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# CASE STUDY

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## Resolution of Brachioradial Pruritis, Vertigo & Neck Pain Following Introduction of Upper Cervical Chiropractic Care: A Case Study

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### ABSTRACT

**Objective:** To report on resolution of symptoms associated with brachioradial pruritis in a patient undergoing upper cervical chiropractic care to correct vertebral subluxations.

**Clinical Features:** Thirty-seven year old female with history of brachioradial pruritis presented for chiropractic care. She also had complaints of neck stiffness and vertigo. Objective indicators of vertebral subluxation were identified upon palpation, thermography, and radiographs.

**Intervention & Outcomes:** NUCCA chiropractic technique was utilized directed at reducing vertebral subluxations in the cervical spine. After 2 ½ months of care, the symptoms associated with BRP had resolved.

**Conclusion:** This paper describes the case of a 37 year old female with a past history of brachioradial pruritis. Dramatic improvement in the symptoms associated with the condition is noted following the introduction of upper cervical chiropractic care, concomitant with a reduction in vertebral subluxation. Since it is impossible to generalize the results of a single case study to the population, additional research on brachioradial pruritis and its relationship to the cervical spine is warranted.

**Key Words:** *Brachioradial pruritis, NUCCA, Atlas Subluxation Complex, Upper Cervical Chiropractic, vertebral subluxation*

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### Introduction

Brachioradial Pruritis (BRP) is a neurogenic condition of the upper extremities.<sup>1,2</sup> It affects the integumentary system of the dorsolateral forearm superficial to the proximal head of the brachioradialis muscle. This condition can present as unilateral or bilateral. One with BRP is often unable to sleep due to the intense itching, burning, and tingling sensations associated with this condition.

Scratching reportedly provokes and makes it worse. Cryotherapy provides some relief,<sup>3</sup> however, frustration is commonly seen because the inability to get total relief from conventional antipruritic pharmaceutical agents.<sup>4</sup>

With BRP there may be evidence of excoriation or lichenification in the affected areas, but there is usually no erythema or skin eruptions present.<sup>6</sup> Exposure of the affected areas to sun and wind may precipitate a flare up, as may radiculopathy of the cervical spine.<sup>4,7,8</sup>

Studies by Massey and Massey<sup>5</sup> have shown that abnormalities in cutaneous innervation results in altered

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sensation to temperature and pinprick. This appears in the distribution of the posterior cutaneous nerve of the forearm, which supplies the brachioradialis muscle that is typically pruritic.<sup>4,5</sup>

According to Julianne Mann, MD, there are two prevailing hypotheses to the etiology of BRP. The first is that BRP is caused by injury to peripheral cutaneous nerves from sunlight exposure. The second suggests that nerves are damaged at the level of the cervical spine.<sup>6</sup> This suggests that the anatomic location of neural injury or irritation producing pain is unsubstantiated. The purpose of this paper is to describe a case of BRP successfully treated using an upper cervical chiropractic technique.

## Case Report

### *History*

A 37-year-old female presented for chiropractic care with complaints associated with BRP. She described the condition as an intermittent bilateral itching with burning sensations to the upper extremities for the past 9 months. Upon inspection, red blotches were noted along both arms. These symptoms had progressively gotten worse over time, being more agitating when exposed to hot weather. It was to the point that she was unable to sleep for more than 4 hours a night due to the intense itching.

In turn, the lack of sleep affected her ability to care for her young children as well as work as a registered nurse. Her arms itched so intensely that she would scratch them until they would bleed. She had tried multiple treatments including Benadryl, topical ointments, and creams with no relief. The only palliative treatment that was successful was the application of ice to the affected areas.

The patient also complained of neck stiffness and vertigo. She began taking non-steroidal anti-inflammatory drugs (NSAID) several times a week to relieve the neck discomfort. In the past 6 months, she had experienced 3 or 4 episodes of vertigo, causing nausea and vomiting. Sometimes these episodes were to the point of incapacitation. Her past history included a history of head and neck trauma as a result of a fall down the stairs. She also noted numbness into both arms immediately after the fall for approximately one week. This happened 8 years prior to the current presentation.

