DEEP BRAIN STIMULATION FOR PAIN RELIEF WITH SPECIAL REFERENCE TO MIDBRAIN PERIAQUEDUCTAL GRAY MATTER.

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Sun 1:30
G. B. II

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Aim of Investigation: Deep brain stimulation (DBS) has been advocated in recent years for relief of intractable pain. Critical views against DBS, however, have been discussed in regard to whether DBS has the future profit for pain relief or not. The clinical effects of electrical stimulation of the human midbrain periaqueductal gray matter were investigated together with measurement of CSF endorphins.

Methods: Fourteen patients with intractable pain had electrical stimulation of midbrain periaqueductal gray matter using Todd-Wells stereotactic frame. The stimulated area was located at the rostral end of the peri-aqueductal gray matter, 14 mm posterior to the midpoint of the AC-PC line, 5 mm below the AC-PC line and 3-5 mm lateral from the center of the aqueduct. The immunoreactive beta-endorphin (IBE) in the third ventricular fluid was measured before and after the above stimulation.

Results: In spite of the fact that the elevation of IBE was noticed in all of these patients, none of the patients noticed pain relief by periaqueductal gray stimulation.

Conclusions: Endorphins are not only related to pain mechanism, but also related to a wide variety of biological functions. The authors present a critical view to DBS for pain relief in regard to endorphins as reported by other investigators.

DEEP BRAIN STIMULATION IN THE TREATMENT OF CHRONIC "BENIGN" PAIN.

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Sun 1:45
G. B. II

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Aim of Investigation: Deep brain stimulation was employed in the treatment of deafferentation and neurogenic pain syndromes. This study examined the target points which gave the most long-lasting analgesic response.

Methods: Seventeen patients were treated with multipolar cerebral electrodes, 16 receiving permanent implants. Double implants were performed in 4 patients (one bilateral and the other 3 unilateral). These last 3 cases suffered from typical deafferentation pain (2 thalamic syndromes and 1 facial anesthesia dolorosa), and the targets chosen for implant were those selected electively for so-called "cancer" pain (septal and periaqueductal gray areas).

Results: A 6 month to 3 year follow-up showed a decreased effectiveness of 25% in 13 patients, while the pain relief was unaltered in 3 cases with double unilateral electrodes.

Conclusions: The results obtained in simultaneous stimulation of these two targets pose serious doubts on the validity of the distinction of cancer, neurogenic and deafferentation pain. The Aa. propose a change from the rigid classification of pain in distinct categories, into a broader, more unified concept of pain syndromes arising from different etiologies.