

Axillary Web Syndrome

A number of patients who underwent axillary lymph node dissection (ALND) in combination with breast cancer surgery experience postoperative pain and limited range of motion associated with a palpable cord of tissue extending from the axilla into the arm on the same side.

This condition is known as Axillary Web Syndrome (AWS), or Cording Syndrome is little known in the medical field, and I am happy to publish an article on this condition written by a long-time friend and colleague, Linda Koehler. Linda is an expert in this field and also covered this topic extensively in the latest edition of my textbook "Lymphedema Management". I am very proud to have Linda contribute as she is also one of my previous students.

Axillary Web Syndrome (i.e. 'cording')

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Description and Symptoms

Axillary web syndrome (AWS) is a condition which appears following cancer surgery with axillary lymph node removal (i.e. breast cancer or melanoma).^{1,2} AWS usually occurs within 2-4 weeks following surgery though it has also been identified in patients months to years after surgery.³⁻⁵ The incidence of AWS ranges from 6-72%.^{1,3} AWS appears as a cord of tissue just underneath the skin located in the axilla (i.e. armpit) and may run down the inside of the arm towards the elbow. It sometimes extends down as far as the hand near the thumb and also has been identified along the side of the trunk underneath the arm. Restrictions in movement and pain often accompany this condition. The cord becomes tight with movement of the arm especially with shoulder abduction (bringing the arm out to the side). If the cord runs down the arm, elbow extension (straightening the elbow) and wrist movements can also be limited in addition to restricted movements of the trunk.



A person with AWS tends to experience pain and pulling sensation with movement of the arm especially shoulder abduction because this movement puts tension on the cord. There is usually little to no pain when the arm is at rest. It is common for a person to have good movement in the arm following surgery but then movement becomes limited and painful when the AWS cord begins to develop. The sudden onset of pain and limited movement may lead to anxiety and stress in someone who is already dealing with a cancer diagnosis. AWS appears to occur more

often in people who are slimmer for reasons unknown.^{1,3} It is speculated the cord is easier to identify in a person with a slim build because there is less fatty tissue to conceal the cord. It is possible AWS is present in obese patients, but the cord is not detectable because it is covered by fatty tissue. Another theory is the cord may not be able to adhere to fatty tissue therefore is less likely to occur in patients who are heavier set.

Physiology

The cause of AWS is still unknown but appears to be associated with lymph node removal therefore having a possible lymphatic involvement. The literature reports there is a higher incidence of AWS and a more extensive AWS cord with a higher number of lymph nodes removed.¹ The AWS cord appears to extend further down the arm in patients with more lymph nodes removed. It is speculated the cord is caused by a blockage in a vessel, lymphatic or venous, or by tightness in the surrounding tissue.^{1,3} Biopsies of the cord have identified it as being a vessel, both lymphatic and venous, with more evidence suggesting lymphatic vessel involvement.^{1,5,6} More research is needed to identify the underlying cause and physiology of AWS.

Therapeutic Approach

Some people believe AWS completely resolves on its own within about three months after surgery therefore treatment is not necessary.¹ Others believe the cord may not completely go away which may lead to long term movement restrictions and functional problems.^{5,7,8} It appears treatment to the AWS cord may improve movement and reduce pain sooner than no treatment.^{4,5,9}

Pain medications such as non-steroidal anti-inflammatory drugs (NSAIDS) may be recommended dependent on the amount of associated pain.¹⁰ Since pain is often experienced with certain movements, some patients will avoid moving the arm. Lack of movement could lead to other problems such as soft tissue tightness and joint problems therefore avoiding movement is not recommended. Movement of the arm is encouraged but minimal to no pain should be experienced during the movement.

Rehabilitation treatment such as physical therapy has been used to treat the movement restrictions caused by the cord.^{4,5,7,9,11-13} The techniques include gentle stretching of the cord and surrounding muscles and soft tissue to improve movement. Manual techniques have been described as skin traction, cord bending, myofascial release, soft tissue mobilization, and scar releases. Gentle manual techniques are recommended to avoid lymphedema or reddening of the skin. At times, the cord has been reported to break with manual techniques which results in an immediate increase in movement. The breaking of the cord may be felt and heard by the patient and/or therapist. It is unknown what is actually breaking but it is speculated it could be the cord or the supporting tissue around the cord. It doesn't appear there are any negative effects from breaking the cord since the patient sustains the sudden gain in movement. It is highly recommended therapists should be cautious when using manual techniques and avoid being too aggressive. Breaking of the cord is mentioned only to inform patients and medical professionals

about the possibility of the cord breaking with gentle manual techniques. It is not recommended aggressive treatment techniques be used to purposively break the cord.

Further research is needed to fully understand the phenomenon of AWS, the physiology, and treatment.

References:

Video: <http://www.youtube.com/watch?v=DhseruhnMUc&feature=related>

Video: https://www.youtube.com/watch?v=oC1IA39IC_k

Video: <https://www.youtube.com/watch?v=votn4KVgGxI>

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