### *Examination*

Upon examination, postural analysis revealed a noticeable head tilt to the right. Also noted was a low ilium on the left contributing to the leg length discrepancy seen in the supine leg check. Restrictions were also noted during cervical range of motion. Active cervical lateral flexion on the left elicited neck pain and was restricted to 20 degrees. Left cervical rotation was diminished to 40 degrees.

Further evaluation revealed tenderness over the cervical erector spinae muscles on the left side from C1-C7. Along the sternocleidomastoid muscles bilaterally, muscle spasms were present. Paraspinal digital infrared imaging showed moderate temperature differences on the left side of C2- C4,

C6-C7, T1-T2, T4, and L1- L3. Mild temperature readings were seen on the right of C1. The diagnosis was atlas subluxation complex as a result of cervical misalignment.

An atlas subluxation complex (ASC), as defined by the National Upper Cervical Chiropractic Association, is when the atlas has lost its alignment with the vertical axis in one or more planes. This results in neuromuscular stresses which in turn produces mal-alignment of the spine and pelvis and contiguous structures.<sup>9</sup>

An upper cervical radiographic series was taken. The series included lateral cervical, vertex, and nasium views. Analysis of the x-rays revealed phase I-II degenerative disc disease at C4/C5 and C5/C6. There was a loss in the lordotic curve, along with bone spurs and decreased disc space. A misalignment of the occipito-atlanto-axial region was also noted. Atlas laterality in the frontal plane was 1 ½ degrees into the right frontal plane. Rotation of atlas in the transverse plane was measured to be significant at 5 ½ degrees, posterior rotation. The misalignment was found to have the characteristics of a NUCCA Basic Type IV Misalignment. Type IV misalignments usually have contralateral acute angles, a high atlas plane line, and a head tilt into the side of laterality.

### *Intervention & Outcomes*

The misalignment was corrected using a manual technique employed by the National Upper Cervical Chiropractic Association (NUCCA).<sup>9</sup> The patient was placed on the adjustment table laying on her left side. The right C1 transverse process was the contact point. A correction force was introduced to the spine using specific upper cervical adjusting procedures. The success of the correction was measured by a lessening of leg length disparity, postural changes, and post correction x-ray analysis. The post x-ray revealed a satisfactory reduction of the atlas laterality from 1 ½ to ½ degree of laterality. The atlas rotation reduced from 5 ½ degrees of posterior rotation to 3 ½ degrees.

After the first adjustment, the patient's leg length deficiency changed from 1 inch to no noted deficiency. After the second adjustment, the patient's symptoms of itching had diminished significantly that night. After the third adjustment, the patient stated that she was able to sleep for more than 6 hours without the discomfort of itchiness. After being under chiropractic care for 2 ½ months, she stated that the BRP symptoms had resolved.

At her 3 month reassessment, the neck stiffness was noted to be 70% resolved, while cervical range of motion was normal and without pain. Muscle spasms were no longer present at the sternocleidomastoid muscles. As for the vertigo, it had completely resolved after the first adjustment. She is currently undergoing maintenance care to prevent further health related problems.

## Discussion

The cessation of the patient's BRP symptoms is a situation whose timing was shortly preceded by the upper cervical correction. Perhaps not all BRP symptoms can be helped with

spinal adjustments. However, upper cervical specific chiropractic care would surely be the most conservative treatment in the primary care system. Careful investigation into each case may reveal possible avenues that may eventually help the patient reduce or in some cases entirely eliminate the need for pharmaceutical therapy.

In the chiropractic literature, there is very little information available on brachioradial pruritis. However, medical sources provide that there is little to no chance of cessation of BRP. This void in literature demonstrates the need for more research on this condition. The research should not only explore alternative methods of treatment but also search for possible causative factors as well.

## **Conclusion**

This paper describes the case of a 37 year old female with a past history of brachioradial pruritis. Dramatic improvement in the symptoms associated with the condition is noted following the introduction of upper cervical chiropractic care, concomitant with a reduction in vertebral subluxation. Since it is impossible to generalize the results of a single case study to the population, additional research on brachioradial pruritis and its relationship to the cervical spine is warranted.

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