Spinal Accessory Nerve Palsy

What is a nerve?

A nerve acts as a pathway for messages to travel throughout the body. Nerves connect the brain and spinal cord to other parts of the body and organs. Cranial nerve XI (eleven), also known as the spinal accessory nerve, controls the sternocleidomastoid and trapezius muscles:

- The sternocleidomastoid muscle helps turn your head.
- The trapezius muscle manages shoulder movement, such as the action of shrugging your shoulders. The trapezius muscle is important for stabilizing the scapula (shoulder blade) to allow a strong base for use of the arm.

What is Spinal Accessory Nerve (SAN) Palsy?

Palsy is another word for paralysis. Paralysis is often linked with weakness and loss of feeling. Cases of spinal accessory nerve (SAN) palsy in head and neck cancer patients are most often caused by cancer treatment, including surgery and radiation.

Injury can happen to the nerve during surgical treatments, such as lymph node biopsies or neck dissection. In some types of neck dissection, the nerve may be removed completely. If the nerve is only traumatized, it can recover over 4-12 months after surgery. If it was cut or removed, it will not recover on its own. The trapezius muscle cannot be strengthened unless the nerve functions to activate the muscle.

In SAN palsy, the nerve does not work properly, which affects how the sternocleidomastoid and trapezius muscles work. Because the muscles are not being used, they atrophy or waste away. The shoulder will become depressed (drop down) and move forward. This makes it hard for the patient to raise the arm on the affected side. This lack of range in motion can lead to further complications and pain.

Long-term, SAN palsy can lead to:

- Loss of muscle function.
- Adhesive capsulitis (frozen shoulder).
- Rotator cuff impingement.
- Pain.

All of these side effects can greatly affect your activities of daily living and quality of life. It is important that after surgery or radiation you start a treatment plan to manage SAN palsy.

How is SAN palsy treated?

There is no standard treatment for patients with SAN palsy. It is often an overlooked side effect. The best outcomes occur in patients who receive treatment early. The following treatments can be used alone or together:

- Physical and occupational therapy can help strengthen other muscles of the shoulder to help make up for the loss of function of the trapezius. Exercises are also used to regain range of motion, which improves function and decreases pain.
- You may also be fitted for a brace that can stabilize your scapula. This brace is used to improve posture, promote range of motion, and decrease pain.
- Some cases of SAN palsy may require surgery. Some of the surgeries used include repair or replacing the SAN nerve.
with other nerves, or attaching the scapula to your ribs or vertebra.

While being treated for SAN palsy it is important to manage your pain. Speak to your provider about your pain and together you can make a pain management plan. Applying heat or ice in an area where radiation has been used or where you have lost feeling in the skin after surgery is not recommended, due to the risk of a burn or swelling.

If your treatment plan involves radiation and/or surgery, make sure to speak to your provider about the risk for SAN palsy and methods to treat this side effect.