Steroid Injections for Subglottic Stenosis

What is subglottic stenosis?
Subglottic stenosis is narrowing of the breathing passage below the vocal folds. Subglottic stenosis causes shortness of breath during times of exertion. Subglottic stenosis can cause noisy breathing during inspiration.

What causes subglottic stenosis?
- Scar formed from an endotracheal tube
- Granulomatosis with polyangiitis is a condition of inflamed blood vessel.
- Other autoimmune or inflammatory diseases like relapsing polychondritis
- Trauma to the front of the neck
- Idiopathic is a diagnosis made if there is no obvious cause. Patients with idiopathic subglottic stenosis are often young females aged 25-50. This is the most common type.

What are symptoms of subglottic stenosis?
- Shortness of breath during exertion and sometimes at rest
- Noisy breathing, also known as stridor
- Cough
- Voice changes
- Feeling of phlegm "stuck" within the airway

What is a subglottic stenosis steroid injection?
The procedure is done in the office without sedation. Patients can drive themselves home and wear standard clothing. It is done in an ENT clinic room. A camera is passed through your nose to look at your voice box and the wind pipe (trachea). Steroids are injected into the area of inflammation. Steroids are medicines that reduce inflammation. The process is designed to improve your airway over time by precisely injecting anti-inflammatory medicine to the problem areas of the airway narrowing.

How long does it take?
Your visit is usually 30 minutes but the procedure takes only a few minutes. The rest of the 30 minutes is spent on safety checks. We will explain the process and the risks and benefits. We will give you helpful tips and suggestions so everything goes well.

Does it hurt?
Most people do very well and tolerate the procedure without difficulty.

Will my breathing be better right after the injection?
No. The steroids work over time. Your breathing will likely feel limited for 24-72 hours after the injection. It may take weeks to notice a difference in your breathing effort. Some patients do not feel a difference until they have had multiple injections.
How do I get ready?

- You must not eat or drink anything for 3 hours before the injections. This includes water, coffee and juices.
- It is important for you to tell us if you are taking blood-thinning medicines such as Warfarin (Coumadin), aspirin (even a baby aspirin), or Plavix. You must discuss with your primary care provider if stopping these medicines for 3 days before the treatment is OK.
- Do not take anti-inflammatory medicines such as Advil for 3 days before or 2 days after the injections. These medicines can cause bleeding which may complicate the treatment outcome. You may use Tylenol.
- If you have diabetes, you may need to adjust your insulin because you will not eat right before the treatment. Please talk to your primary care provider about the best way to do this. Do not take oral hypoglycemic medicine the morning of your treatment. Bring your blood sugar monitor to the clinic with you so that you can check your blood sugar before the treatment. If you have symptoms of low blood sugar (feeling clammy, weak, faint) you can drink orange juice or suck on a hard candy.
  - If you have diabetes, please monitor your blood sugar closely after the injections. The steroids may increase your blood sugar for a few days. Please work with your primary

What happens right before the procedure?
Before the injection procedure, the nursing staff will review your recent medical history and go over your allergies, medicines and pregnancy status. You will fill out forms about your symptoms. The staff will all introduce themselves so you know who is helping you. There is usually a nurse, a medical assistant, ENT residents, and sometimes medical students or other doctors who are learning from the doctor doing the injection. All team members are important and have a role. All are interested in your good outcome. Your doctor will go over the consent form and the procedure to be done.

What is the preparation like right before the procedure?
Staff will give your time-tested tips and suggestions on how to focus on breathing, relax your muscles and help you have a smooth procedure. Medicine will be applied to your nose and you will breathe topical lidocaine through a nebulizer to help to numb your throat. This takes about 4 minutes. Then a camera will be passed through your nose to examine your vocal cords and apply small amounts of additional lidocaine while you say “ee”. This will make you cough a little, but the cough will go away. Your throat will feel strange at this point – this is normal and anticipated. That strange feeling lasts 45 minutes to an hour and then will go back to normal.

What happens during the procedure?
- The camera will stay in your nose while a very thin tube with a tiny needle is passed through the camera. The doctor will see the area to be treated on a monitor. They will give injections thru the tube directly to the areas of inflammation. The doctor will tell you how much time is left and also reiterate the tips and suggestions for a smooth procedure. The care provider if you have questions on managing your diabetes.
What happens after the procedure?
You will be asked questions about any pain you experienced before, during and after the procedure. You will then head to the front desk to schedule follow up appointments and will get printed instructions for home care.

What about pain relief?
You may have throat pain or discomfort after the numbing medicine wears off. Most patients take Tylenol for pain relief. You may also get pain relief from sucking on ice chips or drinking ice water.

What about activity?
Avoid strenuous activity or exercise for 1-2 days after the injection.

What about my diet?
You may resume your normal diet after the numbing medication wears off. Drink plenty of fluids. It may be better to avoid spicy foods for 2-3 days.

What can I do about the thick mucus in my throat?
- Drink water throughout the day.
- You could try guaifenesin. You can purchase this medicine over the counter if your insurance does not cover it.
  - Dosing: One 600 mg tablet twice daily.
- Some of our patients with idiopathic subglottic stenosis have found benefit from taking N-Acetylcysteine (NAC) to thin out the thick mucus and reduce cough. NAC is a drug that breaks down mucus, the substance that lubricates many parts of the body such as the mouth, throat, and lungs. NAC can be found in certain pharmacies in the supplement section. If your pharmacy does not carry it, talk with your pharmacist to see if it can be acquired.
  - Dosing: Take one 600 mg tablet once per day.

When do I call the doctor?
- You have pain that doesn’t go away with Tylenol and the suggestions above.
- You cough up bright red blood or clots
- You have trouble breathing: if you have trouble breathing go to the nearest Emergency Department or call 911.

Phone numbers:
ENT (Otolaryngology) Clinic, Monday to Friday 8 am to 5 pm: (608) 263-6190. After hours, you will be connected to the paging operator. Ask for the ENT (Otolaryngology) doctor on call. Give your name, date of birth and phone number to the paging operator. The doctor will call you back.
If you live out of the area, call: 1-800-323-8942.