an ophthalmologist and glaucoma specialist at Mount Sinai Hospital here. "It's important to

recognize glaucoma early, but the average guy in practice might be afraid of tonometry because of the possibility of corneal abrasions."



Family physicians can more safely test for glaucoma using this battery-operated tonometer which makes an audible beep upon touching the cornea. The digital readout screen shows intraocular pressure.

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MENIERE'S DISEASE

COMPARISON of Furosemide and Glycerol Tests for Meniere's Disease: With special Reference to the Bilateral Lesion. Furosemide has been found to be feasible for detecting endolymphatic hydrops in Meniere's disease, and glycerol testing can also reveal hydrops, but apparently only in patients with fluctuating hearing loss. T. Futaki, M. Kitahara and M. Morimoto (Kyoto Univ.) compared the effectiveness of these two dehydration tests in confirming endolymphatic hydrops in 48 patients with typical Meniere's disease, who were hospitalized for epidural shunt surgery. Both tests were performed on 51 ears, including 3 cases of bilateral involvement. All patients reported

incapacitating, frequent, long-lasting attacks of vertigo, perceptive deafness and tinnitus. Pure-tone audiometry and caloric testing were done in conjunction with intravenous injection of 20 mg furosemide. Glycerol tests were done by having the patients ingest 1.3 gm glycerol per kg with an equal amount of physiologic saline perorally.

Urine volumes were significantly greater with furosemide. Tinnitus was reduced after furosemide injection in 18 of 45 patients. Glycerol ingestion relieved tinnitus in 20 of 44 patients. Improvement in hearing of over 5 dB was found in 34 % of affected ears after furosemide and in 45 % of ears after glycerol. The effect of furosemide on the caloric response was beneficial in 73 % of diseased ears, with an average response increase of 13.9 %. The rate for the glycerol test was 45%. Side effects from furosemide were nil, but several patients had headache, nausea or increased tinnitus in conjunction with glycerol testing.

The furosemide test is more sensitive than the glycerol test for detecting endolymphatic hydrops and has fewer side effects. The use of both tests, involving natriuretic and osmotic dehydration, can make the diagnosis more firm and precise in both unilateral and bilateral cases. Double testing of patients with severe Meniere's disease will easily lead to selection of treatment.

(Again, comparison of these two methods is of interest. It would appear that the furosemide test has its primary effect on the vestibular labyrinth according to this study. Whereas the glycerol test seems primary to effect the cochlear labyrinth. The 73% effect on the caloric response is interesting and suggests the possibility that this test drug might have therapeutic implications - M.M.P.) □□