THE NORTHERN HOSPITAL

SEIZURES PSEUDO

"The Martyrdom of Saint Matthew" oil on canvas, Michelangelo Merisi da Caravaggio.
(Contarelli Chapel, San Luigi dei Francesci, Rome).

With the "Calling of Matthew" finished, Caravaggio returned to the painting for the other wall, Matthew's martyrdom, and his problem had gone.

He strips the scene of its remoteness, its solemnity, and instead gives us what he knew all about - a brutal assault in a back street.

Terrified, chaotic, hysterical - the figures spin around out of control.

The scene is glimpsed as if you were running away, which is exactly what Caravaggio has painted himself doing.

It's all flicker-flicker, strobe lit, hand held, stuttering and shrieking.

And in the middle of all this manic action, there is one fixed point.

Flood-lit, so you can't miss him, the naked assassin, finishing off his hit.

Caravaggio makes the sinner, not the saint, the hub on which everything spins.

It's all shockingly mixed up, with the painter as a fleeing coward. And yet, it was a triumph.

Caravaggio must have thought, "What can't I get away with?"…

He's 30 years old. The "Matthews" have made him an overnight sensation.

The church commissions roll in.

But it all starts to go to his head.

The other Caravaggio shows up.

Violent, abusive, unpredictable.

And the more successful he is, the weirder his behavior gets.

His brother, Giovanni Battista, a priest, comes to see the painter in del Monte's palace.

"I've got no brother. Never had one", says Caravaggio.

Brother leaves, crushed, bewildered.

He gets himself up in a fancy black outfit, but then he wears it until it's in tatters.

Then there's his dog, Crow, which he teaches to walk on its hind legs.

If you're another painter and you see this lot coming towards you, watch out.

Caravaggio and his mates particularly get off on abusing rivals and imitators.

"We'll fry your balls in oil", was one of the choice insults recorded in court.

Whether he meant it or not, all this physical aggression, all this sweaty closeness on the borderline between pathos and trouble, carried over into Caravaggio's art, with shockingly moving results.

Simon Schama, "The Power of Art", BBC Television, 2010.

One of the reasons why Caravaggio's Art is so powerful is that it comes from someone who had a direct connection with the low life of the streets of Rome. When you stand right up to the "Martyrdom of Mathew" you feel unsettled - just as if you are actually there, witnessing a horrific murder. No doubt Caravaggio had seen a few in his time. Indeed he would murder himself. It was powerful Art, and the Catholic Church used Caravaggio in its great struggle to win over the souls of the uneducated and illiterate masses with great effect. Only a direct witness of such an event could capture such chaos and terror. Indeed in the very background we see Caravaggio himself witnessing the brutal scene. Simon Schama sets the sickening scene for us:

"…at the back of the crowd (the same notional distance behind the action that we are in front of it) someone pauses in flight. Sweaty, disheveled, hair matted, brows knitted, Caravaggio casts himself as the cowardly sinner, knowing that he should, for the sake of his own skin, get away from the scene of the crime, and fast too - but at the same time he can't not look. His only saving grace is that he holds a lantern. He is, after all, and against his nature, the bringer of light".

When we witness a tedious pseudo seizure, our natural inclination may initially be to simply run away! However the history of these events by lay-third parties are nearly always utterly unreliable and so there is no substitute - we must force ourselves into the scene and witness events at first hand if there is to be any hope of truly understanding the nature of the patient's "condition"! Even so, it can on occasions be extremely difficult, even for experienced neurologists, to definitively make a diagnosis of pseudo seizure. Fortunately we may paint a truly realistic Caravaggian picture of these events, by use of EEG - Video monitoring.

SEIZURES PSEUDO

Introduction

Pseudoseizures, (also now more correctly known as **psychogenic non-epileptic seizures**), are patient simulated seizure activity.

Diagnosis can be problematic, especially when the activity occurs in a patient who also has genuine epilepsy!

Important clues to the possibility of pseudoseizure can be gleaned from aspects of the history, the examination (**directly witnessing** a "seizure") and in the response to treatment.

The gold standard investigation is **EEG - Video monitoring.**

Treatment of "seizures" can be problematic in the first instance, particularly when the nature of the seizure (organic versus psychogenic) is uncertain.

Where there is doubt, seizure treatment should be initiated with titrated IV benzodiazepines, as for organic seizures.

Epidemiology

Like most manifestations of conversion and other somatoform disorders, pseudoseizures are seen more frequently in women (approximately 70% of cases) than in men.

Pseudoseizures similar to other conversion disorders, are typically seen in young adulthood.

They are less common after 35 years of age.

They are rare in those over the age of 50 years.

Pathology

Unlike epileptic seizures, pseudoseizures do not result from abnormal electrical discharge within the brain.

The reason for pseudoseizure activity is often very difficult to ascertain, however the origin of the behavior is most likely related to underlying psychological issues which are possibly **emotional** or **stress-related** in origin.

Predisposing factors may include

1. Depression

2. Anxiety

3. Personality disorders

Theories for the psychological disorder are varied and have included variations on:

1. Somatoform disorders or conversion disorders:

    - The unconscious production of physical symptoms due to psychological factors.

2. Malingering or factitious disorders:

    - The difference between factitious disorder and malingering is that, in malingering, the reason for the deception is tangible and rationally understandable (albeit possibly reprehensible).

    - In factitious disorder, (or "**Munchausen**" syndrome) the motivation is a pathological need for the sick role.

