Attention Deficit Hyperactive Disorder -A Clinical Overview

ABSTRACT: An apt overview needed, when one gets lost in the maze of different perspective available for ADHD. This article deals with the difficulties, the components, the significance of ADHD in todays world. Also presented are five cases which difinitely can give us foothold in taking up more such cases for treatment

Dr KUMAR M DHAWALE MD(PSYCHOL), MD (HOM)
Consultant Psychiatrist and Homoeopath
M.L. Dhawale Hospital, Palghar.

Historically, we are able to view different perspective of ADHD. The behavioural perspective which looks at the hyperkinesis as an important component. The neurophysiologic perspective which emphasizes the underlying damage to the brain functioning and the psycho-educational viewpoint which speaks of the attendant learning difficulties in various sub-areas as the more important presentation.

WHAT IS ADHD?

The modern way of viewing it is through the holistic lens where the disorder is seen as a systemic one affecting several faculties which prevent the exercise of attention over a sustained

time frame. This in turn suggests that several areas of the brain are not functioning in an optimal manner. Thus patient has the following difficulties:

A. FOCUSSING: They need to keep attention on an item for a sufficiently long time so that the characteristics of the situation can get an entry into their system. This brings in the involvement of the Superior and temporal cortices and the corpus striatum.
B. EXECUTING: After attention is focused, comes the stage of executing the task. This requires the person to keep attention on the task through the various stages of the execution. The external parietal lobe and the corpus striatum gets into the picture.
C. SUSTAINING: Now attention needs to sustain itself over the entire period when the activity is on and the tectum, the reticular formation and the reticular part of the thalamic nucleus gets involved.
D. SHIFTING: The attention needs to shift from one area to another after the completion of the task. Hence the prefrontal lobe gets involved.

Thus we are able to visualize the systemic nature of the ADHD and can gauge the nature of the interventions needed.

SIGNIFICANCE OF ADHD IN THE WORLD OF TODAY

It is the most common psychiatric disorder of childhood affecting 3-5% of children. There is sufficient evidence to say that the incidence of ADHD has been rising due to a multitude of causes, the chief being the intrusion of multimedia early in the life of the growing child and the inability of the neurophysiological mechanisms to cope with the rapidly changing stimuli. The brain becomes, so to say, 'hooked' on the rapid changes and cannot handle itself when the speed reduces.

It is usually not diagnosed, diagnosed late or misdiagnosed since the entity as we know it has been a late entry into the clinical field. One assumes that the child's attention is natively poor. Hence it can become difficult to judge the abnormal dimension. Also, we have several examples where the presentation is not classical and we are unable to spot its occurrence.

Needless to say, early diagnosis and treatment makes a world of difference in the period when learning is crucial to development. The brain is growing both in size and in connectivity and it is crucial that the attention component is taken care of optimally so that the stimuli are registered and integrated at the right time. Once this time is lost, it cannot be got back again.

COMPONENTS OF ADHD

It is important to note that ADHD has three related components belonging to behavioural and cognitive fields as follows:

1. ACTIVITY- This has to be excessive, purposeless and disruptive.
2. ATTENTION- This is diagnosed from behaviour which is forgetful, disorganized, the child is prone to losing things, child often found to be lost and daydreaming, being off task, failing to complete task without supervision. This latter is missed since we are so used to supervising children in all their activities that it becomes difficult to know that this dimension exists.
3. IMPULSIVITY-The behaviour is physically dangerous, which indicates that the child is mindless of the implications to safety. The child is also mindless to appropriateness of the act and calling out, interrupting or intruding appear to be natural to the child

The following case illustrates the typical experience of the physician who is attempting to deal with the hyperactive disorder.

Case 1

S came on 23/9/2003

5 yrs 9 mths, studying in Sr KG 2nd sibling

Presentation

Restless < In presence of Mother

Hyperactive < In Presence of New Place / Person

Breaks toys within 2-5 days > scolding / hitting

Does not sit in one place

Poor concentration except while watching Cartoons.

