DIAGNOSTIC AND PREDICTIVE VALUES OF PHOTO ALBUMS AND VIDEOCLIPS IN PEDIATRIC NEUROLOGY CLINICS

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Abstract

Photo-albums and video-clips are simple means for diagnosis of diverse neurologic disorders in children. Most families either own or can borrow a still or video camera. Even when a purchase is required, it is more cost-effective than brain imaging as well as other sophisticated studies, and the family has something useful to show for expenditure. On the other hand many families have a photo-album which could be very informative for pediatric neurologists. These useful and simple means are invaluable in:

- Differentiation of progressive from static diseases of central nervous system in children.
- Helping in diagnosis of diverse types of seizures in pediatric epileptic patients.
- Differential diagnosis of epilepsy like disorders (e.g. sleep disorders) vs. epilepsy in children.
- Diagnosis as well as differential diagnosis of movement disorders in children.
- Therapeutic follow-up in many disorders (i.e. epilepsy, movement and sleep disorders) in children.

In my review article, I have indicated the importance of photo-albums and video-clips as invaluable means of diagnosis and prediction in child neurology by giving simple examples in this regard.

Introduction

We are living in a world of rapid development of science and technology, which to some extent has resulted in a false belief of adequacy of high tech facilities with regard to the prompt diagnosis in pediatric neurology disorders. Recent studies however emphasize the significant role of physical examination and observation in this regard. Reviewing the child's as well as the family's photo-albums and video-clips is an observational method which plays a prominent role in the following:

- Distinguishing progressive from static diseases of the central nervous system in children.
- Diagnosis of diverse types of seizures in pediatric epileptic patients.
• Differential diagnosis of epilepsy like disorders (e.g. sleep disorders), as compared to epilepsy, in children.

• Diagnosis as well as differential diagnosis of movement disorders in children.

• Therapeutic follow-up in many disorders (i.e. epilepsy, movement and sleep disorders) in children.

**Static vs. progressive disorders:**
Reviewing family albums gives useful clues in the detection of neurodegenerative disorders in children. Parents of affected children who are anxious about and sensitive to their child's problem, usually bring along some earlier photos showing their kids engaged in activities which they no longer can perform such as sitting or walking. Careful examination of these photos serves as an invaluable retrospective survey of the patient's developmental and neurological history and background (Fig 1, 2).

*Figure 1:* Family photos showing a well developed infant at the age of 10 month (right). Same patient at the age of 5 years who is bedridden due to a neurodegenerative disorder (above).
The Video-EEG monitoring technique has changed neurologists' attitudes towards epilepsy in children, helping to differentiate between epileptic and nonepileptic phenomena (1, 4). In our country however the necessary facilities to avail of this technique are not yet available (5). It is recommended that parents buy or burrow a video camera to monitor abnormal movements in their children; will definitely be cheaper than several sophisticated exams such as brain MRIs, SPECTs, and other neurophysiologic studies. Of course, it goes without saying that the family can enjoy and benefit from the camera itself!(6-9) (Fig 3).
Determining the type of seizure in children is sometimes essential because the type or category of the seizure is the basis for treatment and the prognosis of the condition.

Video recording can sometimes serve as a valuable complement to the clinical description of seizures in children. It has been demonstrated that video recording can be used to monitor and evaluate seizures in absence and partial complex attacks by using the observational breathing maneuver and then monitor the attack by a video camera (Fig 4).

**Figure 4:** Staring induced by hyperventilation in a child with absence.

**Figure 3:** A video-clip showing the infant involved in masturbatory movements. She was wrongly diagnosed to have epilepsy and was under several anticonvulsant drugs.
Differential diagnosis

Sleep disorders are relatively more common in children than in adults -40% documented by some studies; they are often confused with seizure disorders. This is apparent in cases of abnormal sleep in children. Video monitoring would allow the physician at the bedside to see the patient's motor seizures. Several patients of this series were treated with drugs followed by a gradual discontinuation of drugs.

Differential diagnosis

Despite the latest advances of the examination is not easy in children. Long term video monitoring of the seizures, patient and reviewing of these videos by experts, could provide abnormal posturing (Fig 5).

Fig 5: Severe dystonia and abnormal posture in a girl with basal ganglia disease.
Treatment follow-up:

One of the best ways to follow up effectiveness of treatments used in seizures and movement disorders is video monitoring. Using modern neurophysiologic along with photocinematographic facilities will add to the precision and effectiveness of each of these means in the follow up of neurological disorders in children.
References