    Note that that malingering is not considered a mental illness, whereas factitious disorder is.

3 Secondary gain:

    - The patient appears to gain some secondary benefit, often in the form of attention and concern of others.

A frustrating compounding factor is that a sizeable percentage of cases of patients who demonstrate pseudoseizure activity, are in those who also have genuine epilepsy!

Clinical assessment

Pseudo seizures may be difficult to differentiate from genuine seizure activity, especially in experienced exponents!

Partial complex type seizure activity can also on occasions be **genuinely bizarre.**

Even experienced neurologists can on occasions have difficulty differentiating true seizures from pseudoseizures.

Clues to pseudoseizure activity can be gleaned from the history, and on **direct** observation of a "seizure", in addition to the response to treatment.

Important clues may include the following:

Historical indications:

1. No abnormalities found despite extensive investigation

2. No physical injuries

3. No loss of continence

4. Seizure **only** ever occurs in front of witnesses.

    - An occurrence in the physician's office or waiting room is **highly suggestive.**

5. No consistent response (*or no response at all*) to multiple different antiepileptic agents.

6. Unusual triggers for the "seizure" activity (emotional upset or anxiety are common).

7. Coexisting, poorly defined, (and probably psychogenic) conditions, such as fibromyalgia, chronic pain, and chronic fatigue, are associated with psychogenic symptoms.

8. The patient's general demeanour: the **appropriateness of his or her level of concern**, over dramatization, and/ or histrionic features

Examination indications:

1. Normal physiological parameters:

    - The blood glucose is normal

    - There is no fever or tachycardia.

    - Pupils **fail** to dilate (they do so in generalized seizures).

    - Patients do *not* lose continence

2. Prolonged *generalized* seizures often lead to a period of cyanosis.

    - This will *not* be the case in pseudo-seizures. The airway is normally maintained.

3. **Bizarre** motor activity.

    Such as:

    - Side-to-side shaking of the head.

- Bilateral asynchronous movements (e.g. “bicycling”)
- Eye fluttering or clenching the eyes shut.
- Pelvic thrusting (very common in pseudoseizures).

4. Purposeful / semi-purposeful movements noted:

   Such as:

   - Patients who clearly act to protect themselves from injury during “seizure” activity.
   - Directed violence.
   - “Modesty” adjustments.
   - No physical injuries, such as tongue biting occur.
   - Episodes are affected by bystanders (intensified or alleviated)
   - Movements that change in response to external cues.

5. Recall of events or consciousness during what appear to be generalized convulsive seizures, suggest a psychogenic cause.

6. Poor or no response despite seemingly adequate anticonvulsant therapy.

7. Clear conscious state and orientation **immediately** following the “fit”.

8. Pseudoseizures are typically “played out” for **longer than 5 minutes** and often keep recurring. True uncomplicated seizures typically last **less than 2 minutes.**

9. Several manoeuvres are helpful in distinguishing pseudoseizures:

   - Eye opening and arm drop tests are avoided by the patient
   - Eyes move away from a moving examiner.
   - Verbal reassurance, suggestion or distraction, lessen or terminate the “seizure”.

Investigation

All investigations (by definition) are normal

In particular there is a lack of any of the **serious metabolic consequences** of prolonged generalized seizures, (e.g. metabolic acidosis, rhabdomyolysis, hyperthermia).

Prolactin and CK levels:

Prolactin and **creatine kinase (CK)** levels do rise after generalized tonic-clonic seizures and do not after pseudoseizures.

Prolactin levels rise and peak 15-20 minutes after a generalized tonic-clonic seizure, and then fall with a half-life of approximately 20 minutes.

However, the *sensitivity* of these is too low to be of practical value (i.e., lack of elevation does not exclude an epileptic seizure).

EEG:

Ultimately **EEG monitoring during "seizure" activity** may be required.

EEG-video monitoring is a technique that refers to continuous EEG recordings for a more or less prolonged period with simultaneous video recording of the clinical manifestations.

Having a correlation of the recorded behavior (video) and the EEG activity (cerebral activity) can establish a clear diagnosis of pseudoseizures and so EEG-video is now considered to be the criterion gold standard for the diagnosis.

Management

Treatment of "seizures" can be problematic in the first instance, particularly when the nature of the seizure (organic versus psychogenic) is uncertain.

Where there is doubt, seizure treatment should be initiated with titrated IV benzodiazepines, as for organic seizures.

Disposition

Indications for admission may include:

1. Diagnostic uncertainty

2. When anxiety levels are high in patients/ and or relatives, and "seizures" are not settling:

    - A period of observation may be necessary, followed by reassurance and education, which are rarely achievable in an acute ED setting

Counselling

Unfortunately, after the diagnosis of “seizures” is made, it is easily perpetuated without ever being questioned.

Reversing a misdiagnosis of epilepsy can be very difficult, as it is with other chronic/psychogenic conditions.

Cognitive-behavioral therapy from a qualified psychologist may be beneficial, however pseudoseizures may still relapse during times of stress or anxiety.

"The Martyrdom of Saint Matthew" (Detail) oil on canvas, Michelangelo Merisi da Caravaggio. (Contarelli Chapel, San Luigi dei Francesci, Rome).

References

1. G. Wilkes, Seizures in Textbook of Adult Emergency Medicine 4th ed Cameron et al. Churchill Livingston - Elsevier, 2015.

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