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Episodic Syndromes That May Be Associated With Migraine - Two Clinically Useful Markers

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Abstract

Objective: To document episodic syndromes that may be related to migraine (International Classification of headache disorders edition 3-beta versions, code 1.6) and to suggest two clinically useful markers for diagnosing episodic syndromes.

Methods: Children and adolescents aged 3 years to 15 years presenting with recurrent head pain of definite / probable migraine origin were interviewed along with their parents or accompanying family member over a period of 2 years (October 2013 to September 2015). Present and past histories of symptoms suggestive of episodic syndromes were documented. ICHD-3 beta diagnostic criteria applied in all cases.

Results: 176 fulfilled the ICHD-3 beta diagnostic criteria for episodic syndromes. Abdominal migraine in 98, brief episodes of vertigo / imbalance suggestive of benign paroxysmal vertigo were reported by 62, Cyclical vomiting in 14 and Benign paroxysmal torticollis in 2.124 (70%) were getting these symptoms when exposed to common migraine triggers in this region. Either a single trigger or combination of triggers precipitated these manifestations. 144 (88%) first or second degree siblings were suffering from migraine (1.1, 1.2, 1.5 or brief migraines).

Conclusion: Episodic syndromes are not rare in daily clinical practice. Documenting Common migraine triggers and family history of migraine will make episodic syndrome diagnosis easier in children and adolescents.

Keywords: Cyclical vomiting; Benign paroxysmal vertigo; Abdominal migraine; Common triggers; Family history

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Introduction

Episodic syndromes are considered to be precursors to (ICHD-2) or associated with migraine head pain. ICHD-3 beta [1] have included 3 clinical entities as episodic syndromes, previously known as periodic syndromes - Recurrent gastrointestinal disturbances like Cyclical vomiting and Abdominal migraine, Benign paroxysmal vertigo and Torticollis. Infantile colic, Alternating hemiplegia of childhood and Vestibular migraine are episodic syndromes given in the appendix section of ICHD-3 beta as they are not sufficiently validated by scientific studies. No significant studies have been done in India or other Asian countries regarding these syndromes which were previously known as Migraine equivalents. Migraine related recurrent gastrointestinal disturbances are manifested by repeated attacks of abdominal pain and / or discomfort, nausea and or vomiting, occurring infrequently, chronically or at predictable intervals. Cyclical vomiting is a symptom complex that occurs in infants and children and less commonly in adolescents and adults. It is a self-limiting condition with periods of complete normality between episodes. The clinical features of this syndrome resemble those found in association with migraine and multiple threads of research over the past years have suggested that Cyclical vomiting is a condition related to migraine. Abdominal migraine is described as an idiopathic recurrent disorder seen mainly in children and characterized by episodic midline umbilical pain manifesting in attacks lasting 2 h - 72 h with normality between episodes. The pain is of moderate to severe intensity and associated with vasomotor symptoms, nausea and vomiting. Benign paroxysmal vertigo is characterized by recurrent brief episodes of vertigo / imbalance occurring without warning and resolving spontaneously in otherwise healthy children. Often associated with nystagmus or vomiting and unilateral throbbing headaches may occur in some attacks. In Benign paroxysmal torticollis, infants and small children are brought by parents with the complaints of recurrent episodes of head tilt to one side which remit spontaneously.

Method

This 2 year study prospectively analyzed all the children and adolescents aged 5 years to 15 years with recurrent headaches attending two headache clinics in the coastal district of Southern India. Present and past symptoms of Episodic syndromes, precipitating triggers and family history of migraine were documented. Diagnoses were based on ICHD-3 Beta diagnostic criteria with additional questions on migraine triggers and family history.

Results

176 children and adolescents presented with recurrent headaches of migraine origin with current or past history of Episodic syndromes. Episodic Syndrome was the first manifestation in life in 52 children and adolescents.

Summary of episodic syndromes

1. Abdominal migraine - 98
2. Benign paroxysmal vertigo - 62
3. Cyclical vomiting - 14
4. BPT - 2

Common migraine triggers in this region of India

1) Sun exposure

2) Travelling by bus

3) Hunger

4) Sleep disturbances

5) Strenuous physical exercises

6) Tension anxiety situations

During the study period of two years, several children other than the 98 diagnosed as Abdominal migraine, were complaining of short duration abdominal pain of less than two hours duration with normal gastrointestinal examination and they were given a diagnosis of ?Probable abdominal migraine [2]. Unlike migraine with and without auras, there is no probable Episodic syndrome or probable abdominal migraine in ICHD-3 Beta. 27 girls aged 12 years to 15 years with migraine head pain were getting severe lower abdominal pain, recurrent vomiting and vertigo during the first one or two days of their menstrual cycles [3].

