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Montreal doctor determines sex of unborn children

An obstetrician working at Montreal's Royal Victoria Hospital (RVH) (one of McGill University's teaching hospitals), who was responsible for bringing ultrasonography – high-frequency sound waves – to the RVH, recently came up with an unexpected application for ultrasound: he is able, in many instances, to detect the sex of the foetus after seven months of pregnancy. Although other doctors have found this possible occasionally, Dr. Julian Stocker has data which suggest it may be feasible in upwards of 65 per cent of the patients screened during the last ten weeks of their pregnancy.

Simple technique

According to Dr. Stocker, the principle is simple and is identical to that used in locating submarines with sonar. A rotor is put in an "applicator", which contains a water-filled plastic bag at the surface. The bag is placed against the abdomen, with an acoustic-coupling media at the contact surface. The rotor, which revolves at a rate of 15 times a second, has two quartz crystals attached to it; behind the rotor is a mirror. When an electrical impulse is applied to one of the quartz crystals it emits an ultrasonic beam with a frequency of approximately 1.5 million cycles a second (the human hearing range is about 18,000 cycles, a second). This beam reflects off the mirror, passes through the water bag into the patient, bounces off the different tissues back to the mirror and the second quartz crystal receives it. This "echo" is then reconverted to an electrical impulse and is amplified through a cathode-ray tube. The beams, which follow in quick succession, scan an approximate area of 35 square inches and a live image of the tissue appears as thousands of dots on a screen.

The advantage of this particular technique lies in the applicator; most applicators have a very small head with only one beam. With the larger, water-bag method, by simply moving the applicator slightly on the abdomen, different cross-sectional planes of the tissues are rapidly revealed. Whereas X-rays are not recommended during pregnancy because of potential radiation damage, ultrasounding is a completely innocuous technique providing information which cannot show up in X-rays.

Accidental discovery

Dr. Stocker's discovery that he could determine the sex of a foetus was more by accident than by intention. Late last year he screened a patient during her fortieth week of pregnancy and obtained images that revealed a clear case of hydroceles in the developed infant. (Hydroceles is a condition where excess fluid accumulates within the scrotum.) The male genitalia showed up quite clearly on the screen. Since then Dr. Stocker has kept track of 104 cases in which he considered sex determination was possible. He determined female foetus by a process of elimination. Of the 104 patients, 73 have so far delivered; of 38 foetuses which Dr. Stocker had called males, 38 were in fact males – a 100 percent success rate. With females, three out of 35 of his predictions were incorrect – 8 percent error.

Dr. Stocker does not consider his discovery of great medical importance although he feels that foreknowledge of foetal sex might give doctors a slight advantage in a case where early induction is necessary. If the foetus is female it is likely to have fewer breathing problems than a male when born prematurely; this information could be a factor in a decision to induce delivery, although there is a better way of assessing this risk prior to delivery.

Diagnostic importance emphasized

Although Dr. Stocker intends to write a paper on his findings, he emphasizes that ultrasonic screening merely to determine an infant's sex will probably

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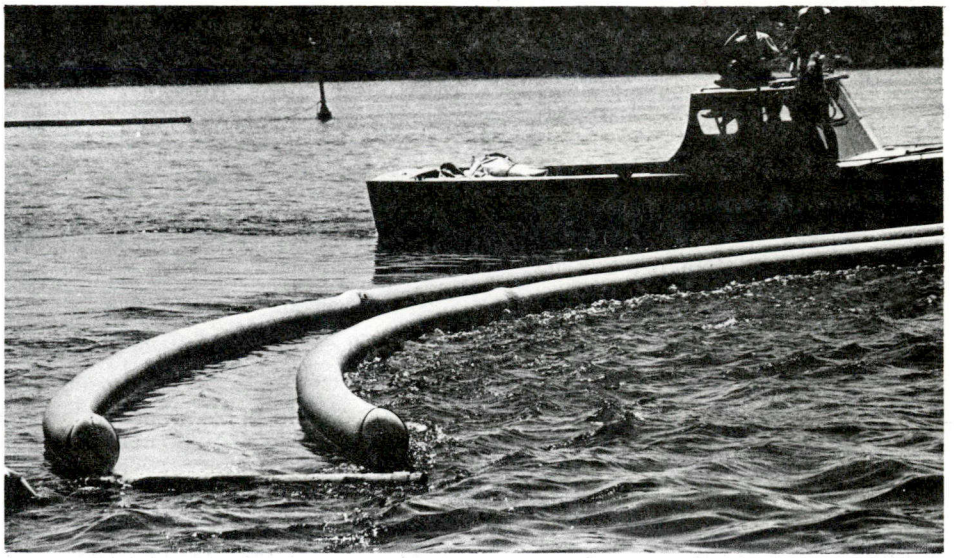

Oil-spill boom passes tests, now in production

The PACE (Petroleum Association for Conservation of the Canadian Environment) Oil Boom is a recently-patented device that contains spilled oil from fast-moving or calm-water surfaces (Canada Weekly, *August 28, 1975*). *The new boom, which is now being manufactured by the Steltner Development and Manufacturing company of 5 Sparkes Street, St. Catherines, Ontario L2N 3E1, differs from other methods because it harnesses the natural forces of the water and uses them to perform the work of containing the spilled oil.*

It can be used either in an angular or U-shaped fashion, according to requirements. Shown here is the angular application on the St. Clair River. Spilled oil flows under the leading float and surfaces in the "ponded" area between the two floats. It is then carried by a current to the downstream end of the boom for recovery.

PACE, which is a national non-profit, voluntary association of Canadian oil companies formed to protect the Canadian environment, operates under federal charter from its head office at 130 Albert Street, Ottawa K1P 5G4.