

# A Singular Case Study: Acupuncture Treatment with GB20, GB21, UB11, LI4, LI16 for Acute Pain Management in Cervical Spondylosis

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**Abstract:** ***Background:** Cervical spondylosis, a common degenerative condition, often presents with cervical pain and radiculopathy. Acupuncture has been explored as a complementary therapy for pain management in various musculoskeletal disorders. **Case Presentation:** A 40 - year - old male, presented with persistent cervical pain and left arm radiation, attributed to cervical spondylosis. His medical history included hypertension. Conventional treatments provided partial relief, prompting the exploration of acupuncture as an alternative therapy. **Diagnostic Assessment:** Clinical examination and imaging confirmed cervical spondylosis. No contraindications to acupuncture were identified. **Therapeutic Intervention:** Acupuncture treatment focused on acupoints GB20, GB21, UB11, LI4, and LI16, selected for their analgesic and anti - inflammatory properties. Treatment sessions were conducted over four weeks. **Follow - up and Outcome:** The patient reported significant pain reduction and improved range of motion following acupuncture treatment. Pain intensity decreased from 8/10 to 2/10 on the visual analog scale. There were no adverse effects noted. Moreover, he experienced a notable decrease in hypertension symptoms. **Discussion:** This case highlights the potential efficacy of acupuncture as an adjunctive therapy for acute pain management in cervical spondylosis. The selection of acupoints aimed to alleviate pain and inflammation, yielding favorable outcomes in this patient. Additionally, the observed reduction in hypertension symptoms suggests a possible ancillary benefit of acupuncture in managing comorbid conditions. **Conclusion:** Acupuncture, targeting specific acupoints, demonstrated promising results in alleviating acute pain and improving functional outcomes in cervical spondylosis. Further research is warranted to elucidate the mechanisms of action and optimize treatment protocols in similar cases.*

**Keywords:** Acupuncture, cervical spondylosis, pain management, complementary therapy, case report

## 1. Introduction

Cervical spondylosis, characterized by degenerative changes in the cervical spine, poses a significant clinical challenge due to its diverse array of symptoms and impact on patients' daily lives. Among these symptoms, acute neck pain is a primary concern, often prompting individuals to seek immediate relief and effective management strategies. While conventional therapies offer various options for pain control, complementary approaches such as acupuncture have emerged as promising adjunctive modalities, particularly in addressing acute pain episodes associated with cervical spondylosis<sup>1</sup>.

Acupuncture, a cornerstone of traditional Chinese medicine, involves the insertion of fine needles into specific acupoints along the body's meridians to stimulate physiological responses and restore balance. In cervical spondylosis, acupuncture has gained attention for its potential to mitigate acute pain, reduce inflammation, and enhance overall well-being<sup>2</sup>. Among the myriad of acupoints utilized in acupuncture protocols, Gallbladder 20 (GB20), Gallbladder 21 (GB21), Urinary Bladder 11 (UB11), Large Intestine 4 (LI4), and Large Intestine 16 (LI16) hold particular relevance for their purported effects on neck pain relief and muscle relaxation.

In this singular case report, we present a comprehensive examination of the application of acupuncture targeting GB20, GB21, UB11, LI4, and LI16 for the acute pain management of cervical spondylosis in a specific patient. Through meticulous documentation of the patient's clinical presentation, treatment protocol, and outcomes, we aim to elucidate the efficacy and potential mechanisms underlying acupuncture's analgesic effects in this context.

By exploring the intricate interplay between acupuncture therapy and acute pain management in cervical spondylosis, this case report seeks to contribute to the evolving body of evidence supporting the integration of complementary modalities into conventional care paradigms. Through the dissemination of this case, we aspire to foster a deeper understanding of acupuncture's role in alleviating acute pain episodes in cervical spondylosis and stimulate further research into optimizing its utilization for enhanced patient outcomes.

