THE RESULTS OF INJECTING HOT WATER INTO THE GASSERIAN GANGLION FOR THE RELIEF OF TIC DOULOUREUX

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TO PINPOINT precisely the clinical material on which this paper is based I wish to say that I am speaking only of those patients suffering from tic douloureux. Or, as Harris has labeled this disorder, “paroxysmal trigeminal neuralgia (trigeminal tic).” This is extremely important so as not to confuse the results with those in cases in which attempts have been made to cure the so-called “atypical” pains of face, neck and shoulder—these, in my opinion, are variants of migraine, or postherpetic neuralgia. Too often they are referred to as “atypical tic douloureux,” which causes further confusion.

The 185 patients with tic douloureux treated by myself with the method described previously cover the period between September 4, 1953 and April 1, 1958. The results are not intended to be “end results” since the disorder is a life-long problem, even though permanent relief from the sharp shooting pains has always been sought for and actually achieved in a very high percentage. The technique has already been described and will not be repeated at this time. It is obvious that many important improvements have been made in light of continuing experience with this method but these can be appreciated only by those who are genuinely interested and willing to give considerable time and study to its many intricate details. Very important are the development of the sense of touch and mental image anatomical orientation, through constant practice.

The safety of the method is demonstrated by the fact that there have been no deaths or near deaths. Two patients had what appeared to be an aseptic meningitis—probably by activation of an herpetic virus—since one had a widespread herpes on the side of the face opposite the injection. Another had a minor subarachnoid hemorrhage with mental confusion and a stiff neck, from puncture of a temporal lobe vein. She recovered completely without being dangerously ill.

Relief from the paroxysmal tic pains has been complete in all but 7 patients. Five of these were among the first 30 patients, and they were relieved by operation. It is probable that at least 3 of these, if not all of them, could now be relieved by injection. There has been no operation for relief of the

pain in the last 155 patients treated. There was also one failure in a patient
who had had a subtemporal partial root section by another surgeon. This is
apt to happen because the anatomy of the ganglion has been distorted by
tearing of the dura mater and arachnoid.

Three had extension of pain into unanesthetized regions, left purposely
unanesthetized, many months later, which was stopped by producing com-
plete destruction of the ganglion cells.

Paralysis of the motor nerve to the muscles of mastication occurs in most
but not all cases. It regenerates completely in 3 to 4 months' time. In bi-
lateral tic this is important since it is perfectly safe to inject the second side
after the motor nerve has regenerated, so at no time is chewing interfered
with.

Corneal complications can occur in any procedure that anesthetizes the
eye or interferes with adequate lacrimation. There has occurred suspected
or slight temporary irritation of the cornea; however, this has not resulted in
visual loss. In 2 patients there has been slightly diminished vision caused by
clouding of the cornea, which has been permanent. One patient had a severe
corneal ulcer for some months. On closing her lids with sutures for 4 months,
the cornea healed completely with restoration of normal vision. Occasion-
ally, tearing is markedly diminished by temporary paralysis of the greater
superficial petrosal nerve. Since this nerve always remains intact, regenera-
tion is the rule. As far as I can determine, I have not seen a single patient
with complete permanent paralysis of lacrimation. There has been no com-
plete loss of vision. If the cornea is even suspected of being irritated after the
injection of the ganglion I immediately suture the outer one-half or two-
thirds of the palpebral fissure by denuding the edges of the lid. It is left closed
until I am certain that the cornea and conjunctiva are out of danger and the
tears are adequate from regeneration of the greater superficial petrosal nerve.
The lids are then opened slowly by clipping the epithelial bridge between
them.

Paresis of the extra-ocular nerves (usually of the 4th, but occasionally of
the 6th) has occurred in 8 instances. It is so slight as to be hardly discernible
and has always recovered completely in less than 5 months. Actual paralysis
has not occurred. Temporarily covering the eye with an opaque lens or tape
over the lens will give complete comfort until binocular vision returns.

Herpes occurred in probably more than 50 per cent of all patients. Usu-
ally the lesion is on the labial mucosa at the corner of the mouth. This lesion
is apt to be single and appears as a cratered ulcer, 12 × 8 mm. in size. It ap-
pears 3 days after the injection and disappears in 3 weeks. One large area of
herpes appeared on the cheek opposite the side injected. Two others had
lesions 3 to 5 mm. in size on the upper lip. No corneal or supra-orbital herpes
has occurred but can be expected to appear in isolated cases. Tiny, almost
microscopic, herpetic lesions occur frequently at widely scattered localities
on the lower face.

As in all operations producing anesthetic areas in the skin, there have