Device Development

Pinpointing the precise site and extent of abnormalities causing blockages or reduced flow of blood in arteries and veins is vital to successful surgery.

Non-invasive ultrasound diagnosis where sound patterns are returned from internal body tissues and organs is an important modern tool for certain conditions – normal and abnormal – ranging from aging of a developing fetus to assessing the status of blood vessels.

A compact, hand-held, ultrasound "micro doppler probe" developed by a Canadian firm is being used for a number of diagnostic procedures today. The device, produced by Bach-Simpson Limited, of London, Ontario, was originally designed for assessing the status of artery bypasses of the superficial temporal and middle cerebral arteries of the brain. Small and flexible as it must be for this delicate procedure, the tool is also useful for detecting "technical defects" following surgery on blocked carotid arteries – carotid endarterectomy – in the neck.

In gastrointestinal surgery, where it is important to know the most distal or distant portion of the superior messenteric artery with a compromised blood supply, the micro probe, because of its small "crystal" area, does not require the use of ultrasound surgical gel. In addition, its small diameter ensures that the signal being obtained is from the actual blood vessel route under observation.

Micro "doppler" probe for detecting abnormal blood flow in arteries and veins, made by Bach-Simpson Limited.

The same company, which manufactures a number of ultrasound instruments, produces a bi-directional doppler blood velocity meter for measuring both the direction and velocity of blood flow in the major arteries and veins using accepted non-invasive ultrasound techniques to determine the location of an obstruction in an artery. It is further useful in diagnosing deep vein blockages.

A fetal heart detector manufactured by this firm will detect fetal life, single or multiple pregnancies as well as status of the fetus as early as the eighth week of pregnancy.

All probes produced by the firm are designed for gas sterilization.