A GENTLER FORM OF SURGERY

COBLATION – OR "COLD" ABLATION – IS AN ADVANCED TECHNOLOGY USED in soft tissue surgery. What makes this medical innovation appealing to both doctors and patients alike is that patients endure considerably less pain and discomfort after surgery and have a faster recovery time.

In the ear, nose and throat (ENT) realm, the technology is used most often for the removal of tonsils and adenoids in both adults and children. Tonsils & adenoids removal is usually recommended nowadays for persistent snoring and poor quality sleep. It is also used for tongue, laryngeal (voice box), nasal and base of skull surgery, of which conventional electro surgery with monopolar diathermy was mostly used in the past.

Conventional electro surgery uses surface temperatures in excess of 400 deg C. This causes rapid tissue heating and a consequent cutting effect along the tissues. Besides the cutting effect, there is significant collateral tissue damage with charring. This, in turn, increases post-operation pain and discomfort for the patient. The charring may also predispose the patient to post-operation infection.

Coblation is different from conventional electro surgery. It is a non-heat-driven process which uses radio frequency (RF) energy – a form of electrical energy. The way RF energy is absorbed by the body has made it one of today's most popular surgical technologies, and the primary reason why it is replacing lasers and conventional electro surgery in everything from prostate cancer surgery to cardiovascular procedures.

Unlike other forms of electromagnetic frequencies that cause a "surface effect" wherein the skin and tissues feel the heat application, RF energy can penetrate the body and be absorbed in deeply situated body organs without any collateral heat injury, making it more precise, potentially speeding up patient recovery.

During the Coblation process, the RF current does not pass directly through tissue. Rather, it goes through a conductive medium, such as saline solution, creating a plasma layer. Hence, tissue heating is minimal. Most of the heat is formed in the plasma layer, by the ionization process - when the electrodes of the Coblator hand-piece cause electrolysis of the saline solution producing ions. These ions are able to break down intercellular bonds and in effect, melt tissue at a temperature of only 60 deg C. In addition, the presence of continuous saline irrigation & suction out of the operative site helps reduce the amount of heat delivered to the surrounding structures and hence reduces the amount of post-operative pain experienced by the patient.

While there are clear advantages for the patient, surgeons take some time to get used to using Coblation; the surgeon has to learn to use the surgical hand-piece in a light stroking motion. Once this is learnt, the advantages are significant for the patient. The proven, patented Coblation process has been used successfully by surgeons in ENT and other areas of medicine. ■

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