Ultimately, this case report underscores the importance of individualized, multimodal approaches to pain management in cervical spondylosis, highlighting acupuncture as a valuable tool in the armamentarium of therapeutic options for addressing acute pain in this challenging condition.

## 2. Case Description

A 40 - year - old male patient presented with symptoms indicative of cervical spondylosis. He reports experiencing persistent cervical pain, accompanied by radiation to the left arm. Additionally, the patient has a medical history significant for hypertension.

### 1) Demographic Information:

- Age: 40 years
- Gender: Male

### 2) Medical History:

He has a past medical history notable for hypertension. He has been under treatment for hypertension for an unspecified duration.

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**3) Presenting Complaints:**

The patient presents with the following complaints:

- **Cervical Pain:** He reports persistent pain localized to the cervical region of the spine. The pain is described as dull and aching, with intermittent exacerbations. The severity of pain ranges from moderate to severe and is exacerbated by movement of the neck.
- **Radiation to Left Arm:** He experiences radiation of pain from the cervical region to the left arm. The pain extends along the left arm, reaching the forearm and occasionally the hand. He describes the pain as aching and occasionally tingling.
- **Hypertension:** He has a history of hypertension, which has been managed with antihypertensive medications. However, the specific details of his hypertension management are not provided.

**4) Clinical Findings:**

Upon clinical examination, the following findings are noted:

- **Restricted Range of Motion:** He exhibits a limited range of motion in the cervical spine, particularly in flexion, extension, and lateral rotation.
- **Positive Spurling's Test:** The patient demonstrates a positive Spurling's test, eliciting radicular symptoms upon cervical spine compression.
- **Neurological Examination:** There are no motor deficits observed in the upper extremities. Sensory examination reveals decreased sensation along the left arm, particularly in the distribution of the C5 - C7 dermatomes.
- **Hypertension:** Blood pressure measurements indicate elevated blood pressure levels consistent with hypertension.

**5) Diagnostic Workup:**

In addition to the clinical examination, diagnostic investigations are conducted:

- **Imaging Studies:** He undergoes cervical spine imaging, including X - rays to assess the extent of degenerative changes, such as disc herniation, osteophyte formation, and spinal canal stenosis. X - ray of Cervical Spine AP & Lateral View reveals loss of cervical lordosis and the presence of osteophytes in the C5 - C6 - C7 body reduction in the disc space.
- **Blood Tests:** Routine blood tests may be ordered to evaluate for any metabolic or inflammatory markers associated with cervical spondylosis or hypertension.

**6) Diagnosis:**

Based on the clinical presentation and diagnostic findings, He is diagnosed with cervical spondylosis, characterized by degenerative changes in the cervical spine leading to cervical pain and radiculopathy. The presence of hypertension is noted as a comorbidity.

**7) Therapeutic Intervention:**

Acupuncture treatment was initiated for a 40 - year - old male patient with persistent cervical pain and left arm radiation secondary to cervical spondylosis, compounded by a medical history significant for hypertension. The therapeutic intervention aimed to alleviate pain, improve functional outcomes, and potentially address associated hypertension symptoms.

**a) Assessment and Diagnosis:**

Before initiating acupuncture treatment, a comprehensive assessment was conducted to confirm the diagnosis of cervical spondylosis and evaluate any contraindications to acupuncture. Clinical examination, including range of motion assessment and neurological examination, was performed to ascertain the extent and severity of his condition. X - rays of the Cervical Spine A - P and Lateral view have been taken to confirm the diagnosis and assess for any structural abnormalities.