Birth History: APH in 2nd Month

Milestones: Dentition 10-11 mth. Walking 8-9 mth. Sitting 5th mth. Words before a yr.

Observations

Master S, 6 yrs old boy has a *'Masoom'* face. This impression changes within a few minutes after interaction with him. Throughout the interview he never sat at one place and constantly moved from one place to another like a monkey. A typical 'Jumping Jack.' He was fighting with his sister, would interrupt in between when the mother was talking. He went outside fore urinal twice or thrice. Mo was now and then requesting him to be quiet but he was not paying heed. Everyone is fed up with pt's behaviour.

Information from Mo: Pt climbs and jumps from window or any place without fear of injury. He runs anywhere, can't sit quiet at one place. Constantly indulges in his own acts and thoughts. Pt plays in mud and will never listen. His school teacher also complains about his behaviour and does plenty of mischief and pranks over others. Routinely, if a new eraser is given, he will break it into four pieces; the same with pencils. In school he dominates over classmates but in front of teacher he will be quiet. He will leave his things at home, forget to bring it back.

He likes to watch TV especially Cartoon serials- watches with full concentration and will never get distracted. He has to be forced for eating food and if promised to allow to watch cartoons, he will listen it automatically like a clever boy which he is not. He fully concentrates while watching cartoons and if somebody calls, he will never listen. When he is studying it is the reverse. He will break his toys within a day of purchasing so parents have stopped purchasing toys. He plays alone and is always involved in his own world. There is a garden close to his bldg. He will run round and round about 100 times. He will never stand in a line in the school and always Zigzags on his way. He goes on talking continuously without any meaning. His bad behaviour peaks when some guests are at home. Parents are ashamed due to his disobedience. When pointed out these things at night, he agrees to his mistakes, promises to behave properly; but come morning and his routine starts. He will listen to stories carefully and will narrate them in the morning or whenever asked. He remembers whatever heard and learnt but doesn't concentrate on studies. He is good in studies.

On contradiction, he gets angry and contrararily does more 'masti'. He never bites / beats Mo. But she has to keep pillows on the shelf or else he would use them for his boxing practice. He fights and teases his sister now but when she is ill he will nurse her.

Mo is fed up with his behaviour and tantrums and is very much anxious about him. She asked 3-4 times whether he will be all right or not.

NOTE

1) While sleeping pt keeps his hand in Mo's blouse which embarrasses her.
2) Once the pt was teasing a puppy constantly and the puppy bit him. Yet he continued to play.
3) Pt fears Fa, as compared to Mo but this is also not so significant.
4) Pt blindly refuses to accept that he has done anything wrong.

Thus we are able to appreciate the diagnostic criteria evolved by the American Psychiatric Association and reported in DSM-IV-TR.

DIAGNOSTIC CRITERIA FOR ATTENTION-DEFICIT DISORDER AS PER **DSM-IV-TR**

A. Either (1) or (2)
B. Six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level.

INATTENTION

(a) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
(b) often has difficulty sustaining attention in tasks or play activities
(c) often does not seem to listen when spoken to directly
(d) often does not follow through on instructions and fails to finish school work, chores, or duties in the workplace (not due to oppositional behaviour or failure to understand instructions)
(e) often has difficulty organizing tasks and activities
(f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental efforts (such as schoolwork or homework)
(g) often loses things necessary for tasks or activities (eg toys, school assignments, pencils, books, or tools)
(h) is often easily distracted by extraneous stimuli
(i) is often forgetful in daily activities
(ii) six (or more) of the following symptoms of HYPERACTIVITY-IMPULSIVITY have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level.

