

## Case Report

# Relief of Shoulder, Arm, Forearm and Hand Pain Due to Left Subclavicular Cardiac Pacemaker Placement by Chiropractic Adjustments--A Safe and Rapidly Effective Strategy: Case Report

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### Abstract:

Unintended but common consequences of pace maker placement or insertion include shoulder dysfunction and pain. This is not something that cardiologist or electrophysiology specialist will be familiar with terms of treatment once these problems become manifest. Cross discipline collaboration as reported in this case resulted in the relief of discomfort caused by pace maker insertion induced shoulder dysfunction. This procedure was safe and rapidly affective.

### Introduction:

64-year-old male patient presented for evaluation of loss of left shoulder range of motion associated with pain and rapid muscle fatigue involving his left shoulder, arm, forearm, wrist and hand. Six weeks before presentation he had undergone emergency cardiac pacemaker placement for complete heart block. Pace maker inserted with only moderate typical complications of peri-incisional pain and swelling which resolved over the next week. The patient complied with instructions to initially immobilize his left upper extremity with a sling 24/7 for 4 weeks. Immobilization for the first 4 weeks was prescribed so as to prevent pacemaker lead displacement. After sling removal and resuming regular work duties the patient reported reduced range of motion and ever worsening pain from shoulder to hand. Muscle fatigue accompanied the pain. These symptoms frequently mandated he stop working on the computer, try stretching and even brief bedrest. Application of heat or ice with or without aspirin or acetaminophen did not improve symptoms. Blood pressures during episodes of discomfort ranged in terms of systolic pressures of 144-160 mmHg and when not in discomfort the systolic pressures were in the 120-130's. On physical examination after sling had been removed for 2 weeks his left acromial clavicular joint was noted to be rotated inward and downward. Use of heat or ice packs, massage, as well range of motion exercises did not result in improvement in symptoms in the office. Therefore, chiropractic manipulations were applied.

### Materials and methods:

These methods did not directly involve the pacemaker or the pace maker lead tunnel tract. The patient reported excellent initial symptom relief. He has required 3 weekly adjustments and now uses shoulder flexion and abduction finger wall walks to maintain his comfort and full work load without issue. He noted no cardiac symptoms such as bradycardia pre and post chiropractic manipulations and his cardiac pacemaker monitor,

Latitude-Communicator (Boston Scientific), revealed no adverse event.

The shoulder joint is a combination of the scapula, clavicle, vertebral involvement through the muscles attached to the scapula, and the sternum. The clavicle is key to this procedure because it was mispositioned or subluxated superiorly in this case. Although usually the clavicle is stable it can become rotated under specific pressures. This rotation either up or down can greatly affect the shoulder function and cause tightening of the musculature as well as joint motion restriction and shoulder pain. Upon evaluation of the patient it was found to be rotated superiorly and medially and was reset with inferior and lateral movement to its proper biomechanical position. This allowed better shoulder function overall. This pain was of a sclerodermic nature and was not neurogenic in origin as the presentations for sclerodermic vs neurogenic pain are significantly different.

The technique used to reset the position of the clavicle and its relationship to the sternum and acromial clavicular joint was facilitated by a tool commonly known as an activator. It uses a quick piston like single action movement in the direction of the practitioner's choice. In this case the activator was used to go laterally and inferiorly along the clavicle (see video). Most joints when slightly subluxated or misaligned want to return to the original position and go back into the proper movement dynamics which were there prior to subluxation. When given a therapeutic application of the activator in the right direction they respond well and move back into proper placement and relationship.

Once the clavicle is adjusted into place then a series of chiropractic adjustments and manipulations for the shoulder joint were applied. These included treatment for an anterior shoulder with stabilization of the posterior scapula with the right hand on the right scapula and left hand on the anterior glenohumeral joint/shoulder with a quick thrust posteriorly on the anterior portion of the left shoulder.

Another adjustment is made. The patient is asked to put their left hand on the left anterior superior iliac crest with the palm open and the thumb forward. The doctor using his left hand will place it on the anterior left shoulder. The doctor will take his right hand and arm and going through the space between the thorax and the patients left arm placing the doctors anterior right elbow on the patient's lateral left elbow interlocking the arms and stabilizing this position by taking the doctors right hand and holding the doctor's left arm. Then asking to patient to bring his left elbow straight back very quickly.

**Results and Discussion:**

This usually results in crepitus or cavitation in the glenohumeral joint and a resetting or repositioning of the joint. It is not a dramatic treatment, but with the combination of all these treatments the patient experienced noticeable improvement in their condition regarding pain and left shoulder range of movement.

**Figure 1**



**Figure 2**



**Figure 3**



**Figure 4**



**Figure 5**



## Conclusions:

The US population is on average living longer. Cardiac diseases requiring pacemaker implantation are more common with aging. The need for patients to continue working past previously considered norms for age of retirement is also growing. Keeping patients with cardiac ailments requiring pacemaker insertion more comfortable and maximally functional is important. Discomfort causes elevations in blood pressure, a key enemy to best possible cardiac care, and reduced physical activity with its attendant weight gain and deconditioning add to the difficulties with best medical care. The medical literature does not even list painful and dysfunctional musculoskeletal issues due to pacemaker placement as a complication of pacemaker insertion even though it is common knowledge among electrophysiology specialists. This case illustrates the use of chiropractic methods to improve medical care. Hopefully, more cross discipline coordination of care will continue so as to improve the health and fuller functional capacity of our aging population.

## Acknowledgements

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