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SUNCT SYNDROME ASSOCIATED WITH PITUITARY TUMOR

Case report

Pedro A.S. Rocha Filho[1], Antonio Cezar R. Galvão[3], Manoel J. Teixeira[4], Getulio D. Rabello[3], Ida Fortini[2], Marcelo Calderaro[2], Dalva Carrocini[2]

ABSTRACT - For twelve years, the subject of this report, a 38-year-old man, presented a clinical condition compatible with the SUNCT (short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing) syndrome. He presented a stabbing and intense daily pain located in the left pre-auricular and temporal regions. Each of these intense pain attacks lasted around one minute and presented a f requency of two to eight times per day. The pain was associated with ipsilateral lacrimation, conjunctival injection and rhinorrhea. MRI revealed a pituitary tumor with little suprasellar extent. The subject's serial assays of prolactin, GH, TSH and ACTH were within normal levels. Following transsphenoidal hypophysectomy, with complete removal of the tumor, the subject no more presented pain. The pathological diagnosis was non-secreting adenoma. Fourteen months after the surgery, he remains symptom-free.

KEY WORDS: SUNCT, pituitary tumor, surgery, ultra- shorting headaches.

Síndrome SUNCT associada a tumor de hipófise: relato de caso

RESUMO - O paciente relatado neste artigo apresentou uma condição clínica compatível com síndrome SUNCT (cefaléia de curta duração, unilateral, neuralgiforme com hiperemia conjuntival e lacrimejamento). Ele referia dor diária, intensa, em facada, localizada na região pré-auricular e temporal esquerdas. Cada ataque de dor permanecia por cerca de um minuto, com freqüência de duas a oito vezes por dia. A dor se acompanhava de lacrimejamento ipsolateral, congestão conjuntival e rinorréia. A RM mostrou um tumor de hipófise com pouca extensão suprasselar. Dosagens de prolactina, GH, TSH e ACTH estavam em níveis normais. Foi então submetido a hipofisectomia transesfenoidal com remoção completa do tumor após o que a dor cessou completamente. O diagnóstico anátomo-patológico foi adenoma não secretor. Quatorze meses após a cirurgia, o paciente permanecia livre de dor.

PALAVRAS-CHAVE: SUNCT, tumor de hipófise, cirurgia, cefaléia de curta duração.

The SUNCT syndrome (short-lasting unilateral neuralgiformheadache attacks with conjunctival injection and tearing) is an uncommon headache characterized by moderate to severe pain. Usualy, the locations with the most severe pain are the ocular/periocular regions and the frontal region. The latter is the main location for irradiation[1]. The mean duration of the attack lasts around 40 seconds, with a frequency ranging from two episodes per day up to 10 to 30 episodes, predominantly during the daytime[2]. Accompanying the unilateral pain, there are ipsilateral autonomic symptoms, such as lacrimation and conjunctival injection, and possibly nasal congestion andrhinorrhea[1,3]. A proeminent characteristic of this syndrome is the poor response to pharmacological treatments[3,4]. There have been reports of improvement upon the use of amitriptyline, carbamazepine, gabapentin, prednisone, topiramate[5], lamotrigine[6], nifedipine and sumatriptan[4]. Anesthetic blockades do not work very well, although there have been reports of improvement following the local opioid blockade of the superior cervical ganglion[7]. There have also been reports of surgical procedures that worked effectively[5] while others reports have indicated a lack of response to such procedures[8].

This syndrome has been listed in the second edition of The International Classification of Headache Disorders together with trigeminal autonomic cepha-

Headache Clinic, Department of Neurology, Hospital das Clínicas, University of Sao Paulo, Sao Paulo, Brazil: [1]Doutorando em Neurologia; [2]Médico-Assistente; [3]Professor Assistente-Doutor; [4]Professor Livre-Docente.

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Dr. Antonio Cezar R. Galvão - Rua Apinages 761/111 - 05017-000 São Paulo SP - Brasil. E-mail: acrgalv@uol.com.br

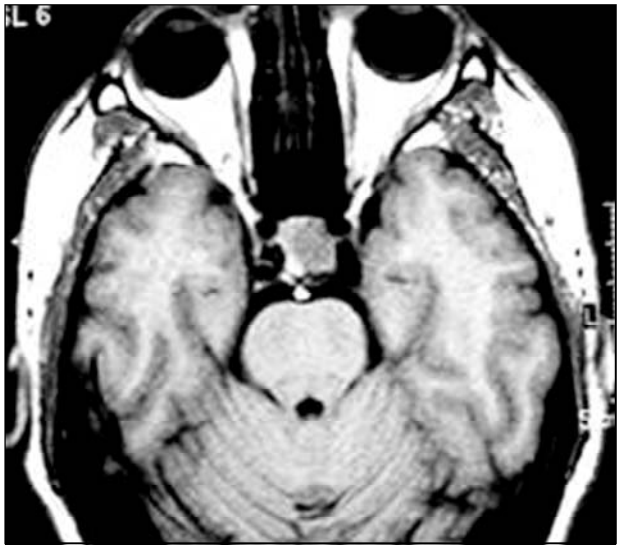

Fig 1. MRI showing a pituitary tumor.

