PLATELET-RICH-PLASMA: LIFE CARE PLANNING CONSIDERATIONS

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Introduction

Long-term pain management is a growing patient need. Because the extent and duration of pain management can often span a patient's person's lifetime, it is important for life care planners to understand the impact of treatment expense for inclusion in case evaluation. Many pain specialists rely on traditional methods of treatment, such as medication, injections, and therapies, but the use of new or emerging options are becoming more common. Platelet-rich plasma (PRP) therapy is a procedure that is gaining popularity. As the use of PRP grows, so does the need to better understand the treatment and its place in the work of life care planners.

Although platelet-rich plasma therapy may be growing in popularity, controversy plagues its use. Platelet-rich-plasma is considered by many to be an emerging pain management therapy without widely accepted indicators of effectiveness. This has led to access and payment complications for patients, health care providers, and billing professionals. Understanding the fundamentals of PRP, application techniques, patient benefits, and treatment billing is important for nurse life care planners evaluating cases involving PRP.

What is PRP?

For more than three decades, medical professionals have used PRP as a recovery agent following dental, orthopedic, and surgical procedures. Recently, it has expanded into many other fields of medicine in the quest for improved healing. Studies have shown PRP therapy to be effective for the treatment of tendinopathy, chronic tendon and muscle injury, and joint degeneration (Filardo et al., 2015; Fitzpatrick, Bulsara, & Zheng, 2016; Mishra, Woodall & Vieira, 2009). However, the efficacy of its application continues to be a subject of debate.

Proponents of the treatment maintain PRP capitalizes on the body's innate ability to cure itself. These advocates claim that employing a patient's organic matter – with the added benefit of low rejection risk – to stimulate natural, restorative healing should not be considered unconventional. Critics of the treatment attribute patient success stories to a placebo effect and view PRP as a marketing ploy and a means to influence unwitting patients. Although ongoing research studies evaluating PRP therapy may settle the efficacy debate in the future, the therapy has garnered enough support to make it a viable option for patients.

Medical professionals derive PRP from a predetermined measure of the patient's blood, which is then put through a process of centrifugation to generate a natural concentrate of autologous

growth factors. From the platelet's alpha granules, bioactive cytokines and proteins stimulate chemotaxis, cellular migration, proliferation, differentiation, and extracellular matrix production (Lyras et al., 2011). Additionally, these proteins promote the release of angiogenic growth factors contributing to tissue regeneration and healing (Alsousou, Thompson, Hulley, Noble, & Willett, 2009; Anitua et al., 2007). The main growth factors present in PRP are platelet-derived growth factor (PDGF), transforming growth factor β (TGF β), insulin-like growth factor (IGF-1), and fibroblast growth factor (FGF) (Wu et al., 2011). Clinically, PRP is an autologous blood product that can be non-invasively injected into an affected area of the body to activate healing through the delivery of PDGF.

Types of patients who benefit

A number of professional athletes have undergone PRP therapy to treat sports injuries, raising the profile of the procedure. Los Angeles Dodgers' pitcher Takashi Saito received PRP injections to heal an elbow injury prior to the 2008 major league baseball playoffs (Storrs, 2009). In the following year, professional national football league players Hines Ward and Troy Polamalu used PRP therapy for different ailments before their SuperBowl XLIII win (Storrs, 2009). Tiger Woods underwent post-surgery PRP injection therapy for his knee before participating in the 2009 PGA season (Storrs, 2009). Although the therapy had been around long before as part of regimens to treat various problems such as sprains and chronic tendon injuries, these professional athletes increased publicity for PRP as an effective treatment for sports-related injuries. Many athletes reported claims of a quick recovery and return to competition shortly after PRP therapy.

The results for athletes and non-athletes alike can vary due to factors such as overall patient health, the area of the body impacted, and whether the injury is chronic (long-term) or acute (short-term, yet severe) (Kelly, 2011).

Individuals with conditions affected by hypoxia – poor blood supply or low oxygen content – such as tendon and ligament tears, cartilage injuries, bone injuries, and even arthritis, often benefit the most from PRP treatment. This is because PRP helps create and improve blood flow in these hypoxic areas, subsequently prompting the body to improve stem cell supply – the body's natural repair cells – to the injury (Institute of Regenerative Medicine, n.d., para. 2).

In some cases, PRP therapy has reduced or negated the need for medication or surgery. Specifically, recent studies report compelling evidence of PRP therapy demonstrating more effective results than hyaluronic acid for knee osteoarthritis and hip osteoarthritis (Laudy, Bakker, Rekers, & Moen, 2015; Dallari et al., 2016). Also, for tennis elbow sufferers, studies have shown PRP to outperform local steroids for lasting pain relief (Mundla, Venkataramana, Koduru, & Ravindran, 2017).

