Dynamic Chiropractic

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Adding Insult to Injury

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A 53-year-old male presented to an orthopedic surgeon's office with a complaint of right knee pain. The complaint had been the focus of a number of treatments over a 15-year period, including chiropractic adjustments, physiotherapy modalities, rehabilitative procedures, orthotics, medication, cartilage injections, surgery and custom bracing.

Despite all efforts, the patient's knee pain had become severe enough to prevent most activities and a genu varus deformity had developed. X-rays and MR scans showed significant joint destruction. With most options exhausted, patient and surgeon were in agreement that a total knee replacement was necessary.

Up to this point, everything was on track for the patient. But beyond this point, the patient's experience deteriorated in multiple ways at multiple points during the hospital stay and subsequent post-operative care.

Complications Ensue

Surgery concluded without complications. Following surgery, the patient's knee was bandaged, Elastic stockings were placed on both legs and the injured knee was wrapped in ice packs. The patient was transported to the recovery area for what should have been a two-hour period. Unfortunately, due to a lack of bed space, time in the recovery area extended beyond seven hours.

The ice packs used for postsurgical swelling were to be changed every four hours. Nurses in the recovery area were not prepared to replace ice packs, since they rarely have control of the patient's care beyond the first two hours after surgery. This resulted in a seven-hour gap between initial application and the first replacement. Swelling in the knee region was not controlled as a result of the delay.

Eventually, the patient was transferred to a room in the orthopedic ward, where the ice packs were replaced. Pneumatic compression boots were placed on the patient's feet to decrease the risk of blood clots.

The first night's stay was sleepless. The day after surgery, a nurse practitioner checked in on the patient. Following brief assessment, the nurse practitioner removed the drainage tube from the patient's knee.

The patient's pain began to escalate an hour after the tube was removed. The pain was located in the lateral aspect of the right knee and the medial aspect of the right foot. The patient's reports of increased pain were addressed with increased doses of pain medication administered intravenously.

Despite the increased pain medication, the patient's pain continued to escalate. The attending nurse seemed uncertain of the source of the patient's continued complaints and treated the patient as though he might be exaggerating his symptoms. The patient began asking that the pneumatic compression boots be turned off or removed because it was making symptoms in the foot worse.

The request was denied for fear of clot formation.

Why It Went Bad – A Theory

The patient developed his own theory related to the increases in pain at the knee and foot. The nurse practitioner who removed the drainage tube said he was removing it a little earlier than normal. Without the tube to remove excess fluid, the fluid began to accumulate in the wound. The surgical bandaging and elastic stocking were tight and would not allow expansion of the tissues to accommodate the buildup of fluid.

Pressure was building under the bandaging. This was reducing the blood flow to the lower part of the extremity. Additionally, the pumping action of the pneumatic compression boots was pumping the blood out of the extremity, interfering further with circulation.

The nurse and other hospital staff were not interested in the patient's theory. After 45 minutes of pain, additional medications and debate, the nurse finally cut the bandaging. The patient reported an immediate improvement in symptoms.

Just after these events, members of the physical therapy department entered the patient's room to assist the patient in learning to use a walker, help with his first walk and perform a stair climbing test. The goal of the stair-climbing test was to be sure the patient could climb the same number of steps in the hospital as the number of steps the patient would have to to climb to enter and exit his home once released.

More Complications

Unfortunately, the patient had not obtained enough pain relief between the episode of decreased circulation and the bandages being cut. This resulted in poor test performance and an additional night in the hospital. Had the physical therapy activities been delayed, the extra night could have been avoided.

The patient passed the therapy test the next day and was released. Prior to the test and release the patient continued to have significant knee and foot pain. The foot pain continued to be irritated by the pneumatic device and noticeable swelling and discoloration appeared at the ankle and foot. Foot pain, swelling and discoloration are not uncommon following a total knee replacement.

At home, the patient had limited mobility. A walker was required for ambulation and in home therapy was initiated. Therapy consisted of mild stretching and strengthening exercises with cryotherapy and pain medication.

While the knee progressed, the right foot complaint remained consistent. The patient's right toes became numb during symptomatic periods in the late afternoon and through the evening hours.

Chiropractic to the Rescue

During the second week at home, a chiropractic opinion regarding the foot condition was obtained. The diagnosis was a medial ankle sprain with secondary tarsal tunnel syndrome. Chiropractic adjustment of the foot and ankle were initiated in conjunction with cold laser therapy and in-home contrast baths.

Chiropractic care was successful in relieving the patient's pain. However, the ankle sprain remained a mystery. How did the patient obtain a medial ankle sprain that resulted in tarsal tunnel syndrome?

The day before the two-week follow-up visit, the patient discussed the foot complaint with the in-home physical therapist. During the discussion, the therapist, who had watched multiple knee replacement procedures, offered a theory behind the development of the condition.

He related that once the prosthesis is in place, the surgeon forcefully flexes the knee, shoving the heel toward the buttock. This is done to make sure the devise is stable and the knee has full range of motion. He suggested that the surgeon may have used the foot as part of the lever when forcefully flexing the knee.

The forced flexion using the foot as part of the lever may have resulted in forced eversion of the ankle, spraining the deltoid ligament. Swelling secondary to a medial ankle sprain has been known to produce congestion and compression of tarsal tunnel structures, specifically the tibial nerve.

Practice Relevance

This is a true story and it is relevant to chiropractic practice! The patient experienced multiple failures and poor quality of care throughout the replacement procedure and follow-up care. While multiple providers in different locations were involved, there is a commonality between their errors: No one took ownership of the patient. Everyone involved acted in an individual manner and not as a member of a team.

Ultimately, the responsibility for "owning the patient" rests with the doctor (surgeon). The doctor's lack of effort in coordinating, directing and monitoring the patient's care was the major factor leading to the poor quality of care received.

DCs must be aware of the potential for similar situations occurring in their practices. When a practice grows, staff changes occur, job descriptions evolve, staff and doctors develop the "It's not my job" attitude, office procedures change, etc. All practitioners must take charge to prevent important procedures and policies from falling through the cracks and dragging the patient along with them.

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