Abdominal migraine

Out of 98 children with Abdominal migraine, 69 had central or peri umbilical pain, 29 with generalized pain. All became motionless (activity affected) during the pain attacks. 78 had nausea or vomiting, 21 nausea and pallor as reported by their mothers or grandparents. Anorexia was reported whenever the duration of episodic attacks were prolonged from two hours to one day. The diagnoses as told to them by different practitioners were appendicitis, gastritis, worm infestation, tension anxiety, vitamin deficiency, iron deficiency, food intolerance, functional. No case was diagnosed as Abdominal migraine in the past. Appendicectomy is done for recurrent abdominal pain in 4 of them but continued to get pain after a short duration of 6 weeks. 64 (62%) reported triggers like certain food ingestion, hunger, travelling, physical exertion, sleep disturbances and stressful situations at home or school. 79 (80%) parents were migraineurs with similar triggers.

Benign paroxysmal vertigo

Present study population consisted of 62 children and adolescents. Age of onset varied from 3 years to 14 years. All cases presented with duration of seconds to 3 h. Majority reported attacks lasting less than 5 minutes. Most of them were getting probable migraine attacks independently (Duration less than 2 h). No patient was examined during a vertiginous attack. Examination in between was normal so also EEG and Audiometry in some cases. Vomiting and fearfulness were the common diagnostic associated symptoms observed. As no child was examined during an episode, nystagmus as a sign was not able to be documented. It was difficult to document ataxia as most of them used to cry and lie down during episodes. 51 (80%) had family history of migraine and 46 (74%) reported (reported by parents / siblings) one of the common migraine triggers as precipitating factor. All of them were advised to avoid common migraine triggers in this region of India and were put on prophylactic agents like Flunarizine, Cyproheptadine, etc. 19 presented with complete remission at the last follow up. 7 reported considerable improvement and the rest were either not satisfied with the treatment or got significant relief after first consultation and lost to follow up. Collateral symptoms other than headaches accompanying vertigo attacks were pallor, nausea, vomiting, phonophobia, photophobia and blurring of vision.

Cyclical vomiting

5 reported recurrent vomiting after every episode of fever or upper respiratory tract infection (infection as a trigger). Each bout lasting one hour to 2 days. 5 reported long distance travelling as the trigger. 4 children had episodes triggered by combination of triggers like sunlight, examination, funerals and long distance travelling. All of them had one or both parents suffering from migraine. No complications like dehydration, hematemesis and electrolyte imbalance were reported. In one child, the episode lasted one week. All diagnoses were confirmed only after examination by Pediatrician, Surgeon and Gastroenterologist.

Benign paroxysmal torticollis

This study could document only two children with recurrent episodes of head tilt to either side starting just before their first birthday and both had migraine mothers. The associated diagnostic symptoms reported by the mothers were pallor or vomiting or irritability. Ataxia and malaise were not reported. This entity is the least seen among the Episodic syndromes, as most of them disappear by 3rd year of life often evolving into BPV or Migraine with aura.

Discussion

To the best of my knowledge, this is the first study in India and other Asian countries to document episodic syndromes based on ICHD 3 diagnostic criteria. This study, specially designed to document these syndromes, suggest two classical clinical markers for easy diagnosis - Common migraine triggers precipitating symptoms of Episodic syndromes and family history of migraine in the siblings [3, 4]. Migraine attacks in the siblings were mostly precipitated by same common migraine triggers in this region of India.

Several studies [5-9] have recorded the relationship of migraine to recurrent abdominal pain. Similar pattern of attacks noted in this study have been recognized by most of them. This condition is often confused with non-specific or psychogenic abdominal pain. The literature [8] underlines the presence of Functional recurrent abdominal pain (FRAP) as very common in day to day practice affecting about 15% of middle and high school students and some diagnostic features of this disorder are similar to Abdominal migraines. There is evidence to suggest that FRAP occurring in the absence of headache may be a migraine equivalent or an early expression of adult migraine. More recently [9] it has been suggested that recurrent abdominal pain should be viewed as a prodrome of migraine headache. The data provided by some studies give further evidence for a causal link and continuity between these two disorders. Family history of migraine is recorded in some previous studies but not included in the diagnostic criteria. The results of this study clearly show the significance of family history and common migraine triggers in diagnosing abdominal migraines especially in confusing clinical situations like short duration and generalized or non-umbilical or non-midline pain with normal examination findings. The only rare entities that can be confused with abdominal migraines are abdominal epilepsies. In abdominal epilepsies, pain is of abrupt onset lasting only a few minutes and frequently associated with a change in consciousness such as disorientation and confusion. During the study period, several children reported less than one hour duration of abdominal pain which is not sufficiently recognized by the International Headache Society as probable abdominal migraines. Accurate clinical diagnosis of abdominal migraine and probable abdominal migraine may spare children with this disorder many unnecessary gastrointestinal investigations and even laparotomy as well as long periods of psychological / psychiatric treatment in rare cases.

