

Advances In Treating Intractable Pain

Ed. Note: The following is a press release from the American Association of Neurological Surgeons (AANS).

March 22, 2005

Recordings on stone tablets from ancient civilizations provide evidence that ancient civilizations treated pain with pressure, heat, water, and sun. Some early cultures believed that pain was associated with evil, magic, and demons, and so pain relief was the responsibility of sorcerers, priests, and priestesses.

The Greeks and Romans were the first to recognize the role of the brain in producing the perception of pain. But it was not until the Middle Ages, and well into the Renaissance in the 1400s to 1500s, that evidence in support of theories connecting the brain to sensations began to accumulate. Leonardo da Vinci came to believe that the brain was the central organ responsible for sensation, and he developed the idea that the spinal cord transmits sensations to the brain.

Hippocrates, who lived sometime between 460 B.C and 377 B.C., left historical records of pain relief treatments, including the use of powder made from the bark and leaves of the willow tree to help heal headaches, pains, and fever. This remedy eventually led to the production of modern-day aspirin.

It is estimated that 30 to 40 million Americans a year suffer from pain that does not respond to aspirin or ibuprofen. Chronic pain is longstanding pain that persists beyond the usual recovery period or occurs along with a chronic health condition. It may be intermittent or continuous. It may affect people to the point that they cannot work, eat properly, participate in physical activity, or even enjoy life. Estimated costs for treating chronic pain, both directly and indirectly, are close to \$50 billion a year.

Neurosurgeons treat chronic pain with state-of-the-art medical technology. According to the American Association of Neurological Surgeons (AANS), the most commonly treated conditions that cause pain include atypical facial pain, failed spinal surgery, phantom limb pain, stroke, and headache.

"One type of facial pain called trigeminal neuralgia can cause such excruciating pain for sufferers that they might feel as if they are being stabbed in the face or hit by an electrical shock," said Jaimie M. Henderson, MD, a pain expert and AANS spokesperson. "The pain can last for seconds, disappear, and then return without any warning," added Henderson.

If medications have proven ineffective in treating trigeminal neuralgia, there are several surgical procedures which may help control the pain. Microvascular decompression involves microsurgical exposure of the trigeminal nerve root, identification of a blood vessel that might be compressing the nerve, and gentle displacement of it away from the point of compression. "Decompression" may reduce sensitivity and allow the trigeminal nerve to recover and return to a more normal, pain free condition.

Radiofrequency rhizotomy treats trigeminal neuralgia through the use of electrocoagulation (heat). It is also used to treat any area of the spine - cervical, thoracic, or lumbar.

Glycerol rhizotomy utilizes glycerol injected through a needle into the area where the nerve divides into three main branches. The goal is to selectively damage the nerve in order to interfere with the transmission of the pain signals to the brain.

Stereotactic radiation is a method in which computer-guided radiation is aimed precisely at the appropriate target. Over a period of time and as a result of radiation exposure, the slow formation of a lesion in the nerve interrupts transmission of pain signals to the brain.

Motor cortex stimulation is another option, but is often considered a last resort because it can be very difficult to predict which patients may benefit. While about 50 percent of patients experience pain relief, it tends to be short-term.

Deep brain stimulation (DBS) is a surgical technique which involves the placement of a fine electrode (wire) into specific parts of the brain. Most commonly, DBS is used to treat Parkinson's disease, but it can also be utilized for the relief of pain. DBS works by delivering a continuous electrical pulse to regions of the brain involved in the processing of pain signals. The exact mechanism by which this creates pain relief is yet to be fully understood. The advantages of this technique are that it is reversible, non-destructive, and can be modified by adjustment of the stimulator settings after implantation. DBS helps up to 80 percent of patients in whom it is used. The rate of reduction in pain varies from patient to patient, but on average, pain is cut in half.

Spinal cord stimulation is a pain relief technique that delivers a low-voltage electrical current continuously to the spinal cord to block the sensation of pain. It works by stopping painful impulses from reaching the brain. It may be effective in treating unresponsive pain from prior back surgeries, chronic sciatica, nerve damage, and peripheral vascular disease. Researchers have reported that about 60 percent of people receiving spinal cord stimulation have pain reduction or relief when surveyed one to two years after having the procedure.

As with any surgical procedure, there are risks involved. A patients' age, medical condition, and symptoms must be taken into consideration before any of the above-mentioned procedures can be considered. To find out more information about neurological disorders or to locate a qualified neurosurgeon in your area, visit: <http://www.neurosurgerytoday.org/>.

Founded in 1931 as the Harvey Cushing Society, the American Association of Neurological Surgeons (AANS) is a scientific and educational association with more than 6,800 members worldwide. The AANS is dedicated to advancing the specialty of neurological surgery in order to

provide the highest quality of neurosurgical care to the public. All active members of the AANS are certified by the American Board of Neurological Surgery, the Royal College of Physicians and Surgeons (Neurosurgery) of Canada or the Mexican Council of Neurological Surgery, AC. Neurological surgery is the medical specialty concerned with the prevention, diagnosis, treatment and rehabilitation of disorders that affect the entire nervous system, including the spinal column, spinal cord, brain, and peripheral nerves.

[Home](#) | [About Us](#) | [Email](#) | [Donate](#) | [Get Involved](#) | [Privacy Policy](#)

Disclaimer: This publication is intended for informational purposes only and may or may not apply to you. The editor and publisher are not doctors and are not engaged in providing medical advice. Always consult a qualified professional for medical care. This publication does not endorse any doctors, procedures, or products.

© 2003-2020 C&S Patient Education Foundation