The Role of Infrared Thermal Imaging (ITI) in the Diagnosis and Management of Headaches With Special Reference to Trigeminovascular System
A Meta-Analysis

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The term migraine has been used as a wastebasket for traumatic, hereditary vascular, and neurovascular dysfunction in the distribution of trigeminovascular system (TVS). Stricker (1876) demonstrated vasodilation at cut nerve endings. Bruce (1910) discovered neuroinflammation in injured sensory nerves. Any topical or referred neurovascular stimulation of TVS can result in headache with dynamic neurovascular fluctuation. The CBF and infrared thermal imaging (ITI) measurements are sensitive but reflect temporally fluctuating results in migraine headaches. The meta-analysis of migraine headaches shows no ITI diagnostic value. In contrast, the cervicogenic vascular headaches show consistent thermal changes in occipital nerves, and in C-2 and C-4 nerve roots. The cryogenic, radiofrequency and rhizotomy procedures invariably result in damaged nerve endings with secondary hyperthermia and more serve headaches post-op. A rare form of headache in late stage complex regional pain syndrome (CRPS) accompanied by sympathetic failure, bilateral Horner's syndrome, neuroinflammation, and increased intra-cranial pressure in five patients will be presented.

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