Procedure

Preparation and Injection

As an outpatient procedure, PRP is administered by injection at the site of pain. As with the administration of any therapy, evaluation and diagnostic workup should occur. Since PRP originates from the patient's blood, there is a low risk of reaction. However, patients must still be made aware of potential complications, such as infection, bleeding, nerve damage, pain, or lack of desired result (International Cellular Medicine Society, 2011). As part of a surgical procedure, PRP injection may be integrated at the conclusion of an operation, or be a part of the follow-up regimen as prescribed by the physician. Whether performed as an inpatient or outpatient therapy for pain management, PRP is generally considered an elective treatment. Nevertheless, medical personnel are expected to follow standard practices and procedures when administering the treatment.

A dose of PRP originates from a small amount of the patient's blood, usually

Nursing Diagnoses To Consider

1) Impaired physical mobility (Domain 4, Activity/Rest, Class 2, Activity/Exercise)

2) Dressing self-care deficit (Domain 4, Activity/Rest, Class 5, Self-Care)

3) Impaired comfort (Domain 12, Comfort, Class 1, physical comfort)

4) Chronic pain (Domain 12, Comfort, Class 1, Physical Comfort

60 ml.. The drawn blood is placed in a specialized processing unit and spun at high speed to separate platelets from other blood cells. The extracted concentrate of platelets is then injected around or near the area of injury being treated. A physician or technician may use x-ray or ultrasound to guide placement of the injection.

Once injected, growth factors are released, triggering an inflammatory response lasting around three days (Kumar, 2005). The proliferative phase of healing may last several weeks, followed by a remodeling phase that leads to the formation and stabilization of mature tissue in approximately six months' time (Tate & Crane, 2010). The patient may experience mild pain or irritation at the application site for few days after the injection. Use of NSAIDs is discouraged until the patient heals, becomes pain-free, has achieved full function, or shows evidence of a plateau (International Cellular Medicine Society, 2011).

In some cases, a physician may request a patient limit weight-bearing activity or motion immediately after receiving the injection. Commonly, health care providers recommend the use of a cast, boot, or brace during the early, post-injection period. Patients may gradually return to regular physical activities up to one week after the injection. Return to full activity depends on how the body responds to the therapy and the recommendation of the physician.

Frequency of treatment

Based on the type of injury and a patient's documented initial response to the treatment, the physician may recommend additional injections. For treatments administered in a series, the number of injections typically ranges from three to five. The progress of the affected area typically determines the number of injections. However, if no improvement in symptoms is observed after the first or second treatment, multiple injections are often not recommended.

Case study: PRP Treatment for CRPS

John Doe is a patient that suffers from Complex Regional Pain Syndrome (CRPS). Often called Reflex Sympathetic Dystrophy (RSD), CRPS describes a condition of chronic pain often affecting a post-injury extremity. Prolonged or excessive pain characterizes the condition along with any combination of the following: changes in skin color, temperature, and swelling in the affected area (National Institute of Neurological Disorders and Stroke, n.d., para. 1).

Clinical management can be challenging in CRPS cases. In instances involving a lower extremity, allodynia frequently minimizes the patient's ability bear weight. Adaptive aids to ambulate may inadvertently reduce mobility and further contribute to worsening symptoms (Schwartz, 2015). Many patients manage the pain associated with CRPS with oral medications, sympathetic block intervention, restorative therapy, and other supportive methods (Lee & Cohen, 2008).

Mr. Doe was diagnosed with CRPS following surgery and therapy after an accident. Despite his post-operative pain, he was able to function normally with his symptoms controlled by various medical treatments. However, as time went on, the suffering became much more difficult to control. Over time, a progressive worsening of symptoms led to a perpetual cycle of medical provider visits and traditional treatments for chronic pain.

When visiting his pain management specialist, Mr. Doe presented with severe pain in his lower back with lower extremity radiation of symptoms accompanied by equally severe ankle pain. A prior intra-articular injection in the ankle had given him immediate relief, but that recovery was short-lived, and the symptoms returned. His pain management specialist listed impressions of traumatic arthropathy in the ankle, lumbar radiculopathy, and low back pain consistent with degenerative disc disease (DDD) and prescribed Voltaren gel for temporary treatment.

Eventually, results of an MRI of the lumbar spine with flexion and extension led to a series of selective nerve root blocks (SNRBs) to his lowest spinal segments with transforaminal placement of epidural corticosteroid. The SNRBs initially provided significant relief of his lower back and lower extremity symptoms. He underwent a course of physical therapy followed by adjustments to the low back, thoracic spine, and foot with a chiropractor. The chiropractic adjustments helped somewhat but the pain reoccurred.

Following a series of lumbar sympathetic plexus blocks added to SNRBs, Mr. Doe's doctor presented the option of platelet-rich plasma injections. Mr. Doe's condition had deteriorated considerably, necessitating the use of a cane or walker to stay mobile and minimize the pain caused by bearing weight or pressure on his hypersensitive areas. With some skepticism, Mr. Doe decided to undergo PRP injection treatment.