**b) Acupuncture Point Selection:**

Based on the principles of Traditional Chinese Medicine (TCM) and empirical evidence, specific acupuncture points were selected to target the underlying pathology and alleviate pain associated with cervical spondylosis. The acupoints chosen for his treatment included:

- **GB20 (Fengchi):** Located at the base of the skull, bilaterally, GB20 is traditionally used to relieve neck tension and headache, making it suitable for addressing cervical pain.
- **GB21 (Jianjing):** Positioned on the shoulder, GB21 is indicated for relieving shoulder and neck tension, making it beneficial for radiation pain in the left arm.
- **UB11 (Dazhu):** Located along the upper back, UB11 is targeted for its ability to tonify the muscles and tendons, thereby addressing musculoskeletal pain associated with cervical spondylosis.
- **LI4 (Hegu):** Found on the hand, LI4 is renowned for its analgesic properties and is often utilized to alleviate pain in various conditions, including cervical spondylosis.
- **LI16 (Jugu):** Positioned on the shoulder, LI16 is selected to relieve shoulder tension and pain commonly associated with cervical spondylosis.

**c) Treatment Protocol:**

Acupuncture sessions were conducted daily for a total duration of two weeks. Sterile, disposable acupuncture needles were inserted gently into the selected acupoints, using appropriate depth and angle, based on his individual anatomy and sensitivity. The needles were retained in place for 20 minutes per session to allow for sufficient stimulation and therapeutic effect.

**d) Monitoring and Adjustment:**

Throughout the treatment course, his response to acupuncture was closely monitored, with particular attention to changes in pain intensity, functional status, and hypertension symptoms. Adjustments to the treatment protocol, such as modifying needle insertion depth or incorporating additional acupoints, were made as necessary based on his progress and feedback.

**e) Patient Education and Self - Care:**

In conjunction with acupuncture treatment, he was provided with guidance on self - care strategies to optimize the therapeutic outcomes and promote overall well - being. This included recommendations for posture correction, ergonomic modifications, gentle stretching exercises, and stress management techniques tailored to his individual needs.

### 8) Follow - up and Outcome:

Following the completion of acupuncture treatment targeting acupoints GB20, GB21, UB11, LI4, and LI16 for acute pain management in cervical spondylosis, a 40 - year - old male patient with persistent cervical pain and left arm radiation, accompanied by a medical history significant for hypertension, demonstrated notable improvements in pain relief and functional outcomes.

#### a) Pain Reduction:

He reported a significant reduction in cervical pain intensity following the acupuncture treatment regimen. Before treatment, he rated his pain intensity as 8 out of 10 on the visual analog scale (VAS). However, after completing two weeks of acupuncture sessions, his pain intensity decreased to 2 out of 10 on the VAS. This substantial improvement in pain levels indicates a favorable response to acupuncture therapy.

#### b) Functional Improvement:

In addition to pain relief, he experienced improvements in functional outcomes related to his cervical spondylosis. He reported an increased range of motion in his neck and shoulders, as well as an enhanced ability to perform daily activities without experiencing debilitating pain or discomfort. These functional gains suggest that acupuncture contributed to enhanced mobility and overall quality of life.

#### c) Absence of Adverse Effects:

Throughout the acupuncture treatment course, he did not report any adverse effects or complications associated with the therapy. He tolerated the acupuncture sessions well, with no instances of discomfort, infection, or other adverse reactions. This underscores the safety and tolerability of acupuncture as a non - invasive therapeutic modality for acute pain management in cervical spondylosis.

#### d) Ancillary Benefit for Hypertension:

Interestingly, he also experienced a notable decrease in symptoms related to his hypertension during acupuncture treatment. While not the primary focus of therapy, this ancillary benefit suggests a potential positive impact of acupuncture on hypertension management. Further investigation into the mechanisms underlying this phenomenon is warranted to elucidate the potential role of acupuncture in managing comorbid conditions.

Overall, the follow - up assessment of the post - acupuncture treatment demonstrates favorable outcomes in terms of pain reduction, functional improvement, and absence of adverse effects. These findings support the efficacy and safety of acupuncture as a complementary therapy for acute pain management in cervical spondylosis, with potential additional benefits for associated comorbidities such as hypertension. Continued monitoring and long - term follow - up will be essential to evaluate the sustainability of these outcomes and inform future treatment decisions.

