The Roko Syndrome: A Mirror of Koro Syndrome

Emmanuel Stip1, Julian Nguyen1, Bastian Bertulies-Esposito2, Marie-Joelle Bedard1, Andreenne Paradis3, and Adrien Tempier3

Abstract

It is well established that 1 in 50 individuals receives a diagnosis of body dysmorphic disorder (BDD). Within body image disorders, there is genital retraction syndrome also known as Koro. A unique syndrome in which there is a heightened belief that one’s genitals will diminish in size, retract into the abdomen and ultimately lead to death. However, we have recently discovered a separate form of BDD that is directly opposite of Koro, in which the patient presents a strong belief that his penis will enlarge and extend out of their body. We present a unique case report of a counter-Koro syndrome. This syndrome is characterized by the delusion that one’s penis is growing larger and that it will result in its extreme protrusion from the abdomen and a consequent fear of recurring and visible erections. Given its mirror-like presentation and uniqueness to occurring only in males, we refer to it as Roko Syndrome. To our knowledge, this syndrome has not yet been reported in the literature and requires further study to understand whether it fits as a separate syndrome or falls along the spectrum of body dysmorphia. Thus, assessments used to identify body image disorders can be broadened to include items representing the behavior and presentation of Roko that we delineate in comparison of Koro. The new syndrome is also easily distinguishable from a priapism which is a urological emergency.

Keywords

Basics of sexuality, human sexuality, sexual disorders, sexual dysfunctions

Introduction

Koro is characterized by the extreme anxiety that results from the perception that one’s penis is shrinking or fear of its retraction into the abdomen and resultant death.1,2 It is important to understand the true Koro versus secondary Koro or chronic Koro description to differentiate it from delusions. There are various concepts that have been out forth, but Koro is still more classified as a culture-bound syndrome, with similarities to panic disorder more than delusional belief. We recently treated a patient who presented with a syndrome that was the converse of Koro. This syndrome was characterized by extreme anxiety, which resulted from the patient’s delusional belief that his penis was growing and fear of its extreme protrusion from the abdomen and frequent erections possibly visible to others. Evidence of this “counter-Koro” syndrome has not been previously published. Therefore, we have coined the name “Roko” syndrome to refer to this condition. In this article, we present this unique case of paranoia about penile enlargement. The participating patient provided informed consent.

A Case Study

R was a 21-year-old Haitian who was undergoing a male-to-female transition. He was living with his parents, who had immigrated to Quebec, Canada, when he was 6 years old. He had a primary diagnosis of attention deficit hyperactivity disorder (ADHD) of the inattentive type with organizational impairment. He had tried psychostimulants (regular dosage...
of methylphenidate, or lisdexamfetamine) between 12 and 21 in the past, but they had proven to be unsuccessful. He also had a diagnosis of obsessive-compulsive disorder (OCD) and was stable with complete remission under 30 mg of paroxetine per day. He had no history of drug or tobacco use and rarely drank alcohol as social use. He had gender dysphoria diagnosed at age of 18 and was undergoing the process of feminization; he had begun hormone replacement therapy at the beginning of 2018.

In June 2018, he began receiving psychiatric treatment through our tertiary program, a First Episode Psychosis Program (FEPP), after experiencing the following symptoms: megalomania (ie, he compared himself to American celebrities), disinhibited sexual behaviors (eg, making seductive sexual advances toward strangers, engaging in risky homosexual behaviors), excessive online purchases, and an aggressive and impulsive attitude when confronted with the consequences of his actions. In addition, R presented with severe anxiety and was troubled by the large size of his penis and frequent and painful involuntary erections. He also experienced the characteristic symptoms of body dysmorphic disorder (BDD), whereby he held a delusional belief that his penis was visible to others. He reported an interplay between his involuntary erections and anxiety (ie, anxiety was both the cause and result of his erections). Consequently, he experienced intense discomfort in social contexts, especially when he had to interact with children as a part of his job as a day camp counselor; his discomfort was triggered by a fear of having involuntary erections, which can easily be misinterpreted. As a result of his discomfort, he avoided social situations and used strategies to hide his erections. Specifically, he used either a protective guard or an adhesive to affix his penis to his leg, which, unfortunately, caused dermal lesions which required treatment with locally ointment. In addition, in social situations, he camouflaged his genitalia by covering his thighs with garments, accessories, or objects (eg, coat, backpack, or a cushion). When questioned, R claimed that gender dysphoria and the decision to undergo hormonal therapy preceded the onset of Roko. Although Roko did not trigger his need for gender reassignment, it motivated him to opt for a vaginoplasty. R reasoned that a vaginoplasty would relieve him of only his constant bodily concerns, not his anxiety, because he had an anxious temperament. However, the overall outcome was rather positive.

From a pharmacological perspective, the management of psychotic symptoms and mood-incongruent psychotic features were stabilized through the gradual titration of risperidone up to 3 mg per day. This also resulted (possibly as a sexual side effect) in a reduction in the intensity but not frequency of erections. Although we did not measure objectively the erections and did not use a scale, the patient described his penis getting softer, less stiff so maybe less noticeable. During treatment, the physicians stopped prescribing psychostimulants altogether and introduced valproic acid to better manage his behavioral disinhibition in peer contexts.

With regard to romantic relationships, R stated that he had stopped engaging in risky sexual behaviors and was currently looking for a more stable and intimate relationship. Nevertheless, R continued to struggle with his overall social functioning. He had stopped attending school and had been fired from 2 coffee shops because of his impaired organizational skills and slow information processing speed, which were most likely caused by ADHD. Despite his good clinical response to the treatment for his mood disorder, he continued to suffer from Roko. The patient continues to have a follow-up to in a FEPP. In addition, R’s physical appearance was very quietly changing to a female, and gender dysphoria could have a contribution to Roko phenomenon.