Benign Paroxysmal Vertigo is considered as an early manifestation of migraine related vertigo. The main features of our patients are in agreement with those reported in the literature [10, 11] except the very high incidence of family history and triggers. Studies [10-12] show that benign recurrent vertigo in adults are occasionally precipitated by migraine triggers like alcohol, lack of sleep, hormonal changes, food and emotional stress but no study has so far properly documented triggers in children. Absence of impaired consciousness during the vertiginous attacks (sudden unsteadiness and grab on to whatever is near them), negative CNS exam and imaging, normal or non-significant EEG findings are indicators in excluding a relationship between BPV and Epilepsy. BPV of childhood is considered to be a rare and unknown disorder. Other than epilepsies, another important differential diagnosis which must be ruled out is posterior fossa tumors. Infections of the labyrnth and vestibular nerve are diagnostic considerations if the episodes are single and prolonged.

Cyclical Vomiting Syndrome can affect both children and adults. Previous research [13-15] indicate that CVS manifestation occurs in 1.9% school going children and most often starts between ages 3 to 7. It was first described in the 19th century with one of the earliest reference being that of Samuel Gee in 1888. Majority of the sufferers can identify triggers and this study documented triggers in more than 90% of the patients. The most common triggers documented were infections like viral fever, common cold, sinusitis, psychological stress, strenuous physical exercises, lack of sleep and certain foods. Hot weather, menstruation and travelling have been reported as triggers in the previous studies. Motion sickness is very common in migraineur children but a relation with cyclical vomiting is not clearly documented in the past. In the present study, cyclical vomiting was the first Episodic Syndrome manifestation in life as reported by 4 mothers (recurrent vomiting during long distance travelling occurring during the first 6 months of life). In fact, motion sickness can be considered as a migraine trait [16] as many children with motion sickness develop migraine pain (moderate to severe throbbing pain) along with nausea or vomiting later in life while travelling. All triggers reported by CVS patients were identical to well-known migraine triggers. Either a single trigger or combination of triggers precipitated the attacks.

BPT [17, 18] is extremely rare in this region of India and family history of migraine (mothers with migraine without aura) was positive in both the children and crying triggered attacks in one of them. When this disorder is encountered, differentials like Gastro esophageal reflux, Idiopathic torsional dystonia and Complex partial seizure must be carefully ruled out [1, 10].

There are many other migraine equivalents [19, 20] (old terminology for episodic syndromes) described in the literature like hemianopia, scintillating scotomas, ophthalmoplegias, blurring of vision, amaurosis fugax, diplopia, oculosympathetic palsy, periodic fever, confusion- stupor, etc. that have not been sufficiently validated by research studies and thus not included in ICHD-3 beta.

Finally, this study has some limitations. Firstly, no statistical evaluation was done. Secondly, the number of patients per group is relatively small and that does not allow definite conclusions to be made and thirdly, non-evaluation of other appendix Episodic syndromes like infantile colic and vestibular migraines. While the findings of this study provide useful clinical information, it should be cautioned that the results are preliminary and need further confirmation.

Conclusion

Episodic syndromes are unique and deserve further research as it is common in day to day practice and clinically relevant. In future, it may help to clarify the patho mechanisms of migraine itself.

To summarize

1) Episodic Syndromes are not rare in clinical practice.

2) Including family history of migraine and common migraine triggers precipitating attacks will be of immense help in diagnosing these entities.

3) Probable abdominal migraines lasting less than 2 h are more common than current ICHD 3 beta minimum 2 h duration Abdominal migraines.

4) BPT is extremely rare in this region of India.

5) Menstruation periodically triggering severe lower abdominal pain, vomiting and vertigo to be considered as classical examples of episodic syndromes and to be used in teaching models to highlight these disorders.

6) Many Episodic syndromes are associated with migraine head pain and considering them as precursors of migraine, especially in adolescents, is questionable.

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