HYPERACTIVITY

(a) often fidgets with hands or feet or squirms in seat
(b) often leaves seat in classroom or in which remaining seated is expected
(c) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings or restlessness)
(d) often has difficulty playing or engaging in leisure activities quietly
(e) is often "on the go" or often acts as if "driven by a motor"
(f) often talks excessively

IMPULSIVITY

(g) often blurts out answers before questions have been completed
(h) often has difficulty awaiting turn
(i) often interrupts or intrudes on others (eg butts into conversations or games)

C. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years
D. Some impairment from the symptoms is present in two or more settings (eg at school [or work] and at home)
E. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.
F. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other

Psychotic Disorder and are not better accounted for by another mental disorder (eg Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder

Clinical features of ADHD

Having gone through the diagnostic criteria, it would be useful to understand the manner in which the ADHD patient will be brought to the clinician. Referrals are most commonly through the school since that is the structured situation where the disturbance is manifest.

a. Difficulty in remaining seated in structured situations eg Classroom, dinner table.
b. In unstructured situations he is more active than peers
c. Fails to pay attention to instruction in academic and social situations
d. Difficulty withholding a response of any kind until the appropriate moment
e. Difficulty in interrupting an inappropriate course of action once initiated
f. Difficulty in adjusting incorrect or maladaptive responses
g. ADHD behaviour is highly context dependent (coloured by perception of different persons)

Note the case of the child whose problem surfaced when he enters a tightly structured condition of a tuition class where everyone is supposed to keep to a strict time schedule.

Case 2

P/4034/06. 10/11/2006.
10 yrs old, 5th std Only child.

Complaints

No concentrations in anything especially studies, Forgets whatever read.
Has to be force-fed
Irritable especially when told anything repeatedly. If secluded either weeps or shouts back at mother.
Hurry in all things.
Will anticipate future action and will ask questions related to these

On Enquiry

Complaint ? since 6 months after joining a tuition class (joined as his friends went there).

Poor performance in tests and poor concentration. Class stopped and mother took up his studies. Does not listen to mother. Back answers. Tells lies. Picks up pencils saying they had fallen down. Mischievous and restlessness. Temper tantrums- beats hands on bed or pulls curtains. Occasional enuresis at night especially when he dreams of ghost who beat him.

We should also note that the presentation alters markedly in older age groups. Eg the adolescent would present without gross motor activity which decreases, but there would be an increased sense of internal restlessness, fidgetiness and inattentiveness.

In adults, diagnosis is difficult. It should be suspected when there is a history suggestive of childhood ADHD in those who present with anxiety, depression, substance abuse.

Here is a case which presented with somatic symptoms and only a detailed diagnostic detailing on the basis of the DSM criteria was able to help in diagnosing.

Case 3

12 yrs Elder of two. P/1974/05. 9/7/05.

Complaints

Abdominal pain since 1 year daily better after breakfast. Better in vacations. The pain starts when woken up in the morning for studies at 5.00 am and when exams are approaching.

There has been a fall in performance in VI standard from previous 85% to 45%. This was attributed to change of tuition class and consequent change in method of giving homework from written to reading.

She has been having difficulty in memory. Cannot remember when explained in English. Is more comfortable in Marathi. Cannot concentrate. Keeps working at books for hours. Keeps looking here and there.

On assessment as per DSM Criteria for ADHD (See above)

A) (1) a, b, f, g, h
(2) a, c, d, f, g, h, i

B, C and D also present

Fall out of ADHD

One of the major issues with the ADHD is not only the disruption of academic and social output, but the effects on the other aspects of the child's relationship with family, the peers and society in general. Some of these are outlined so that we get an idea of the extent of the problem and the manner in which it can be approached.

