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Treatment of Irritable Bowel Syndrome with Glucopuncture: A Case Report

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ABSTRACT

The fascial system represents a sophisticated and intricate network within the human body, comprising both superficial and deep layers. Fascial dysfunction is usually related to musculoskeletal pain, but may also be involved in other vague pain syndromes, such as irritable bowel syndrome. Glucopuncture, as applied in this case, involves the administration of 5% dextrose (or 5% glucose) injections directly into the superficial fascia, to address vague pain syndromes. This article presents a patient who underwent glucopuncture for the treatment of irritable bowel syndrome. Patients who complain about vague abdominal pain typically visit their family physician without a well-defined diagnosis. This case highlights the potential of patient-guided glucopuncture as a simple, cost-effective method for modulating abdominal pain caused by superficial fascial dysfunction. However, further research is necessary to fully ascertain the efficacy, mode of action and safety of glucopuncture for treating vague abdominal pain related to fascial dysfunction.

Keywords: Irritable Bowel Syndrome, Fascia, Glucopuncture, Regional Pain Syndrome

INTRODUCTION

Irritable Bowel Syndrome

Irritable bowel syndrome (IBS) is a functional gastrointestinal disorder with symptoms including abdominal pain associated with a change in stool form and / or stool frequency. The condition affects between 5% and 10% of otherwise healthy individuals and typically runs a relapsing and remitting course. The best described risk factors are acute enteric infection and stress. The pathophysiology of IBS is incompletely understood, but it is well established that there are often alterations in gastrointestinal microbiota and mucosal dysfunction.

Diagnosis of IBS

In most patients, diagnosis can be made on the basis of clinical history. Traditionally, the diagnosis of IBS relied on the positive identification of symptoms such as functional diarrhea, functional constipation, chronic functional abdominal pain, or bloating[1,2]. When alarm symptoms of colon cancer such as weight loss or rectal bleeding are present, a colonoscopy is applied first.

Treatment of IBS

The mainstays of treatment of IBS include patient education about the condition, dietary changes, stress management, probiotics, prokinetic agents, antispasmodics, neuromodulators, and biofeedback[3,4] In this clinical case, a completely new approach is presented which targets the regional fascia. It is still not clear if this new injection technique only addresses regional abdominal pain or if it also improves intestinal function.

The Importance of Fascia for Regional Pain Syndromes

The fascial system (FS) of the musculoskeletal (MSK) system links skeletal muscles, tendons and bones by forming a body-wide network of multidirectional myofascial continuity.[5] But the FS also encapsulates and connects internal organs, blood vessels and other fragile structures inside thorax, abdomen and pelvis. The fascial system itself consists of a complex network of several multidirectional sheets of connective tissue. The first network is found just below the skin and is referred to as the superficial network, the second one is the so-called deep network which encapsulates and connects muscles, organs, vessels, etc. (Table 1)[6,7]. Both networks are not two separate entities but deeply interconnected, which may explain the clinical findings while working only on the superficial layer.

Superficial Network	Subdermal
Deep Network	Muscles, Organs, Vessels

Table 1: Two Fascia Networks

Are Fascial Nociceptors an Overlooked Source of Pain?

The FS may appear passive but is more active than previously believed. The FS is not just an elastic packaging system for muscles and organs but also a richly innervated system[8,9,10]. The FS is recently described as the largest sensory organ containing 250 million nerve endings.[11] Fascial tissue contains a lot of proprioceptors and nociceptors, much more than, for example, muscle tissue[12]. In other words, pain assigned to muscular injury, may originate from the fascia which encapsulates that muscle. And in some patients, pain which was assigned to organ dysfunction, may in fact originate from the fascia which encapsulates that organ. The nociceptors in the fascial layer may indicate where there is an injury or inflammation in or near the fascia. The deep fascia has two major systems, the musculoskeletal fascia and the visceral fascia (Table 2). Both are interconnected into one large three-dimensional system.

Musculoskeletal Fascia
Interconnecting Fascia
Visceral Fascia

Table 2: Major Components of the Deep Fascial Network

The nociceptors in the musculoskeletal fascia are irritated when there is, for example, overuse, joint degeneration, inflammation or tendinopathy. Some physicians have defined it as fascial pain syndrome (FPS).[13,14] The nociceptors in the visceral fascia layers are activated when there is regional irritation, infection and / or inflammation. As the visceral fascia in, for example, the abdomen does not stop at the edge of one particular organ but continues along other organs in a complex and web-like manner, it is clear that the regional FS may lead to "vague" and complex pain syndromes in the abdominal area. Often, such pain patterns are referred to distant areas which seem unrelated at first sight. The complexity of this highly innervated fascial network may explain why patients with gall bladder stones report pain in the right shoulder blade, or patients with, for example, a stone in the ureter report pain in the ipsilateral groin. But most of the fascial pain patterns are regional. When dealing with IBS patients, the pain is usually in the same anatomical region as the intestinal tract. As there is often no direct correlation between the clinical picture of IBS and the findings on colonoscopy, MRI or ultrasound, physicians tend to describe these vague pain patterns as psychosomatic. More research is definitely required to clear up these matters. Anyway, it is clear that all these fascial nociceptors may be an important source of regional pain syndromes.

