Case Study: Broken Ankle

I decided to do my case study on this patient for a variety of reasons, but the main reasons were the amount of time I spent observing her therapy and the great strides she made in recovery. The difference in her pain levels and functional levels from the day she came in to the day she was discharged were amazing. Many different techniques were used to decrease pain and increase her strength and flexibility. She is in her fifties and otherwise healthy. The injury was severe. The motion that occurred to injure the ankle was inversion, which is the most common motion that occurs with injury to ankles. It is often called “rolling” your ankle, and can result in the sprain of the Anterior Talofibular Ligament or in this case she actually broke her ankle in three places. She stayed in the hospital three weeks.

The first thing that is done with every patient that comes to physical therapy is an evaluation. The specific testing done depends on the injury or condition the patient is facing. There are many different types of tests performed to get the best possible understanding of the situation. Subjective testing is done to get the patients’ description of how the injury/condition affects their everyday life and activities that they do under normal circumstances. Objective measurements are also taken to measure the patients’ range of motion in the affected area as well as many unaffected areas, e.g. – the uninjured ankle. Manual Muscle Testing is also done to test the strength of the patient in certain anatomical areas, and most of these tests isolate the muscles that perform a certain motion. In this case the weakest motion was ankle dorsiflexion, and that was expected with the nature of the injury. From the first moment she walked in our patient made it clear that she was in a great amount of pain. Once the tests were complete the therapist came up with a plan of care and the appointments were scheduled. It was decided that our patient would need to come to therapy three times a week for one hour sessions during a four week period and at the end of that period she would be reevaluated to test the progress made.

The tests revealed that the patient had very poor balance, weak ankle/foot flexors, and little stability in her ankle joint. To remedy the poor balance the therapist wanted to train the proprioceptors to do their job. The technique used is called “Snapp” named after the inventor of the procedure; Ed Snapp. Snapp is a series of deep pressure and pressure stroking maneuvers along the nerve patterns of the entire body that’s done with the patient in a prone position and it builds the neuropathways to the brain. The body then does a better job of knowing where joints are in space; proprioception.

The next Monday our patient came in for her first treatment, and the therapist’s plan was to reduce the pain as much as possible then build strength while increasing flexibility through an exercise plan she had built specifically for this patient. Every
patient that came to Partner’s in Physical Therapy had a unique exercise program built just for them through a program on the computer that the therapist used along with their knowledge to strengthen the weak problem-causing muscles of a patient. We began the first day doing ultrasound to reduce pain and inflammation and then performed the Snapp program on her. With nearly every treatment a modality is first performed to reduce any pain and inflammation on the affected area of a patient to relax the tissue so the therapist can make adequate progress. If the area was painful or inflamed it would be very difficult if not impossible to do what is necessary to improve the underlying condition. For the first week our patient came in and had ultrasound along with the Snapp program each day, and she told us that with each visit she really felt a positive change in her balance and coordination.

To begin the second week we continued the Snapp program but also taught the patient some exercises that strengthened the entire ankle joint (not just the dorsiflexors), but did focus on the dorsiflexors. These exercises were also designed to increase the flexibility of the joint. She did not enjoy them at first because they caused some pain but it was bearable. We instructed her that the more she stuck with her home program the better her progress would be and that would mean a quicker return to her everyday activities. With each treatment she was asked to inform us of the progression or regression of improvement and during the whole period of treatment she only regressed slightly once because she didn’t do her home exercise program for four days in a row.

As therapy continued into the third and fourth weeks we began doing balance drills with her which directly challenged the proprioceptors that we hoped to build up. She was a little shaky the first couple of times but the improvement came quickly and was quite dramatic. We started with her eyes open on a solid surface (floor) and practiced that until she became proficient. To be proficient she had to stand balanced on one leg for thirty seconds. The next step in the ladder was to stand with her eyes open on a soft/unstable surface. This was accomplished using a TheraBand pad which was designed specifically for this purpose. To improve her balance the patient was instructed to practice balancing on a pillow at home because it was about the same and that way our patient would have the opportunity to make more progress in a shorter period of time. Once this situation was mastered with her eyes open we went back to a solid surface (floor) but made her close her eyes so she could not depend on her vision to maintain balance. The three systems used in balance are vision, proprioception, and the vestibular system. Often we develop a dependence on our vision and the proprioceptive neuropathways become weak. At first this task was very difficult for our patient but she made steady improvement. Before she could get to the unstable surface with her eyes closed it was already time for her re-evaluation because the four weeks of treatment were up. To help her continue improving we taught her more advanced exercises and instructed her to balance on a pillow with eyes closed to further improve her proprioception.

Upon re-evaluation the results were phenomenal. In all categories including functional, objective, and subjective testing huge improvements were made during the four weeks of therapy. At the initial evaluation our patient had 0 degrees of dorsiflexion
at the injured ankle and at the final evaluation she had 6 degrees of movement. In the initial evaluation our patient was reluctant to test her muscle strength but she achieved the maximum score possible for strength in the re-evaluation. In the beginning her maximum pain level was a 9 on a ten point scale and her minimum pain level was a 0 so the pain was not constant. After the period of therapy her maximum pain level was a 2 on the ten point scale and most of the time there was no pain at all; 0/10. Her balance was dramatically improved over the treatment sessions as well. In the initial evaluation she could not balance at all on her injured leg. At the end of treatment she measured above average on the injured leg and excellent with the uninjured leg. The icing on the cake for her was the subjective/function al improvements made. After the four weeks of treatment our patient was able to take an evening walk with her husband and their dog everyday just as she had done before the injury, and there were no activities from her everyday life that she had not returned to.

I really enjoyed the experience of working with this patient. She was very motivated and gave feedback on everything which made it easy for the therapist to do their job. I also enjoyed the time spent at Partner’s in Physical Therapy. They are very professional and are devoted to teaching their employee’s and intern’s everything they can about the field as well as educating the patients on the activities/procedures being performed in every situation.