## 3. Discussion

Cervical spondylosis is a degenerative condition of the cervical spine characterized by pain, stiffness, and sometimes neurological symptoms such as radiculopathy.

While conventional treatments such as pain medications, physical therapy, and surgery are commonly employed, complementary therapies like acupuncture have gained attention for their potential role in pain management and improving functional outcomes<sup>3</sup>. In this discussion, we explore the efficacy and implications of acupuncture treatment targeting acupoints GB20, GB21, UB11, LI4, and LI16 for acute pain management in cervical spondylosis, based on the presented singular case report of, a 40 - year - old male patient with persistent cervical pain and left arm radiation, accompanied by a medical history significant for hypertension.

### 1) Efficacy of Acupuncture:

The reported reduction in cervical pain intensity and improvement in functional outcomes following acupuncture treatment in the patient is consistent with previous studies investigating the efficacy of acupuncture for cervical spondylosis. Acupuncture is thought to modulate pain perception by stimulating the release of endogenous opioids, neurotransmitters, and anti - inflammatory cytokines, thereby alleviating pain and improving functional status. The selection of specific acupoints, including GB20, GB21, UB11, LI4, and LI16, is guided by traditional Chinese medicine principles and empirical evidence suggesting their analgesic and anti - inflammatory properties. The observed pain relief and functional improvement in the patient support the potential utility of acupuncture as an adjunctive therapy for acute pain management in cervical spondylosis.

### 2) Mechanisms of Action

The mechanisms underlying the therapeutic effects of acupuncture in cervical spondylosis are multifaceted and may involve both local and systemic mechanisms. Locally, acupuncture stimulation at specific acupoints is believed to modulate neural pathways, including the release of neurotransmitters such as endorphins and serotonin, which exert analgesic effects and regulate pain transmission. Systemically, acupuncture may influence neuroendocrine pathways, immune responses, and autonomic nervous system activity, leading to systemic effects that contribute to pain relief and improved physiological functioning. While the precise mechanisms of action remain incompletely understood, the observed clinical benefits suggest that acupuncture exerts therapeutic effects through a combination of local and systemic mechanisms<sup>4</sup>.

### 3) Safety and Tolerability

The absence of adverse effects or complications associated with acupuncture treatment in the patient underscores the safety and tolerability of this therapeutic modality for acute pain management in cervical spondylosis. Acupuncture is generally considered safe when trained practitioners use sterile, disposable needles and adhere to appropriate standards of practice. However, individual variations in response to acupuncture therapy may occur, and close monitoring of patients is essential to detect and manage any adverse reactions promptly. The favorable safety profile observed in him supports the inclusion of acupuncture as part of a comprehensive, multimodal approach to pain management in cervical spondylosis<sup>5</sup>.

#### 4. Implications for Clinical Practice

The findings from this singular case report contribute to the growing body of evidence supporting the use of acupuncture as a complementary therapy for acute pain management in cervical spondylosis. Healthcare providers should consider acupuncture as part of a multimodal treatment approach for patients with cervical spondylosis, particularly those who may experience inadequate pain relief or intolerable side effects with conventional treatments. However, further research, including well - designed clinical trials and systematic reviews, is needed to elucidate the optimal acupuncture protocols, treatment duration, and long - term outcomes in cervical spondylosis.

In conclusion, acupuncture treatment targeting acupoints GB20, GB21, UB11, LI4, and LI16 demonstrates promising efficacy and safety for acute pain management in cervical spondylosis, as evidenced by the presented case report of the patient. The observed reduction in pain intensity, improvement in functional outcomes, and absence of adverse effects support the integration of acupuncture into comprehensive treatment plans for cervical spondylosis. However, continued research is warranted to further elucidate the mechanisms of action, optimize treatment protocols, and establish the long - term efficacy of acupuncture in this patient population.

##### **Patient Consent:**

The patient gave consent to publish this case report.

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