Treatment of Fascial Pain with Glucopuncture

Glucopuncture is a term introduced in 2020 to describe regional injections with low concentrations of sugar water 5% (S5W) into dermis, fascia, muscles and ligaments.[15,16,17,18,19] S5W injections can also be applied perineurally[20,21,22,23] into joint cavities[24] or in the epidural space.[25,26] Typical

injectates are glucose 5% in water (G5W) or dextrose 5% in water (D5W). Over the last decade, S5W injections have become more popular worldwide in the treatment of MSK pain, although research in this field is limited[27,28]. Both palpation-guided[29,30] as well as ultrasound-guided glucopuncture[31,32,33] are applied. Recently, more and more clinicians report interesting clinical outcome after S5W injections into the regional fascia for MSK pain[34,35]. When it comes to treatment of vague abdominal pain, this case presentation is probably the first in its kind. This article is an invitation to do more clinical research in this field.

CLINICAL CASE

A 73-year-old architect suffers from irritable bowel syndrome (IBS) for more than six months. At his first visit, he explained that he suffered from abdominal pain, bloating, abdominal distention and altered bowel movements on a daily basis. His complaints were typically worse in the mornings. His colonoscopy and ultrasound of the abdomen were normal. His gastroenterologist said he suffered from IBS and prescribed him ebastine (anti-histaminic medication). The patient took these for several months, without improvement. Then he was prescribed a pain killer (tramadol tablets), which gave temporary pain reduction. He was then prescribed nortriptyline, but he stopped taking them after one day because he did not want to take an antidepressant.

At his first visit, he was asked to point out the region where he suffered most of his abdominal pain (figure 2 and 3). It was hypothesized that he was suffering from fascial dysfunction. To test this hypothesis, he received several injections into the superficial fascia, exactly in his pain region (figure 4) with glucose 5% in water (G5W). He received about 9 subcutaneous injections of each 0.5 mL in the superficial fascia. The needle was positioned in a tangential manner. During the glucopuncture treatment, he did not take any medication prescribed by the gastroenterologist. During the second session a week later, he reported he was completely pain free for three full days after the regional injections of the first session. He then received a second session with the same protocol. At the third visit, he reported he was completely pain free during five days, and he received his third glucopuncture session. Follow up after this session illustrated no relapse of his complaints.

Fig. 1: Pain Region a

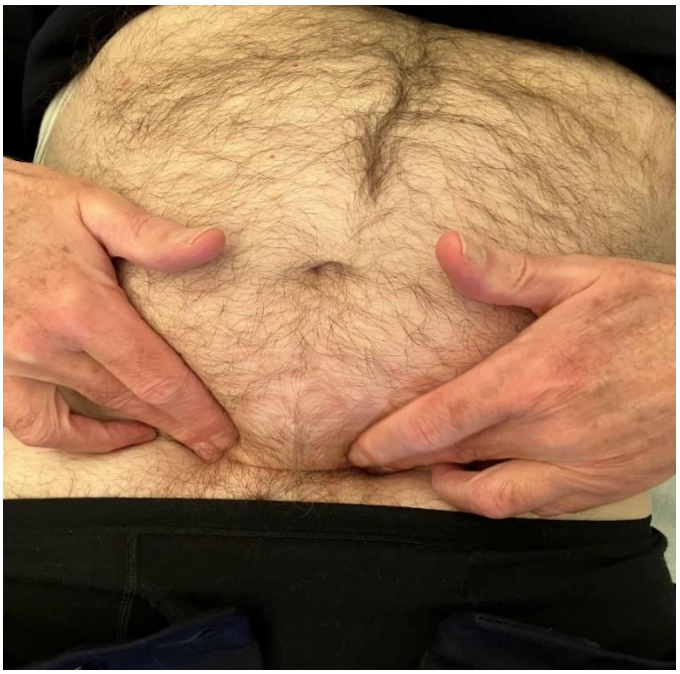

Fig. 2: Pain Region b

Fig. 3: Injection Sites in the Pain Region (a + b)

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. But fascia also contains a lot of nociceptors, which may explain its crucial role in vague pain syndromes, not only in musculoskeletal disorders but also in, for example, abdominal pain. In this publication, a patient is presented with long term abdominal complaints. Two weekly sessions of glucopuncture improved the complaints almost completely. We postulate here that the FS may be an invisible but crucial element in patients with vague abdominal complaints when there are no signs of a serious underlying pathology. It is obvious that more research is required to investigate to what extent the fascial system plays a role in the development of such vague

pain syndromes. It is also not clear yet how injections into the superficial fascia regulate the regional pain. This article is not intended to create an atmosphere of efficacy, safety and legitimacy where the scientific foundation of glucopuncture is still incomplete. The goal is sharing this clinical experience with colleagues worldwide so they can test this hypothesis themselves and design controlled clinical trials to check and confirm the efficacy, safety and legitimacy of glucopuncture in the treatment of IBS. These patient-guided injections are easy and inexpensive to apply, making this approach especially interesting for doctors working in low-income areas where patients have limited access to modern hospitals.

Statement of Informed Consent: Informed consent was obtained from the participant included in this case study.

Declaration by Authors

Ethical Approval: Ethical approval was not required because the present article is not a research work on human subjects but only a description of a specific treatment, as requested by the patient herself.

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