

# Physical Therapy Treatment of Persistent Genital Arousal Disorder During Pregnancy: A Case Report

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## ABSTRACT

**Introduction.** Persistent genital arousal disorder (PGAD) is described as the spontaneous, intrusive, and unwanted genital arousal in the absence of sexual interest and desire. Whether the etiology of this disorder is essentially central or peripheral is unclear; however, a presenting symptom may be persistent engorgement of genital erectile and vascular tissue.

**Aim.** To describe a case of a distressed 27 year old pregnant woman with symptoms consistent with PGAD, and the intervention leading to the resolution of symptoms.

**Methods.** A patient with symptoms of PGAD was assessed. Information regarding this condition was offered. A manual therapy treatment was provided to decrease muscle hypertonus near the pudendal nerve, and a home intervention was suggested.

**Results.** Complete resolution of symptoms per patient's report 1 week later.

**Conclusion.** Treatment with pelvic floor manual therapy directed at the pudendal nerve may provide safe and significant relief from PGAD symptoms in a pregnant woman patient. **Rosenbaum TY. Physical therapy treatment of persistent genital arousal disorder during pregnancy: A case report. J Sex Med \*\*;\*\*:\*\*\_\*\*.**

**Key Words.** Persistent Genital Arousal; Physical Therapy; Pelvic Floor; Pudendal Nerve; Pregnancy

## Introduction

Persistent genital arousal disorder (PGAD) is described as spontaneous, intrusive, and unwanted genital arousal (e.g., tingling, throbbing, pulsating) in the absence of sexual interest and desire. The arousal is unrelieved by one or more orgasms and the feelings of arousal persist for hours or days. The feelings of arousal are at least moderately distressing [1]. The etiology of PGAD is not completely understood, but theories point to several possible physiological and psychological factors to explain this phenomenon [2]. Investigations support the concept that persistent arousal is primarily a genital complaint of physiological arousal and is unrelated to desired sexual feelings [3]. Recent investigations by Waldinger et al. point to the possibility that PGAD is part of a cluster, called Restless Genital Syndrome, which includes restless legs and/or overactive bladder and is a primarily peripheral disorder [4,5]. On the other

hand, some investigators propose that PGAD is caused by central mechanisms such as central dopaminergic dysfunction, and this may be altered by electroconvulsive therapy [6,7]. PGAD has been associated with obsessive compulsive disorder, depression, anxiety, and past sexual assault, and has been described while using or after discontinuation of selective serotonin reuptake inhibitors (SSRIs) [8,9]. Other theories point to hormonal etiologies [10], or mechanical factors including pelvic varicosities or trauma [11]. Mechanically based theories suggest that pelvic floor muscle dysfunction may be associated with PGAD, accounting for its co-morbidity with urogenital symptoms [12]. A proposed mechanism may be that sensitivity of the pudendal, ilioinguinal, genitofemoral, or iliohypogastric nerve increases afferent sensations and triggers and perpetuates arousal mechanisms including activation of the pudendal and surrounding arteries. Resultant arousal may trigger pelvic floor muscle contraction, which may further

cause trapping of blood in the genitals. Hypertonicity of the bulbocavernosus and ischiocavernosus muscles may cause compression of the deep dorsal vein of the clitoris, preventing or retarding venous outflow [13]. Fascia surrounding the nerves in the pelvis may trap the blood as well, maintaining high levels of arousal despite orgasm [14]. Such a mechanism of blood entrapment may be present in the pelvic engorgement of pregnancy as described in the following case.