Upon receiving his first PRP treatment, Mr. Doe was astounded by the results. He was able to walk without his walker or cane and reported no back or leg pain and very little ankle pain. Several weeks later, he received another series of PRP injections as well as platelet rich plasma inhalation therapy. Mr. Doe reported that, with regular intervals of PRP injection treatment, he was able to walk, stop taking pain medications temporarily, and even saw improvement in lesion flare-ups from CRPS. Historical use of opioids in his treatment was mostly ineffective, and the PRP injections were the only therapy that brought him relief lasting anywhere from four to six months. Most of his healthcare providers recommended that he continue PRP injection therapy with his pain management specialist for lifetime treatment in mitigating his pain, necessitating the inclusion of the treatment in the regimen outlined in his future medical costs report.

Navigating Billing Codes

In addition to the controversy surrounding the use of PRP in medical field, there are also PRP-related billing debates. Understanding applicable standards and their variations can be particularly useful in code and cost research when creating a life care plan for a patient who has undergone or is a potential candidate for PRP treatment.

Compliance and medical coding experts outline multiple scenarios that observe different PRP coding approaches (TCI Supercoder, 2009). The first example involves orthopedic surgery followed by blood draw, centrifuge to prepare the PRP, and then site injection. Because the procedure involves multiple steps, it is logical to assume that the injection would be coded separately. However, most resources instruct otherwise and dictate that the platelet injection should be considered part of the surgery.

A second example handles the billing of PRP differently. It involves a case of epicondylitis treated with a PRP injection. In this instance, the blood draw and processing of platelets are coded as a separate procedure (86999, Unlisted transfusion medicine procedure) *in addition to* the injection code. While these particular examples illustrate references that may be considered acceptable alternatives, it is important to consult insurance or payer standards and guidelines (TCI Super Coder, 2009).

Examples of commonly misused codes used in billing for PRP therapy:

- 36513 (Therapeutic apheresis; for platelets)
- 86985 (Splitting of blood or blood products, each unit)
- 20926 (Tissue grafts, other [e.g., paratenon, fat, dermis])
- 20552 (Injection[s]; single or multiple trigger points[s], 1 or 2 muscle[s])
- 20610 (Arthrocentesis, aspiration and/or injection; major joint or bursa [e.g., shoulder, hip, knee joint, subacromial bursa])
- 36514 (Therapeutic apheresis; for plasma pheresis)
- 38230 (Bone marrow harvesting for transplantation).

Navigating billing codes related to PRP is getting easier. In July of 2010, the American Medical Association (AMA) introduced the code 0232T for Platelet-rich Plasma Injection in its Current Procedural Terminology (CPT®) catalog (Twetten, 2010). The code is listed as Category III in the CPT® catalog because it "represent[s] services considered to be emerging technologies within healthcare" (AMA, 2010). The code is used for PRP injection treatment administered in-office. The code bundles together all aspects of the procedure, including image guidance (such as x-ray or ultrasound), blood draw, harvest and preparation of platelet rich plasma, and the injection itself. Whether the patient is sponsored by insurance or paying directly out of pocket, the AMA recommends using code 0232T (AMA, 2010). Although there are individual codes for the procedural components of the treatment, those separate codes should not be used for PRP treatments administered in-office.

Although the AMA standardized a code for PRP injection, its use is not always consistent. Life care planners must still be cautious when evaluating or determining medical costs associated with PRP. Category III code classifications may be rejected by certain payer policies because they do not support experimental or investigational procedures. As a result, component CPT and Healthcare Common Procedure Coding System (HCPCS) codes might be used to convey PRP treatment. A novice biller without knowledge or experience in the PRP coding procedure might also use component CPT and HCPCS codes in error. Life care planners should seek the expertise of practiced coders using credible, standardized resources to determine the proper codes and their usage. The use of excess codes or promoting the use of codes that infer associations to PRP may lead to problems such as payment denial or even the discredit of cost research in reports such as a life care plan or reasonableness of medical bills assessment.

Conclusion

As platelet-rich plasma therapy becomes more prevalent for the treatment of pain management, life care planners need to be aware of the complexities surrounding the treatment, and the coding for billing associated with the treatment. Because PRP is considered to be a controversial treatment, understanding the debate surrounding the procedure can provide important insight and context. The ability to defend its value may be necessary when establishing a life care plan for a client. Life care planners educated on the benefits and the value the treatment are at an advantage when reviewing cases involving PRP. Just as important is the need to understand the billing codes associated with the treatment, which can aid in defending cost analysis and projection. The quality-of-life benefit to the patient receiving PRP is an important consideration when supporting the inclusion of this pain treatment in a life care plan.

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