The Urge to Act : Impulsivity and Huntington's Disease

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Disclosure

- **Dr. Barkenbus has had no personal or financial relationships with commercial interests relevant to this presentation during the past 12 months.**

What is Impulse Control?

- Dementia can weaken normal social restraints on behavior
- Impulse = a sudden inclination urge/desire/whim/drive/instinct
  = a motivating propensity
- Impulsivity = inclined to act on impulse rather than thought.
  = uncalculated
- Fundamental behavioral capacity of the maturing brain.

What is Impulse Control?

- Freewill / Choice / Self-control / The ability to think through immediate desires and feelings before acting on them.

- Taught to children and demanded by society.

- Impacted by
  1. Inherent capacity
  2. Unmet basic drives (eg. hunger).
  3. Environmental factors (eg. financial stress or chemical substance use).

Prototype from Child Psychiatry

- Attention-Deficit / Hyperactivity Syndrome
- Often blurts out answers before questions have been completed.
- Often has difficulty awaiting turn.
- Often interrupts or intrudes on others.
- Often leaves seat in situations when remaining in seat is expected.

Prototype from Adult Psychiatry

- Manic Episode

  (4.8 – 10% prevalence in active Huntington's Disease)

- More talkative than usual.
- Distractibility
- Excessive involvement in pleasurable activities that have a high potential for painful consequences.

  (eg. spending sprees, sexual indiscretions, foolish business investments)

- Impulsive Behavior = Disinhibited Behavior

Four domains of Impulsive Behavior in Huntington's Disease and other Dementias

- Anger
- Sex
- Pathologic Crying

Control of Aggressive Impulses

A common reason for psychiatric hospitalization and nursing home placement.

Compared to a matched sample of Alzheimer's patients, HD patients were rated as more aggressive by caretakers.

A possible reason is development of "rigid" thinking. Relentless perseveration on a particular idea or desire may result in outbursts when perceived needs are not met.

Control of Sexual Impulses

- Original 1872 essay *On Chorea* by George Huntington

  "At present I know of two married men… who are constantly making love to some young lady, not seeming to be aware that there is any impropriety in it. They are suffering from chorea to such an extent that they can hardly walk… but never let an opportunity to flirt with a girl go past… The effect is ridiculous in the extreme."

- Hypoactive sexual desire and inhibited orgasm are most common.

  (men = 63% and 56% Women 75% and 42%, respectively)

- Sexual abberations also described such as sexual assault, promiscuity, incest, indecent exposure, and voyeurism

Pathologic Crying

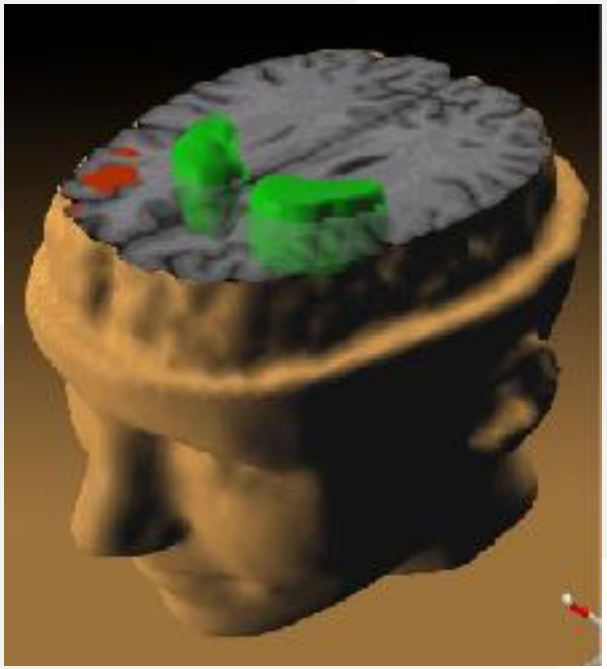
- aka Pseudobulbar Affect or Emotional Incontinence or Involuntary Emotional Expression Disorder.

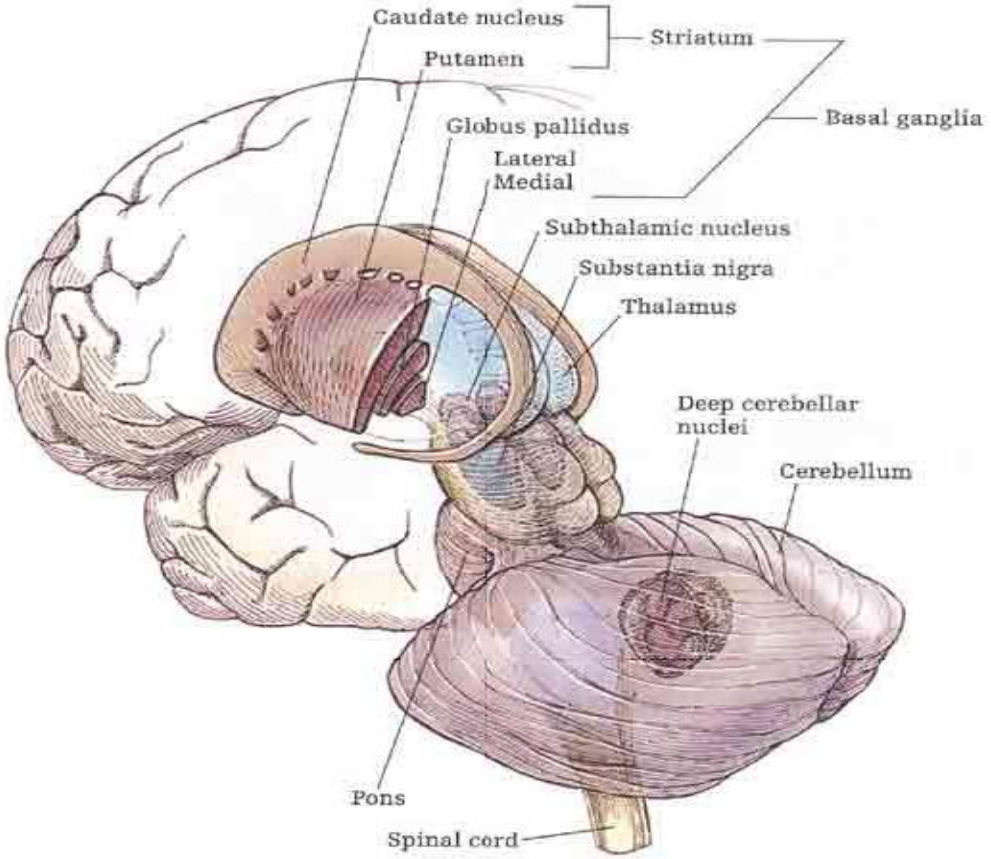
- Brief, unprovoked emotional display (eg. laughing or tearfulness) without the corresponding inner mood.