1. **Behavioural:** The child is frequently reported to be better in one-to-one situation; better with adults; needs clear and immediate consequences and reinforcements; is better with supervision
2. **Emotional:** The child commonly has temper outbursts; mood lability; reactivity; changeability; explosiveness; is very intense and infectious in all its reactions. Rarely does he understand the reaction of others- 'what is the fuss all about?'
3. **Cognitive:** We find that they are frequently misjudge time and have difficulties in completing tasks in time. They have problem in time dependent tasks like planning-waiting-playing.
4. **Social:** Accurately reading social cues; misinterpret and react inappropriately. They are described as 'Bossy, intrusive, insensitive' Verbally and physically aggressive; break rules and social hierarchies; and are frequently suffer rejection and are subject to teasing.

Comorbid conditions and their significance

One of the other difficulties with ADHD children is that almost 50% of them suffer from some other underlying psychiatric condition. The estimates vary in percentage but the range of conditions are quite representative in all studies. The prominent amongst them are:

- 35% Oppositional defiant disorder
- 30-50% Conduct disorder
- 25% Anxiety conditions
- 15% Depression
- 12-25% Mental retardation

It is important to note these conditions since the management would involve an understanding of the changing level and type of pathology and the long term outcome. The nature of treatment and response would be determined by the presence of these conditions.

Case 4

8 yrs child adopted at the age of 3 months. G/159/06. 27/11/06.

Mother's report

Angry as a baby. Throwing things in anger-hitting out. Used to hurt children in playschool without reason. Threw things from the balcony at age of 4 just to enjoy the noise. Sprinkled atta all over the house. Hit the care taker though he loves her. Never made friends. Wanted them to come home and would not allow them to go. Wet himself and passed stools in clothes.

At age of 5 years was started on Methylphenidate ½ tds + Antidep HS. This stopped the bedwetting and the senseless activity reduced but anger and aggression continued. One day he threw a stone at a cyclist and the psychiatrist put him on Haloperidol. Therefore the mother stopped allopathy and switched over to Homoeopathy. He has received *Nat-m, Cham, Tub-bov, Sil, Hep-sulph, Calc-carb, Lyc, Staph, Stram, Bell, Sep and Flower remedies.* Was > with *Staph* and *Stram.* He was manageable.

But attention is very poor. Very slow in class; very easily frustrated. Poor memory for studies. Cannot get started with them. Just sits not knowing what to do. Does not follow instructions. Hates to do anything different. Poor in Maths-gets confused. Poor comprehension.

Psycho-educational Report

Underachievement in oral language, reading comprehension and written language. He has processing deficits in the area of orthographic processing. Adequate performance in Maths.

Differential Diagnosis

1. Anxiety and mood disorders frequently complicate the disorder but occasionally one may misdiagnose it. The differentiating feature would be that ADHD has an early onset and a chronicity rather than the episodic pattern of symptoms which occur in periods of anxiety or depression
2. It is also useful to rule out presence of any learning disability, hearing and vision defects as the following example shows.
3. Lastly mental retardation or developmental disorders are sometimes mis-diagnosed.

Case 5

5 yrs only child. P/11402/01,11/6/01.

Complaints

Obstinacy-must have what he has set his mind on.
Dominating
Beats others, gives bad words
Throws things in anger
Cries for hours when opposed
Restlessness-never sits at one place. Keeps jumping here and there without fear of being hurt
School refusal if teacher beats him
Cries easily if sees others crying or sees emotional scenes on TV
Fears dark, ghosts, being alone
Encopresis

He was initially seen in June 01 and treated as a Conduct disorder. Later due to non-responsiveness he was re-evaluated in Feb 2003 and found not fitting the criteria. The parents were advised educational testing. Unfortunately they took more than two years to follow the advise. Finally in Nov 2005 the testing showed severe language problems both in acquisition, processing and expression.

Clinical Assessment

Since this is a multimodal disorder having fallouts at various levels, it is but logical that data will have to be collected from multiple sources to get a comprehensive view. Thus interview with parents, teachers about child's behaviour in structured and unstructured situations in group, academic and recreational area becomes mandatory.

We should not forget that direct examination and evaluation of child is important to rule out prejudices of parents/teachers.