Short-lasting headaches in children

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Short-lasting headaches have been studied infrequently in children and it is not known if the main categories of primary headaches of this type in adults are applicable to children. We report our experience with a group of 20 children with a brief headache. Two patients had a secondary headache. One patient had a headache with some clinical characteristics of paroxysmal hemicrania. The remaining 17 had a very brief headache. They were in many aspects comparable to others from previous studies on idiopathic stabbing headache in children: no associated symptoms, no other associated headache, frequent family history of migraine. They differed, however, in the younger age of the patients and the more frequent extratrigeminal location of the pain. Extratrigeminal ice-pick pain may be a variant of idiopathic stabbing headache, more prevalent in young children. □*Children, idiopathic stabbing headache, short-lasting headache*

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Introduction

Short-lasting headaches are infrequent in children but this clinical problem generates fear that serious intracranial disease may be the substrate for the pain.

The literature on this subject is scarce (1–5) and it is not known if the primary short-lasting headaches found in the adult population have similar patterns in children or if some or most of the differential diagnostics used in adults (6–8) are valid when evaluating a child with this complaint.

We report our experience with 20 children with this type of headache.

Patients and methods

Twenty patients were selected from a group of 458 headache patients using only one criterion: having recurrent (more than one) episodes of a brief headache (from a few seconds to a few minutes).

We tried to determine from the patient's or parents' description the duration, frequency, total number of pain episodes, location, intensity of the headache, associated autonomic signs, precipitant factors if any could be identified, coexistence of other type of headache, outcome, family history of headache and neurological examination. We also reviewed the results of imaging and EEG studies performed in these patients.

Results

Two patients had a secondary headache. They had a brief occipital headache usually related to physical activity with changes in head position. They were otherwise asymptomatic but their neurological examination was not normal: both patients had pyramidal signs in the lower limbs. One patient was a 4-year-old boy with a short neck, hyperreflexia and extensor plantar responses and a severe Chiari type 1 malformation. The other was a 5-year-old boy with Down's syndrome and a C1-C2 subluxation with spinal cord compression.

Eighteen patients may have had a primary headache: they had recurrent headaches with normal neurological examination, normal computed tomography (CT) or magnetic resonance imaging (MRI) and, after a follow-up period, no evidence of a secondary aetiology. The mean age of the patients in this group was 6.15 years (range 2.41–14.25 years).

Table 1 Clinical characteristics of 17 patients with idiopathic stabbing headache-like symptoms

Gender	
Male	8
Female	9
Pain intensity	
Intense	16
Moderate	1
Pain location	
Occipital	9
Frontal	6
Temporal	1
Parietal	1
Duration of pain	
Less than 1 s	3
More than 1 s, <5 s	12
Very brief but cannot specify	2
Maximum frequency of episodes	
At least 1/day	5
At least 1/week	8
At least 1/month	4
Outcome	
Well	10
Still having rare episodes of pain	7

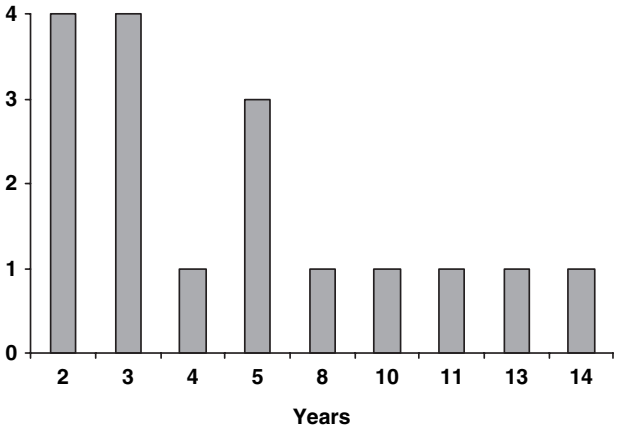

Figure 1 Number of patients and age in years (at the onset of headache) in the 17 idiopathic stabbing headache-like group.

Many patients in this primary headache group had a positive family history of primary headache: migraine in nine (one of these patient's relatives had migraine and idiopathic stabbing headache) and tension-type headache in one.

One patient had a longer lasting (5–30 min), intense, unilateral, frontal and retroorbital pain. He had no ipsilateral parasympathetic autonomic symptoms during the painful episodes. Indomethacin was not tried due to the infrequent occurrence of pain. The patient's MRI revealed signs of sphenoidal sinusitis.