**Discussion**

To the best of our knowledge, this is the first case report of a counter-Koro syndrome. In the literature, we only found 1 other patient with almost similar symptomatology of complaining about erections. He was described with a post-traumatic stress disorder (PTSD) who experienced involuntary partial erections and ejaculations 2 to 3 times per day. They occurred during routine daily activities and in his sleep, whereby he reexperienced the traumatic event (ie, flashbacks, nightmares) and experienced hyperarousal. It is difficult to exclude that a similar anxiety-based arousal can explain the erection here. The spontaneous erections and ejaculations were not pleasurable; instead, they resulted in intense guilt and anxiety. This was the first reported case of spontaneous ejaculations that are secondary to PTSD. Two other patients in the literature who had experienced unwanted erections also had OCD, and this is a previously unreported association. OCD is not incompatible with the symptom of unwanted erections and should, therefore, be considered as a potential diagnosis during medical examinations.

**Koro versus Roko**

To the best of our knowledge, this article is the first case report of a patient with delusional beliefs, anxiety, and a deeply held fear of penile enlargement coupled with gender dysphoria. Thus, this syndrome is unique, and it is neither an epidemic nor a culture-bound syndrome. We have introduced a counter-Koro syndrome, namely, Roko.

In Table 1, we describe the differences between Koro and Roko Syndromes.

**Roko versus Priapism**

Roko syndrome is also very different from an organic or psychogenic syndrome, called priapism. It is defined as prolonged erection that persists for more than 4 hours beyond sexual stimulation and orgasm or unrelated to sexual stimulation. Ischemic priapism is defined as “nonsexual,”
Table 1. A Comparison of the Characteristics of Koro and Its Mirror-Image Syndrome, “Roko”

| Koro                                                                 | Roko                                                                 |
|----------------------------------------------------------------------|----------------------------------------------------------------------|
| Intense anxiety about the penis invaginating and retracting into the abdomen | Anxiety about penis enlargement and frequent erections that may be visible to others |
| Feelings of guilt and fear of punishment from others as a result of having a small penis | Feelings of guilt about having a large penis and erections that may be visible at inappropriate times |
| Compensatory mechanisms to confirm the presence of the penis (eg, masturbation, grasping) | Compensatory mechanisms to hide the penis (eg, taping, wearing a protective guard) |
| A sense of masculine inadequacy                                       | Rejection of masculinity                                              |

persistent erection characterized by little or no cavernous blood flow and abnormal cavernous blood gases.

Stuttering, or intermittent, priapism is a form of ischemic priapism that self-resolves spontaneously. Nonischemic or high-flow priapism is derived from unregulated arterial inflow within the penis, which is significantly less common and, therefore, less well characterized than ischemic or low-flow priapism.

Drug-induced priapism is a rare but serious condition associated with a variety of prescribed and illicit drugs. The most common causes include antipsychotics such as risperidone, oral phosphodiesterase type 5 inhibitors, the antidepressant trazodone, and alpha-adrenoceptor antagonists. When patients present to the emergency department with priapism, a thorough drug history should be carried out, including use of recreational drugs and drugs obtained without prescription. Our patient had a normal urologic examination. Priapism can cause irreversible erectile dysfunction and is a urologic emergency. Cases of priapism which could not be attributed to any of the many common causes for priapism, such as trauma to the cord, leukemia, and local irritations, were grouped as idiopathic. Among the so-called idiopathic cases, one can discern psychic factors which might account for the condition, but which were rarely emphasized by the observers. The presentation of inappropriate penile erections should be examined with great caution when making a diagnosis.

Patients diagnosed with BDD may be anxious or obsessed with a particular organ such as the nose or ears. Essentially, these organs are fixed and not very mobile. Moreover, they do not triple in size and are not directly related to sex life. In contrast, in the case of Koro or Roko, the organ that is the object of obsession or delusion is the penis, which is capable of changing volume and movement. The specific functional attributes of the penis lead to the specificity of these 2 syndromes among the BDD spectrum.

**Conclusion**

Globally, the patient had an unshakeable belief that his penis was seen by others because of its enormous size. The prescribed antipsychotic drug appears to have a beneficial effect on this belief. It may be too premature to hypothesize a new syndrome on 1 case study. However, this was the first report of a patient presenting with a unique case of paranoid penile enlargement and gender dysphoria. These are both very interesting and current topics that are very closely related to body dysmorphia. Gender development is a very complex issue and we had only surfaced this issue, in hindsight we could have gone a little deeper. There are many possible variations that can cause a mismatch between a person’s biological sex and their gender identity, making the exact cause of body-gender dysphoria unclear. That is why we believe this is a sensitive case that could have further contributed to the field of psychiatry on the topic of body-gender dysphoria. For obvious reasons, we were very careful not to reduce body-dysmorphophobic elements to solely symptoms of mania. In a recent article about genital dimensions, Rao and Andrade question how important is it to know what is normal. Given the concern on all continents regarding genital appearances, one might indeed wonder why there are so few studies on the subject. Individuals suffering from BDD with concerns about penis size have been found to perceive that their penis size is less (Koro) or greater (Roko) than what others expect or demand it to be, which can lead to a fear of punishment from others.

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**ORCID iD**

Emmanuel Stip [https://orcid.org/0000-0003-2859-2100](https://orcid.org/0000-0003-2859-2100)

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