

TIMOTHY J. JOHANS, M.D.
NEUROLOGICAL SURGEON

6140 W CURTISIAN, SUITE 400
BOISE, IDAHO 83704
TELEPHONE (208) 367-3500
FACSIMILE (208) 367-2968

3875 E OVERLAND ROAD
MERIDIAN, IDAHO 83642
TELEPHONE (208) 367-3500
FACSIMILE (208) 367-2968

ANTERIOR CERVICAL DISCECTOMY AND FUSION

INDICATIONS:

The indications for this operation really boil down to three things:

1. Pain in the arm that is becoming unbearable.
2. Numbness in the arm or hand.
3. Weakness in the arm or hand.

Notice that I did not mention neck pain as a true indication for doing this operation. Commonly neck pain is improved from the surgery but all by itself, I do not consider it a freestanding indication for this operation.

GOALS:

The real goals of the operation are simply to decompress the nerve roots and the spinal cord at the affected level. The hope is that by releasing the pressure on the nerves and/or spinal cord that the pain down the arm will be diminished or be eliminated, and this should maximize your potential to regain function in the nerve root and/or spinal cord. There are no guarantees that you will get your function back but it does maximize your potential to do so. It certainly should prevent any further loss of strength or sensation in the arms or from spinal cord compression.

PROCEDURE:

The basic operation is an inch-and-a-half long incision on the front of your neck on the right side. I dissect down to the disc space. I will remove the disc that is pressing on your spinal cord or nerve root and if there are any bone spurs those too will be removed. When I am finished with this part of the dissection, there will be no pressure on your spinal cord or nerve roots at that level. When I am finished with the neurologic decompression, I move on to the fusion aspect of the operation. This will entail using a small spacer made out of a manmade material called PEEK, which serves as the spacer. The spacer looks like a thin-walled doughnut, which is custom shaped and fitted for your residual disc space. I will then take the bone chips that I removed from your disc space, insert those into the PEEK intervertebral device, and insert that into your disc space. The spacer itself holds the bones in their proper normal anatomic position and the bone that I put within it will become the bone that will fuse the segment. Lastly, I will use a titanium plate and screws to hold the bones in proper normal anatomic alignment. I then close with three layers of stitches with a plastic surgery final closure.

RISKS:

The risks of this operation include but are not limited to the following:

1. Risk of bleeding. My average blood loss is less than one ounce and I have never had to give a transfusion in my career for this operation. Over the last 20 years, I have operated on perhaps 5,000 levels and again I have never had to give a transfusion a single time.
2. Infection. The national average for an infection for an American Neurosurgeon is about 3%. I have had one in my career so I have been very blessed with an extremely low infection rate.

3. Stroke or death. These are both primarily anesthetic complications and I have never had anyone have a stroke or die during one of these operations but is a possibility anytime anyone undergoes general anesthesia.
4. Cerebral spinal fluid leak. This is an extremely rare possibility which has happened twice in my career. It is a complication that is rare but difficult to handle but has never caused any long-term issues with my patients.
5. Voice change. This surgery does not injure a patient's vocal cords. However, the nerve that goes to the vocal cords is always stretched during this operation. About 15% of people wake up with a breathy or hoarse voice generally due to the endotracheal tube. However, nationally 1% of people have a permanent voice change because of permanent injury to the nerve that goes to the vocal cords. I have had one patient in my career with a permanent voice change. Generally, the ear, nose, and throat doctors can repair this.
6. Lack of fusion. Smoking greatly diminishes your ability to fuse as does age and multiple levels. Just like any bone that has been for example broken and has been reset such that we want it to fuse, a secondary injury to that area diminishes and can disrupt the fusion process. Consequently, for the first three months or so after this operation, you have to be particularly careful not to reinjure your neck. That is why we use the cervical collars to help prevent that and we encourage you not to do risky activities such as ladders, roofs, bicycles, or anything where you can fall and hit your head and disrupt the fusion process. Nonsmokers who are young have a fusion rate of greater than 98%. The plate and screw system that I use greatly improves fusion rates for both smokers and nonsmokers. On patients who have multilevel fusions and/or smokers or those with other metabolic diseases, I may recommend a bone stimulation collar to help promote fusion.
7. Hardware failure. The modern-day hardware is titanium and it is very high quality with extremely low risk. However, very rarely a screw might back out that may require replacement. Occasionally because of soft bone, a patient's bone can collapse requiring a subsequent surgery. However, there is no possibility of a recurrent disc herniation at this level.
8. Spinal cord injury. During this operation, I literally touch your spinal cord and the dura or sheath around it multiple times. Therefore, there is a risk of damaging your spinal cord. If that should occur, I could cause you to become a quadriplegic with loss of bowel, bladder, or sexual function and all movement below your neck. I have never damaged a spinal cord in my career but it can happen.
9. Nerve root damage. Because I will be operating on both sides of your neck and decompressing both nerve roots, that is the one that goes down your right arm as well as the one that goes down your left arm, I could injure either one. If I damage those nerves, I could cause you to have permanent pain, numbness, tingling, and weakness down the arm. That is a very rare complication in my experience and I do everything I can to avoid that from occurring but that is a potential possibility.

I know these potential risks and complications are frightening and indeed, if they occur they are very serious. However, I want you to recognize how rare they happen in my hands and I think you should feel confident that we can do this surgery very successfully. The operation itself does not hurt very much and generally speaking, you will be able to go home the next morning. I do not use a catheter in your bladder during the operation. If you want more information on this procedure, please visit my website at www.timjohansmd.com.