The remaining 17 patients reported a very brief headache (usually a few seconds; for some the headache was described as instantaneous). Some of the findings in this group of patients are summarized in Table 1. Patients' ages are given in Fig. 1.

We often could not obtain an accurate description of the character of the pain, which is understandable considering the age of the patients.

Three children were too young (≤3 years) to give a reliable description of uni- vs. bilaterality (there was just a description of occipital pain) and two patients reported occipital pain, not lateralized. The remainder all had unilateral pain. Pain shifted from side to side in two and from occipital to frontal in another two.

No focal autonomic signs (tearing, conjunctival injection, unilateral rhinorroea or unilateral nasal congestion, Horner's syndrome) were reported. Two patients became slightly pale during the pain paroxysms. No trigger factors could be identified. We could not obtain a reliable previous history of significant head or neck trauma.

Abnormality of posture of the head, painful limitation of neck movements and pain triggered by pressure in the neck or occipital region were not found in the patients with occipital headache. Neurologic examination was normal.

The outcome, after a period of 6 months to 5 years, was favourable in most patients. A trial of prophylactic non-steroidal anti-inflammatory drugs was not felt to be justified.

No relevant findings were obtained from the imaging studies, although we would stress the fact that three patients in this group had radiological evidence of sphenoidal or ethmoidal sinusitis without having fever or other symptoms and signs of acute upper respiratory infection during the headache periods.

In the idiopathic headache group EEG was performed in five patients; it was normal in three and showed occipital and frontal paroxysmal activity in one patient each.

Discussion

Raieli et al. (5), in a study of headaches in young children, reported two patients with a brief occipital headache related to physical activity and to changes in posture that was secondary to a Chiari type 1 malformation.

One of our patients had a Chiari type 1 malformation with a clear radiological picture of conflict

of space at the craneo-cervical junction and another had C1-C2 subluxation and MRI also showed evident cervical cord compression at this level. We believe that in these two patients the headache was related to their anomaly and that their clinical history suggests that young patients with brief headaches should be carefully evaluated to exclude these diagnoses.

More difficult to evaluate was the relationship of sphenoidal/ethmoidal sinusitis with headache. Some patients with sinusitis report brief and intense exacerbations of pain although they also have a dull moderate frontal or retroocular pain. Sinusitis is almost always associated with purulent nasal discharge and nasal congestion, although fever is not present in many cases. The International Headache Society (IHS) does not recognize chronic sinusitis as a cause of headache (9) and there are multiple arguments supporting this view (10). Radiological signs of sinusitis are a common finding in asymptomatic people in whom a CT scan is requested for reasons other than headache (11).

The three patients in our series with radiological signs of sinusitis had not the usual symptoms of acute respiratory infection in a temporal relationship with their headache. Moreover, follow-up and, if considered appropriate, treatment of their sinusitis did not support the view that their pain might be related to sinus disease.

The relationship between EEG abnormalities and primary headaches is poorly understood. Raieli et al. (5) and Kramer et al. (12) have reported a high frequency of EEG abnormalities, including focal spikes, in children with idiopathic stabbing headache (ISH).

Panayiotopoulos (13) drew attention to the frequent occurrence of a postictal migraine-like headache in the syndrome of benign childhood epilepsy with occipital paroxysms. The classic, late-onset Gastaut type usually manifests with a coloured visual hallucination that may or may not be followed by a hemiclonic seizure and headache. Most reports describing this headache agree that it lasts for $\geq$30 min. The early-onset benign occipital epilepsy, Panayiotopoulos type, usually manifests with nocturnal hemiclonic seizures preceded by vomiting and ictal eye deviation. Headache is not a clearly reported feature but the young age of the patients may obscure this, as the peak incidence of the epileptic syndrome is around 4 years. We believe, therefore, that the relationship between EEG findings and children's ISH is unclear.

In our patients EEG was performed in only five patients; it was normal in three and showed occipital and frontal paroxysmal activity in one patient each.

The IHS recommends evaluation with diagnostic imaging and other tests for patients with ISH or trigeminal autonomic cephalalgias that have atypical symptoms or abnormal findings on neurological examination. The limited number of studies on this subject in children and the more complex clinical problems in the evaluation of young children who have less verbal ability to report their symptoms would, in our view, mandate that a higher level of clinical suspicion for secondary headaches be maintained.

Few studies have addressed the subject of primary short-lasting headaches in children. Short-lasting headaches seem to be less frequent in children compared with adults, perhaps following a trend seen with primary headaches to express more frequently after adolescence. We selected for this study only 20 patients (4.36%) from a group of 458 referred because of headaches.

