



Surgical Therapy of Nummular Headache

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Abstract

Introduction: The surgical approach is frequently described as definitive therapy of migraine headache.

Methods: In this work, we report our current surgical approach for surgically treating nummular migraine.

Results: We have operated on 4 patients. Three months after surgery, the symptomatology had disappeared in all the patients treated.

Conclusion: In our experience, the described surgical approach has proven to be simple, decisive and free from complications.

Keywords: Nummular headache treatment; Nummular headache surgery; Migraine therapy

Introduction

Primary Headaches (PH) represent a set of very common and incapacitating pathologies. Among these, Nummular Headaches (NH) constitute a very well defined and, although rare, peculiar subgroup. The most recent theories related to the etiopathogenesis of PH refer to the inflammation of circumscribed extracranial nerves [1-9]. In these cases, one of the described more successful therapies is surgical neurolysis of such nerves [10-20]. In the case of NH, a shared pathogenetic hypothesis has not yet been arrived at. NH was first described by Pareja et al. [21], in 2002. The name comes from the Latin Numus (coin) to indicate the small size of the affected area. In fact, classically, the patient presents a precise symptomatology: He/she reports a variable number of attacks (usually, greater than 5 per month), of variable duration and onset. The characteristic symptomatology consists in the outbreak of pain, always localized in a very narrow and defined region of the scalp. The affected area has a diameter of a few centimeters. From here, the pain can remain concentrated in the area itself or, as is more often the case, radiate to other regions of the scalp. The painful symptoms can vary from a few hours to a few days and be accompanied or not by photophobia, nausea, or other symptoms.

The surgical approach is the most frequently recommended as definitive therapy [22]. In this paper, we describe our current surgical approach for surgically treating NH.

Operative Technique

First of all, the patient must be visited by a board-certified neurologist in order to obtain diagnostic confirmation and exclude other types of headaches. The Helsinki Declaration was closely followed. Each patient approved and signed an informed consent. Our surgical approach is very simple and linear. First the patient accurately indicates the limits of the affected area, allowing us to draw on the scalp the affected skin lozenge (Figure 1). After infiltration of local anesthetic, we proceed to remove the entire thickness (reaching the underlying pericranium) of the small region of the scalp that acts as a trigger point (Figure 2): The maximum width of the lozenge is 2 cm, the length 3 cm. The procedure is completed by subgaleal undermining of the margins, hemostasis and continuous non-absorbable cutaneous suture (Figure 3).

Results

To date, we have operated on 4 patients (3 females 1 male, average age: 41 years). Patients were asked to fill a headache diary and complete a migraine questionnaire assessing parameters before surgery, after three months and one year after surgery. Data regarding age, sex, age at onset, migraines per month (in days), associated symptoms, severity (on a scale from 1 to 10), in ability

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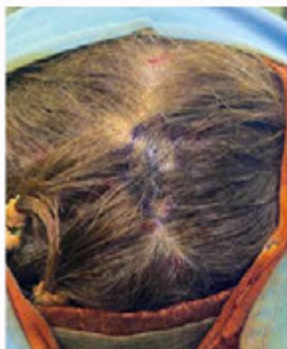


Figure 1: Preoperative markings: Lozenge circumscribing the affected area.



Figure 2: Complete excision to reach the pericranium.



Figure 3: Cutaneous suture after subgaleal undermining.

to work per month (in days), health status, history of neck trauma, and family history were collected. Three months after surgery, the symptomatology had disappeared in 50% (2) of the patients treated. Resolution of symptoms remained at 1 year of follow-up. We did not register any kind of complications. In one patient, we recorded the onset, after about 6 months, of another trigger site (temporal area). In another patient, we observed a recurrence about 10 cm laterally from the site of the primary lesion.

Conclusion

Although rare, nummular migraine is a well-described and formalized form of primary headache [23-34]. Etiopathogenesis is uncertain, although correlations with Langerhans cell histiocytosis [35], arachnoid cysts [36], localized calcific hematoma of the scalp [37] and craniosynostosis [38] have been reported. Some medical therapies have been described and evaluated over the years: TENS [39], beta blockers [40], onabotulinum toxin A [41]. However, the therapy of choice remains surgical [42]. In our experience, the

described surgical approach has proven to be simple, decisive and free from complications. A very important limitation of our study is the narrowness of the case studies. Anyhow, given our experience [43-63], what we would like to recommend is to warn patients minutely of the possibility of recurrence or onset of other trigger points. The scalp is characterized by well-defined biomechanical properties [64-75]. Although it is not usually possible to remove full-thickness lozenges with a diameter greater than four centimeters, this allows in most cases to surgically treat circumscribed areas of nummular migraine, without any problem of direct closure.

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