### Case Report

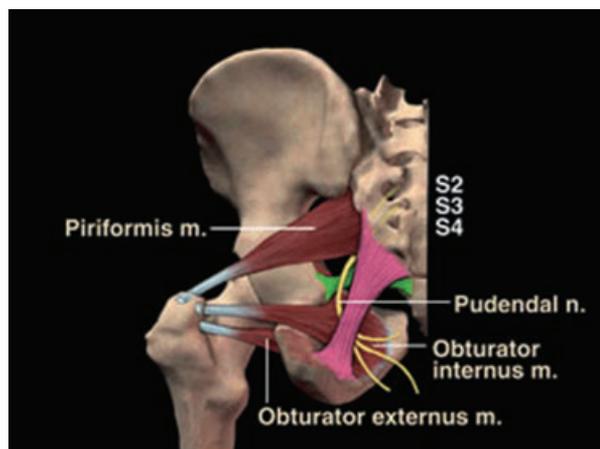
A 27-year old doctoral student presented to the author's clinic 27 weeks pregnant with her fourth child. She married at age 18 at which time she commenced sexual activity. She denied any history of sexual abuse. She reported no history of sexual or relationship problems, although during her previous pregnancies she experienced less desire and arousal. After stating that she was too embarrassed to discuss this problem with anyone else, she reported that she has currently been experiencing symptoms of persistent and unwanted genital arousal. This compels her to leave the library where she conducts research approximately four times a day and enter the bathroom in order to masturbate, which temporarily alleviates her symptoms. This began around the 18th week of pregnancy and has been getting progressively worse. She states that although she is cognitively aware that masturbation "is not wrong", she finds the frequent and compulsive aspects of this behavior very dissonant with her role identity and image of herself. She explained that as a religious woman, she connects genital arousal to sexual feelings, which should only occur within the context of sexual relations with her husband and, therefore, she is troubled that she spends an inordinate amount of time feeling so aroused. Her perception that she has become somehow "overly sexual" distresses her greatly. Upon further questioning, the patient admitted that she also experiences pelvic and vulvar area heaviness and pressure after prolonged standing "as if all the blood is trapped down there." She denied any other symptoms which included restless legs or urogenital complaints.

The patient was examined and a complete physical therapy examination and pelvic floor assessment was performed in accordance with published guidelines for pelvic floor physical therapy assessment [1,15]. This included evaluation of the patient's posture, gait, overall flexibility, pelvic stability and muscle strength of the lower

extremities, abdominals and pelvic floor muscles. The vulvar area was observed. No erythema, abnormal secretions, or signs of infection were noted and the patient confirmed that recent swabs performed by her gynecologist were negative for candida and bacterial vaginosis. However, significant engorgement was noted of the entire vulva and the glans clitoris was visible and firm. The engorgement increased when the patient was asked to stand. Edema of the vulva was noted as well as vulvar varicosities along the left outer labium. An internal pelvic floor examination was performed using the Modified Oxford Grading System (MOGS). The MOGS, developed by Laycock, is a 6-point scale widely used by physical therapists in assessing pelvic floor strength [16]. Assessment of concentric strength of the pelvic floor indicated a weak contraction.

In addition to assessing motor control of the puborectalis and levator ani muscles, overall muscle tone was assessed as well as the tenderness and presence of trigger points in these muscles. In addition, the muscles of the superficial layer of the pelvic floor (bulbocavernosus, ischiocavernosus, transverse perineum and external anal sphincter), the coccygeus and the obturator internus (OI) muscles were assessed. An increased bulbocavernosus reflex with external anal sphincter contraction was noted in response to clitoral palpation. Deep palpation of the pelvic floor revealed hypertonus and presence of multiple trigger points in the muscles of the obturator internus, particularly on the left side. Trigger points have been described by Travell and Simons [17] and consist of focal hyperirritated points in a tissue that, when compressed, give rise to referred pain and tenderness. The pudendal nerve was palpated at the ischial spine and at Alcock's canal (Figure 1). Nerve palpation did not elicit painful symptoms; however, palpation revealed hypertonic OI muscles that may have been restricting space in Alcock's canal. Soft tissue mobilization to decrease OI tightness bilaterally was performed for approximately 10–15 minutes. Immediately after the procedure, when the patient stood up, she reported the feeling that "something had been released" in her pelvis. The duration of the appointment was approximately 1 hour.

In addition to the manual therapy, limited information and several specific suggestions were provided to the patient. Firstly, explanations were provided to the patient regarding the significance of her symptoms and the fact that they correlated with a known and identified disorder known as PGAD. The syndrome was explained and



**Figure 1** Location of pudendal nerve and surrounding musculature.

attributed to the presence of pregnancy related genital engorgement. The symptoms of persistent genital arousal were described for the patient as a physiological genital condition not unlike bladder urgency or vaginal itching, and thus, the sexual significance previously attributed to these symptoms were reconsidered. Secondly, the patient was provided with information regarding the purchasing of a pregnancy garment known as the V-brace designed to support the vulva in a manner similar to a male athletic belt. She was requested to avoid prolonged standing, perform daily pelvic floor exercise of 20–30 5-second pelvic floor contractions, and regular swimming was advised to assist with lower extremity circulation. Finally, the patient was provided with a referral to a psychiatrist trained in sexual medicine to discuss the possibility of SSRI medications that may be safe during pregnancy.