Short-lived headaches in the IHS classification include primary ISH and some of the trigeminal autonomic cephalalgias (TACs): paroxysmal hemicrania (PH) and sudden unilateral neuralgiform headache with conjuntival injection and tearing (SUNCT).

We have found in the literature only five reports of PH in children (14). Secondary cases of PH have been described (most with lesions in the cavernous sinus or in the suprasellar area) (15). One of our patients had a clinical picture with some characteristics of episodic PH. This 9-year-old boy had episodes of intense retro-orbital pain lasting for 5–30 min. His pain did not seem to have any identifiable precipitant or trigger points. The episodes of pain did not aggregate in clusters and never happened during sleep. He had a tendency to lie down during his painful crisis. He reported no nausea and autonomic signs were absent. Ophthalmological examination, including measurement of intraocular pressure, was normal. MRI showed signs of sphenoidal sinusitis but there was no relationship between pain episodes and respiratory signs and symptoms and the pain remained strictly episodic, so we are again not certain if it could be attributed to sphenoid sinus pathology. On the whole, this patient's headache could not be classified as probable PH, however, and we believe it cannot be classified using the IHS criteria.

SUNCT has been reported only three times in children (16) and is very rare in adults. Some patients had a secondary SUNCT (with a brainstem cavernous haemangioma, brainstem infarction,

cerebellopontine arteriovenous malformation, basilar impression or pituitary tumours).

We could find only three studies of ISH in children. The studies of Fusco et al. (4), Soriani et al. (2) and Raieli et al. (3) reported, respectively, 23, 83 and 30 paediatric patients with ISH. Their main conclusions are that this headache is less frequent in children, the number of episodes of pain is less and the headache is usually not associated with other types of primary headache (contrary to what is found in adults, where cluster headache and migraine patients frequently have associated stabbing pains). Many patients had a family history of primary headaches (mostly migraine). Similar to the reports in adults, males and females were roughly equally represented. The mean ages of the patients were, respectively, 9, 7 and 10 years. The site of pain was extratrigeminal (occipital) in 9% in the study by Fusco et al., in 23% of the Soriani patients and in 16.6% of Raieli's patients. The reported duration of pain in some of the cases, however, is longer than the current thinking on ISH. Fusco describes their patients' headache as lasting <3 min in 11 cases and >3 min and <15 min in 12.

One study by Raieli et al. (5) on headache in 105 children <6 years old reported ISH in 13 (12.4%). The authors underline that the headache was the cause for referral of these children. The 13 patients had a mean age of 4.5 years and three had extratrigeminal pain. According to the authors, ISH was four times more frequent in young children compared with older children and adolescents and this is also our impression.

In a review article, Rothner (1) considered ice pick headache 'extremely rare in children'. He also mentions occipital neuralgia as a jabbing occipital pain, sometimes associated with 'cervical tenderness, limitation of head movement, head tilt'.

Seventeen patients in our series had a very brief headache (briefer than is described for the TACs) with no focal autonomic signs. They had no associated signs or symptoms apart from (in two cases) slight pallor probably due to a vagal reaction. Nausea or vomiting, phono- and photophobia were not reported. Occipital or parietal pain was reported in 11. There was no apparent change in the level of consciousness or abnormal eye movements during the headache and the patients old enough to give an account of their complaints did not report any visual symptoms. The number of episodes of head pain was low. Only a few had a greater number of recurrences. The majority of the patients had no other type of headache concomitant with their paroxysmal headache. They had no history of head or neck trauma and no relationship of pain to head movement. There was no tenderness in the neck. No precipitant factors were apparent in these children, i.e. there was no relationship with bending forward or with physical effort. Family history was positive for idiopathic stabbing headache in one patient, for migraine in nine and for tension-type headache in one. This group of patients is younger (mean age 6.15 years) than was reported in the mentioned studies on ISH. We concur with Raieli in his observation that ISH seems to be less infrequent in younger compared with older children and adolescents (5). Moreover, 10 out of 17 children in our series had extratrigeminal pain, making problematic their classification as ISH.

Martins et al. (17) have described seven patients with 'ice pick extratrigeminal status'. They stressed that these patients' pain was similar in character to and was most likely a variant of ISH but differed in location (parieto-occipital), temporal profile (a cluster of symptoms followed by remission) and lacked association with migraine. We believe that some of our patients have a headache that resembles this description, although with a much more benign course.

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