

Treatment of Dorsal Pain with Intrafascial Injections

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ABSTRACT

The fascial system represents an intricate network within the human body, comprising both superficial, myofascial and visceral layers. Regional fascial dysfunctions can be related to overuse, trauma, sports activities, stress and posture. Fascial dysfunction has been associated with both diminished range of motion as well as regional pain. Unfortunately, these fascial lesions are not visible on ultrasound or MRI (yet). Glucopuncture, a novel injection technique, involves the administration of 5% sugar water injections to address both range of motion as well as pain. This article presents a 59-year-old female patient with back pain who underwent glucopuncture for dysfunction of the superficial fascia. She experienced significant pain relief (from 6/10 to 0/10) following glucopuncture into pain points found in the dorsal midline. This clinical case highlights the potential of palpation-guided glucopuncture as a simple, cost-effective method for modulating regional pain. However, further research is necessary to fully ascertain the efficacy and safety of glucopuncture for treating fascial pain. We also require more scientific data to explain how exactly these injections work.

Keywords

Fascia, Glucopuncture, Biotensegrity, Musculoskeletal Pain, Back Pain.

Introduction

The fascial system is an important but often neglected anatomical part of the human body. It is a complex network of connective tissue that runs throughout the entire body like a three dimensional spider web. Fascia contains a lot of nociceptors which may lead to musculoskeletal pain that does not match the medical diagnosis based on MRI or ultrasound. Dealing with such vague musculoskeletal pain syndromes can be challenging for both physicians and patients. Glucopuncture is a term to describe regional injections with sugar water 5% solutions. In this paper, we present a 59-year-old patient with dorsal pain who was pain free after five sessions into the superficial fascia. But clinical correlation is not always true causation. Therefore, more fundamental and clinical research is urgently warranted to confirm our findings.

Anatomy

The musculoskeletal system basically comprises myofascial system and bones. The myofascial system comprises both

contractile muscle and connective tissue [1-4]. Bones and muscles are obviously playing a basic role in both movement and posture [5]. But muscles and bones require ligaments, tendons and fascia to function properly in order to facilitate proper posture and fluent body movement [6]. Ligaments typically connect bone to bone and tendons connect muscle to bone, while the fascial system (FS) plays a more complex role. The FS connects dermis, muscles and even internal organs of the entire body into one complex network [7-11]. Especially in the last decade, it has become more clear that the FS is an important but often neglected anatomical part of the musculoskeletal (MSK) system (Table 1). The FS is like a mechanical and neurological “parallel system” which is literally present in the entire body. It has biomechanical properties (A) known as fascintegrity and biotensegrity and it contains an important nociceptive system (B) [12].

Table 1: Clinical Relevance of the Fascial System.

A: Musculoskeletal Dysfunction	Biomechanical qualities of fascial system
B: Musculoskeletal Pain	Nociceptive properties of fascial system

Treatment of Pain with Glucopuncture into the Regional Fascia

Glucopuncture is a term introduced to describe regional injections with sugar water 5% (S5W) into dermis, fascia, muscles and ligaments [13-15]. Injections can also be applied perineurally [16-18], into joint cavities or in the epidural space [19]. Typical injectates are glucose 5% in water (G5W) or dextrose 5% in water (D5W) [20,21]. Over the last decade, S5W injections have become more popular worldwide, although research in this field is limited [22,23]. Both palpation-guided as well as ultrasound-guided glucopuncture are applied [24-27]. Palpation-guided glucopuncture is mainly popular in remote areas of low income countries. Ultrasound-guided Glucopuncture is becoming more popular in hospitals worldwide, and is especially interesting to perform joint injections, perineural injections and hydrodissection [28]. In this article, we focus on patient-guided injections into pain points located in the superficial fascia. This novel approach can be an interesting option when addressing patients with vague pain syndromes where ultrasound and MRI are normal. Most clinicians are not aware of this (yet).

Clinical Case

A 59-year-old woman had pain in her back for 3 months. Her pain was described as 6/10 (VAS) in rest. During clinical examination, she explained her pain was located on the dorsal midline. On clinical examination, six pain points were found in the superficial fascia in the pain region (Figure 1). No muscular or ligamentous pain points were found. It was postulated that her pain originated from those fascial pain points. To test this hypothesis, she received a total of 6 mL (6 x 1 mL) of S5W in those pain points. Obviously, infection control was applied by skin preparation before injection (alcohol swabbing). The injections were given tangentially (at an angle between 10 to 30 degrees). A 27G needle was used to inject the superficial fascia (depth less than 0.5 cm or 0.2 in). She was told that she would need a series of several weekly sessions. After the first session, the pain was worse for 24 hours (from 6/10 to 9/10). There was also more stiffness in the injected area. Such a temporary worsening usually lasts 12 to 48 hours. Such a reaction is often observed when dealing with chronic pain patients, especially after their first session. The reason for this worsening is probably that dextrose stimulates tissue repair. It is referred to as the “reaction phase” and is considered as a positive sign. It is a good idea to warn the patient beforehand that this can happen. After two weekly glucopuncture sessions, her pain went down to 5/10 and 3/10 respectively. After five weekly sessions, her pain had disappeared completely (0/10). Follow up after two months did not reveal a relapse of her dorsal back pain. She did not take any oral pain medication.

Conclusion

Over the last decade, clinicians worldwide came to see that the fascial system interconnects different parts of the body like a three-dimensional spider web. The fascial tissue also contains a lot of nociceptors, which may explain its crucial role in vague musculoskeletal pain syndromes. Recently, it has been postulated that glucopuncture can regulate pain originating from fascial

lesions. This technique may be important in patients with regional pain with no obvious signs on MRI or ultrasound. This clinical case is an invitation towards colleagues worldwide to test the current hypotheses and design controlled clinical trials to check and confirm the efficacy, safety and legitimacy of Glucopuncture in modern medicine. On top of that, it is worth noting that these palpation-guided injections are easy and inexpensive to apply, making this approach especially interesting for doctors working in low-income areas for patients who have limited access to hospitals with high-tech facilities.



Statement of Informed Consent

Informed consent was obtained from the participants included in this case study.

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