The patient did not return for follow up. She e-mailed 1 week after the initial visit stating that her symptoms were markedly resolved. She did purchase the belt and reported suffering less from genital engorgement and vulvar pressure as a result. She did not follow up with a psychiatrist as she no longer felt that any additional pursuit of treatment was necessary at the time. A follow-up phone call to the patient 10 weeks and again 14 weeks later confirmed that the resolution of her PGAD symptoms was complete.

## Discussion

In this 27-year old pregnant female, PGAD caused significant distress because of both the sexual and

the compulsive nature of the arousal stimuli. Genital symptoms of arousal symbolized for her an abnormal hypersexuality, and the lack of control she experienced by needing to masturbate in order to alleviate the symptoms greatly contributed to her anxiety. It is likely that explaining to the patient that the condition is a genital disorder rather than a sexual one, and reframing the compulsion to masturbate as a physiological need rather than a sexual addiction, assisted the patient in altering her cognitions, and helped to significantly reduce her anxiety. As both genital responses and compulsive behaviors appear to be influenced to some extent by anxiety [18], reduction of anxiety may be one factor in symptom relief.

This case also illustrates that PGAD symptoms may result from mechanical causes. This particular patient was experiencing her fourth pregnancy in 7 years which may have left her vulnerable to vulvovaginal engorgement. It is also possible that trigger points located at her OI musculature resulted from those muscles contracting in an attempt to maintain pelvic stability in the absence of strong pelvic floor and abdominal muscles. Overactivity of the OI may have restricted available space in Alcock's canal impinging or entrapping the pudendal nerve. This presentation is generally attributed to pudendal nerve distribution pain, such as in perineal pain or clitorodynia secondary to peripheral nerve entrapment, and has been described in the literature [19,20]. It is possible that a similar mechanism exists whereby nerve entrapment or irritation may trigger increased afferent firing, resulting in persistent feelings of arousal. Recently, it has been postulated that pudendal neuropathy is a key factor in Restless Genital Syndrome which consists of PGAD and/or restless legs and/or overactive bladder [20]. Temporary and self-limiting occurrence of PGAD during pregnancy has previously been reported in three (20%) out of 15 women, who at a later age developed Restless Genital Syndrome [21]. The treatment that was provided likely decreased the hypertonicity of the OI muscles, increased available space in the Alcock's canal, and released excess pressure on the pudendal nerve. This may also have relaxed the ischiocavernosus and bulbocavernosus muscles, removing pressure from the deep dorsal vein of the clitoris and allowing venous return. Another possible explanation for the success of the manual therapy technique may be central in nature, whereby stimulation of the area provided by the manual stimuli decreased neural firing through sensory habituation. The support

garment provided may have provided pelvic support and prevented further over compensatory activity of the OI muscles, preventing recurrence of symptoms. The compression provided by the garment may have also served to decrease edema and thereby help relieve the discomfort related to vulvar engorgement.

There are several flaws in this case report. A complete sexual medicine evaluation using tools such as ultrasounds, Doppler studies, and blood hormone tests were not performed. Furthermore, it is difficult to ascertain if the proposed mechanism of treatment is what alleviated the symptoms, and it is possible that alleviating the patient's anxiety and providing a treatment which resulted in overall relaxation was a significant contributor. Finally, the patient was only seen one time and did not return to treatment and therefore, did not receive a follow-up exam to determine a change in physical findings. The reports of her improvement were confirmed, however, by several follow-up e-mail and telephone conversations.

### Conclusion

The success of manual treatment in a pregnant woman with PGAD has potential positive implications for treatment of non-pregnant women particularly when there are positive objective findings related to the pelvic floor. Further research is necessary to determine to what extent the pelvic floor is involved in PGAD, what specific techniques are indicated to effect a positive change in symptoms, and why these mechanisms may be effective.

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*Conflict of Interest:* None.

### Statement of Authorship

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