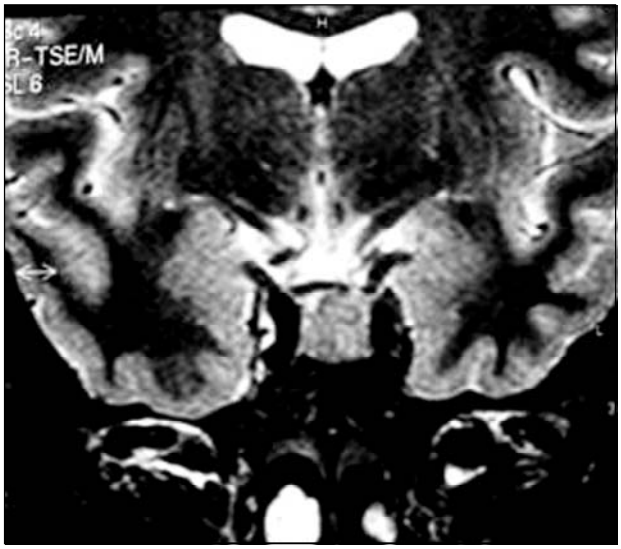

Fig 2. MRI pituitary adenoma do not invade cavernous sinus.

lalgias[9]. This group of headaches presents a trigeminal autonomic reflex that consists of a brainstem connection between the trigeminal nerve (responsible for the pain) and the VIIth cranial nerve (responsible for the autonomics symptoms)[10]. According to this new classification system, which was published by the IHS in 2004[9], the SUNCT syndrome is defined according to the following characteristics: A. At least 20 attacks fulfilling criteria B-D; B. Attacks of unilateral orbital, supraorbital or temporal stabbing or pulsating pain lasting between 5 and 240 seconds; C. Pain is accompanied by ipsilateral conjunctival injection and lacrimation; D. Attacks occur with a frequency from 3 to 200 per day; E. Not attributed to another disorder.

This paper presents the description of a case of SUNCT syndrome associated with pituitary adenoma.

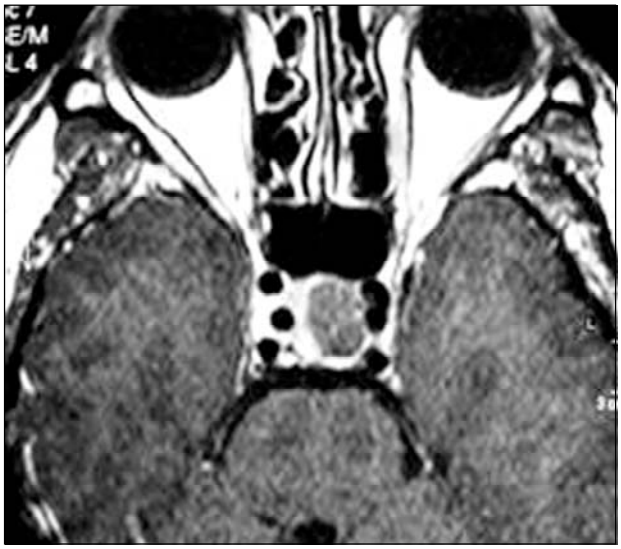

Fig 3. MRI showing pituitary tumor without expansion out of sellar space.

CASE

Over a twelve-year period the patient, a 38-year-old male, presented daily attacks of severe, short-duration stabbing pain located in the pre-auricular and left temporal regions. These attacks lasted for about one minute each, taking place between two and eight times per day. At the same time, he presented, along with the pain, ipsilateral conjunctival injection, lacrimation and rhinorrhea. During this period he was diagnosed elsewhere as having trigeminal neuralgia. The patient was treated for a few years with carbamazepine (even 600 mg/day). He presented intolerance to carbamazepine and no clinical improvement was reported. In the end he was only taking 50 mg of this drug per day, due to sleepiness that evolved as a side effect of bigger dosages. In addition, the use of amitriptyline and methysergide was prescribed to this patient, without clinical response. He also sought homeopathic and acupuncture treatments with no results. At the beginning of the year 2002, he underwent a cranial MRI. This procedure revealed a pituitary tumor with little suprasellar extent (Fig 1, 2 and 3). Serial assays of prolactin, GH, TSH and ACTH were within normal levels (ACTH= 42,3 pg/ mL; GH= 3,10 ng/ mL; prolactin= 16 ng/ mL; hTSH= 0,747μUI/ mL; T3= 0,82 ng/ mL; T4= 7,99 μg/ mL).