  eg. Laughter without mirth or Crying without sadness

- Brief, emotional display that is provoked and internally experienced but excessive in severity relative to the triggering event.

Relevant Brain Regions for Both Impulsivity and HD show involvement of the Caudate, OrbitoFrontal Cortex, and Amygdala





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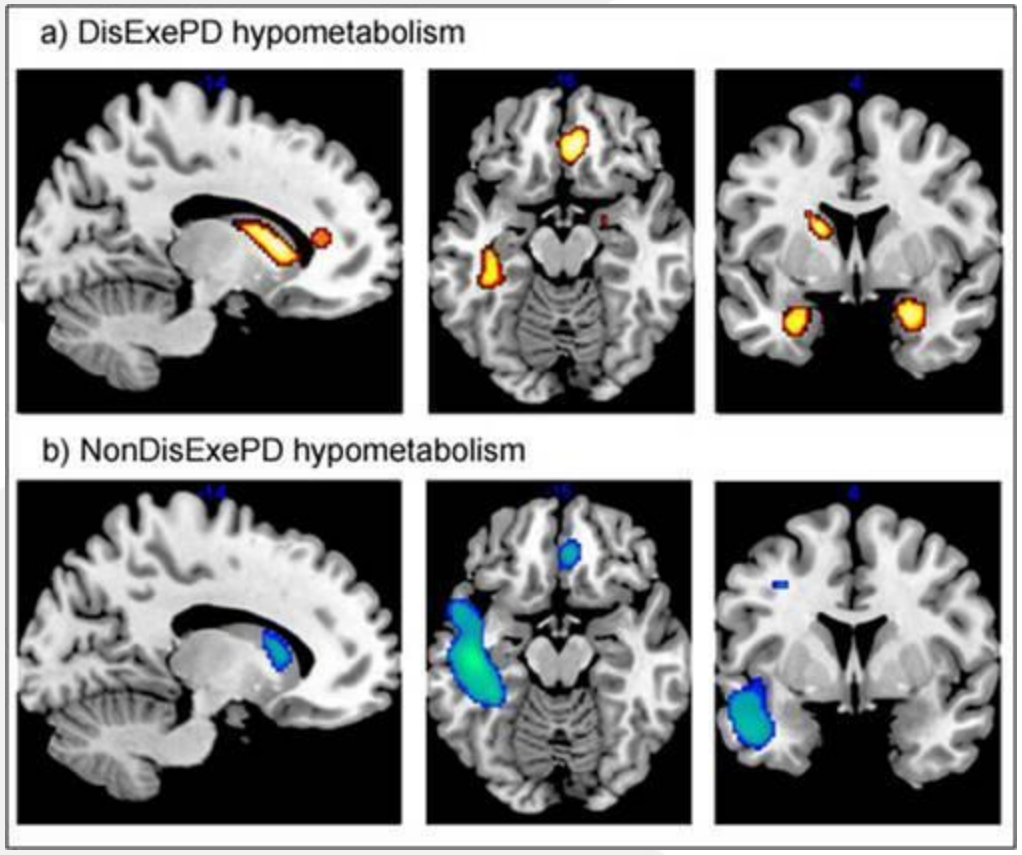

Treatment – Behavioral / Environmental

The key to management of aggression and irritability is to place each in its proper context, and to detect and avoid precipitants. This step will prevent premature use of medications. Factors that may precipitate an irritable episode include hunger, thirst, pain, inability to communicate, frustration with failing abilities, boredom, and an unexpected change in routine.

Treatment – Behavioral / Environmental

If there is a potential for violence, or if conservative measures fail, there are several medication options. Important treatment principles include focusing on reversing the underlying cause of the symptom and frequent medication reviews, thus avoiding enduring treatment for what is usually an episodic symptom.

Treatment - Pharmacological

- Anger
  - first vs second generation “Antipsychotics”
  - “Mood stabilizing” anticonvulsants
  - Beta-blockers
  - Benzodiazepines (eg Valium)
  - “Antidepressants”
- For hypersexual behavior
  - “Antidepressants”, “Antipsychotics”, Anti-Testosterone.
- For emotional incontinence
  - “antidepressants” (older better than newer?)

Some additional factors

- The problem of insight
- Pre-Dementia personality traits
- Alcohol and Substance Use
- Co-existence of Apathy with Disinhibition

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