TRIGEMINAL TROPHIC SYNDROME
(A case report with review of literature)

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Summary

A rare case of trigeminal trophic syndrome in an adult male is reported and the literature on the same is reviewed.

Trophic lesions in the trigeminal field, described as a complication of pathological processes involving the first and second neurones, are surprisingly uncommon after surgical division of the trigeminal nerve for relief of trigeminal neuralgia. Still uncommon are trophic lesions on the forehead, scalp, and malar regions.

Herewith, we are reporting a rare case of trigeminal trophic syndrome in a 35 years old male with trophic changes on the left side of the scalp and forehead following left intracranial trigeminal sensory rhizotomy.

Case Report

A 35 years old male clerk was admitted on 6—12—'77 to the New Civil Hospital, Ahmedabad, for treatment of nephrotic syndrome of 8 years' duration. The following day, patient was referred to the Skin O. P. D., for the lesions on the scalp and forehead of 2 years' duration.

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A detailed history revealed that patient had dull pain in the left second upper molar tooth in 1972. As the intensity of pain increased he went to the Dental Hospital where a "decayed tooth" was extracted. The dull ache, however persisted and kept increasing in intensity. He later began to get intractable and lightening pain with numbness which started in the left supra-orbital region. Although patient later developed pain all over the face it was intolerable on the left side, where it was lancinating leading to inability to swallow or chew. Paroxysms of pain were precipitated, particularly, during shaving or opening the mouth. Within two months the frequency of pain increased from 2 to 3 times a day to 20 to 30 times a day. Patient consulted a neurosurgeon who diagnosed trigeminal neuralgia and advised tab. tegretol ; to start with one tablet which was stepped up to three times a day. Tab. Epsolin was also given t. i. d. After three months of treatment patient had not improved and he was admitted to the hospital under another neurosurgeon on 16—4—'75. At the time of admission, routine examination of blood, urine, stool, x-ray chest & skull (A. P., lateral, base & Town's view) were all normal.

On 23—4—'75, patient had left intracranial trigeminal sensory rhizotomy.

Pain completely disappeared immediately after operation. On the third post-operative day, patient developed ulceration on the left forehead and scalp in the distribution of the ophthalmic branch of the trigeminal nerve. A dermatologist advised neosporin ointment and patient was discharged ten days after the operation.

When the patient attended the Skin O. P. D. of Civil Hospital, Ahmedabad, he complained of tingling and numbness of the skin in the distribution of all three divisions of the left trigeminal nerve. Examination revealed weakness and wasting of the temporalis muscle, weakness of the masseter muscle, complete loss of superficial sensations, in the distribution of left trigeminal nerve, and absent left corneal reflex. Taste sensation and autonomic functions were normal. Rest of the C. N. S. examination was normal. Clinical examination of the eye and fundoscopy did not reveal any abnormality. Investigations at this time showed Haemoglobin-8.5 gms%, E. S. R. - 50 m.m./hour, trace of albumin in urine, blood urea was 30mgms%, serum cholesterol-696 mgms%, serum creatinine 1.1 mgm%, V. D. R. L. -non reactive and x-ray skull (A. P., lateral, and Town's view) — normal. Total & differential count and stool examination were normal.

Examination of skin showed a well defined plaque, 1.5 x 1.5 cms. with a hyperpigmented border, ulceration and crusting, a smaller plaque, 1 cm. x 1 cm, just lateral to the above and also an alopaecic plaque on the left side of the scalp, 2 cms. x 2 cms., with ulceration and crusting.

(Fig. No. 1 & 2).

Excepting for a mild hypertension (B. P. - 140/100 m.m. of Hg.), systemic examination was normal.

Discussion

The most common cause of trigeminal denervation is surgical transection

Fig. 1 Showing trophic changes in the ophthalmic branch of left trigeminal nerve

of the sensory root done as a therapeutic measure for trigeminal neuralgia[1,2]. Trophic lesions commonly beginning in the ala nasi and in rare instances on the forehead scalp, malar regions following minor trauma to the anaesthetic skin within the trigeminal area have been reported[3,4,5]. The interval between operation and the appearance of trophic lesions may vary from few weeks to several years.

Fig. 2 Showing trophic changes in the ophthalmic branch of left trigeminal nerve

The portion of the face which is supplied by the trigemenus may be denervated by various procedures viz, sectioning of its peripheral branches, the gasserian ganglion, the posterior root or more selectively cutting the descending spinal tract in the medulla. Opinions vary regarding the observation that trophic changes did not occur if sensory root was completely destroyed[6]. In a review of 107 cases, Becker[7] was able to find only 5 cases in which cutaneous complications had developed after trigeminal neurectomy. He himself reported the case of a 47 years old female who developed erythematous, vesicular eruptions after surgery. In another report on 587 cases of trigeminal neuralgia treated by surgery, trophic changes were not mentioned[2,8]. Harris[9,12] in 1940 studied a series of 1433 cases of trigeminal neuralgia and stated that trophic lesions may occur "Very occasionally". In 1940, Karnosh and Scherb reported three cases with trophic lesions in trigeminal area[6]. All these cases were studied by competent dermatologists who found no explanation for the appearance of the lesions except a neuropathic one. Among these three cases one patient had developed trophic lesions as a result of occlusion of the posterior inferior cerebellar artery. The authors stated that trophic changes are uncommon on the face because it is instinctively better protected from trauma than other parts of the body which become anesthetic.

Surgical division of the trigeminal nerve can give rise to a number of complications (post-operative). The commonest is herpes simplex occuring in the anaesthetic area and some surgeons look for this as the hallmark of a successfull operation. Neuropathic keratitis is the second commonest complication of trigeminal sensory rhizotomy. Dott reported the value of cervical sympathectomy, both in prevention and in the treatment of neuropathic keratitis[1,2]. Vasomotor disturbances have been reported only after injection of alcohol into the gasserian ganglion or after electro-coagulation.

Spillone and Wells stated, "the rarest complication of which we are aware of in surgical denervation of the skin of the face is the ulceration en arc". In a study of 16 cases with trigeminal neuropathy, they found one case with ulceration of the right ala nasi which developed 12 years after sensory root section. McKenzie found two cases with ulcerations of the nose among 78 patients surgically treated for trigeminal neuralgia. In a third case the lesions appeared ofter the removal of an acoustic neuroma. Loveman[10] reported a case with ulcers on the forehead and alopecia. Jaeger[11] reported three cases in 1950. Howel[2] reported three cases with ulcerations of the ala nasi in 1955.

Trophic lesions of the face as a sequel to the interruption in the trigeminal sensory pathway within the brain-stem have been reported by Karnos and Scherb[6] (1940) and Savitsky and Elpern[13] (1948). The earliest report was that of Wallenberg himself in 1901, who had first described the "Posterior inferior cerebellar artery syndrome". His patient, a 55 years old female had trophic lesions of the ala nasi and right side of the nose. Rosenberg and Solovay[14] reported two cases in which trophic lesions occured as a complication of post encephalitic parkinsonism.

Neuropathic changes in trigeminal areas follow diseases, injury, or surgery which destroys fibres conveying pain and temperature sensations[3,5]. Trauma to the analgesic face is probably the most frequent precipitating cause for the occurence of the ulcers.

The differential diagnosis in this condition are basal cell epithelioma, post radiation ulcers and dermatitis artefacta.

The diagnosis is obvious when history is adequate[3],[4].

Prevention of trauma and proctective dressings of existing lesions are the mainstay in the management of the disease. Even binding the limbs may be necessary[4]. Secondary infection may be treated with antibiotics. Prosthesis has been found helpful as a protective measure[3].

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