He was submitted to transsphenoidal hypophysectomy with complete removal of the tumor, which was a pituitary adenoma (the pathological diagnosis was non-secreting adenoma). He took prednisone for a few weeks following the surgical procedure as usual in this kind of surgery. Following the surgery, he evolved toward a complete disappearance of pain. Over the past 14 months his condition has remained stable and he has not taken any prescription medicines or presented any pain during this period.

DISCUSSION

Chronic paroxysmal hemicrania, cluster headache, trigeminal neuralgia of the first nerve division, primary stabbing headache[5] and cluster-tic syndrome are among the main differential diagnoses for the SUNCT syndrome. Regardless of the fact that the majority of cases of SUNCT syndrome are primary, secondary cases cannot be ruled out.

Table shows the conditions to which the SUNCT syndrome may be associated with. In two cases the arteriovenous malformation was located at the cerebellopontine angle[11,12]. This location suggested irritative compression of the facial, trigeminal or greater petrous superficial nerves. In another case, cavernous angioma of the brainstem[13] may have triggered irritation of the trigeminal nerve and greater superficial petrous nerve, which would explain the symptoms. The leiomyosarcoma case occurred in a patient who had undergone kidney transplantion. This patient was using immunosuppressive therapy, and because of the location of the tumor in the cavernous sinus, it is possible that the trigeminal nerve may have been involved[14].

Before the SUNCT syndrome was first described and defined by Sjaastad et al.[15], the case of a patient with a pituitary tumor and bromocriptine-induced headaches compatible with the syndrome had been reported[16]. Later on two more cases were described[17]. These two cases presented pain induced by dopamine agonists. In the first of these, the prolactinoma had invaded the cavernous sinus that was on the same side as the pain. The resulting pain may have been due to trigeminal activation. There was a significant decrease in the frequency of the pain following radiotherapy. The second of these two cases did not present any invasion of the cavernous sinus.

Table. Diseases associated with SUNCT syndrome.

Arteriovenous malformation[11,13]
Brainstem infarction[25]
Corneal lesion[26]
Craniosynostosis[27]
HIV infection[28]
Leiomyosarcoma[14]
Prolactinomas[16,19]
Pituitary tumor (this case)
Vasculitis[29]

Recently, another two trigeminal autonomic headache cases linked with pituitary microadenomas have been reported[18]. The first of these reported cases was clinically compatible with the SUNCT syndrome. The second case was compatible with hemicrania continua. In both cases there was an increase in pain due to the use of dopamine agonists. In the first case, which was compatible with the SUNCT syndrome, the patient's pain was eliminated following the surgical removal of the adenoma. It is important to note that there was an exacerbation of the pain at the time when the tumor recurred. Thus these facts suggest a causal relationship. Additionally, there has been a description of headaches caused by prolactinoma, that were compatible with SUNCT[19]. There was improvement in the condition with the use of bromocriptine and cabergoline, and the headache was resolved within three months.

The pathophysiology of the headache associated with pituitary tumors is not completely clear. Dural stretch[20,21], invasion of the cavernous sinus[17] and local pressure effects[22] have been suggested as mechanisms. It has been found that differences in tumor size were not apparent between those who presented headaches and those who did not[23]. Also, there were no clear correlations between the pituitary volume and headache score[24]. The extent of cavernous sinus invasion was not associated with the presence/extent of headache[24]. One explanation given for why headaches get worse after the use of dopamine agonists is that the growth of the tumor is transitory[18] or that a neurohumoral mechanism is possible[19].

In the case of the 38-year-old male patient in the present study, the pituitary adenoma did not invade the cavernous sinus. The pain can therefore not be explained by a mechanism of invasion of the cavernous sinus. A non-functioning pituitary adenoma can stay asymptomatic for many years since it will not compress the neighboring structures. It is possible that this patient had already the tumor during the previous twelve years when he presented the attacks of headache without others signs or symptoms. There was complete remission of the pain following surgery. The patient was treated for a few weeks after the surgery with prednisone. The prednisone could have some positive effect in patients with SUNCT syndrome[5], but the patient had already no pain when this drug were prescribed. This patient had used prednisone for a few weeks and, despite of its interruption, the pain did not relapse. The patient has presented no headache symptoms for 14

months to date. These facts suggest a causal relationship between the adenoma and the headache in this patient. It is important to emphasize the value of ruling out secondary SUNCT by appropriately obtaining the patient's history and placing emphasis on pituitary-related symptoms, neuroimaging investigations and also hormonal assaying.

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