



What six things did we learn about airway stenosis and its treatment during 2022?

Living with idiopathic subglottic stenosis (iSGS) support community:
www.facebook.com/groups/airwaystenosis

What we learned

1. Chronic inflammation in subglottic stenosis continues to be studied



Reading:

Luke J. Pasick, Mursalin M. Anis, David E. Rosow
An Updated Review of Subglottic Stenosis: Etiology, Evaluation, and Management.
Current Pulmonology Reports, February 2022; 5
<https://doi.org/10.1007/s13665-022-00286-6>

Previous research identified the presence of interleukin 23 and 17A (IL-23/IL-17A) in iSGS patients. These are responsible for mounting an immune response (inflammation) to bacterial and fungal infections.

That they are present in the airways of people with subglottic stenosis suggests there is potentially an immune response contributing to the stenosis, which could be potentially inhibited through immunotherapy (eg via drugs such as Rituximab, Cellcept, Everolimus and Methotrexate).

It is still not known what triggers the disease to occur in the first place among idiopathic patients.

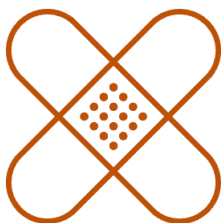
Research is continuing.

What this means

More research is needed to understand whether inhibiting IL-23/IL-17A via immunotherapy can help. Initial studies among some populations are showing promising results for some patients.

What we learned

2. Thought to be dysregulated wound healing that promotes growth of scar in airway



Reading:

Delaney J. Carpenter, Osama A. Hamdi, Ariel M. Finberg, James J. Daniero **Laryngotracheal stenosis: Mechanistic review.** Head & Neck. 2022;1–13.

[DOI: 10.1002/hed.27079](https://doi.org/10.1002/hed.27079)

It is suggested that atypical wound healing processes contribute to iSGS.

A literature review points to several elements contributing to this:

- Inflammatory markers – including IL-23/IL-17A (see above)
- Laryngopharyngeal reflux – ie stomach acid which reaches your airway – some studies support its impact while others disagree – most suggest it is an irritant rather than causal
- Microbiology – a distinct form of Mycobacterium (bacteria) was found in the airways of iSGS patients (not in healthy airways) – though whether it is the cause of iSGS or there because of iSGS it is not known

What this means

There is a need for further research, potentially a larger scale, and each area could potentially involve some drug trials in the future.

It is likely it is a mix of issues which will need to be addressed to truly slow the progress of iSGS.

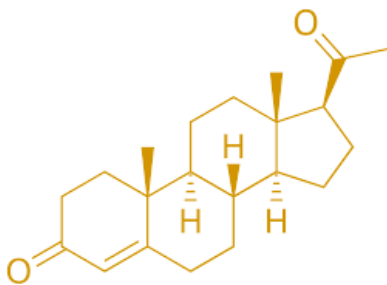


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What we learned

3. There is a higher intensity of progesterone receptors found in progressive iSGS compared with non-idiopathic SGS



Reading:
Ivana Fiz, Wiebke Antonopoulos, Jan-Constantin Kölmel, Christian Sittel et al
Hormone pathway comparison in non-idiopathic and idiopathic progressive subglottic stenosis

DOI: [10.1007/s00405-022-07615-0](https://doi.org/10.1007/s00405-022-07615-0)

Doctors have looked at the scar tissue and airways of patients with progressive (active) iSGS and compared them with non-idiopathic patients.

They found the scar tissue in idiopathic patients showed a higher amount of progesterone hormone, while the surrounding marginal tissue had a reduced amount of the hormone (possibly compensating for the higher amount in the scar).

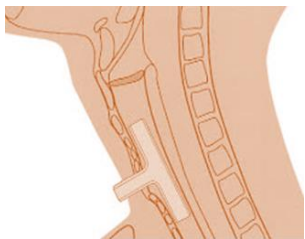
It is suggested this means there is a hormonal mechanism at play in the development of iSGS.

What this means

While further research is needed, these findings suggest that a targeted treatment for progressive iSGS could be developed.

What we learned

4. Use of a stent in treating subglottic stenosis is not recommended, rather a Montgomery T-tube is a better solution if needed



Reading:
Y N XingH J LiC H ZhongS Y Li

Clinical application and progress of airway stent in subglottic stenosis - Chinese journal of tuberculosis and respiratory diseases
45(11):1140-1146

DOI: [10.3760/cma.j.cn112147-20220409-00298](https://doi.org/10.3760/cma.j.cn112147-20220409-00298)

The use of stents or tracheostomy in patients with airway stenosis is generally avoided at all costs, however in emergencies they may be considered necessary.

These doctors reviewed 51 papers published globally over the past 29 years. These revealed that silicone and metal stents, when used long term, have a high complication rate in patients with subglottic stenosis.

In contrast the Montgomery T-tube is more suitable and has a higher success rate.

What this means

If your doctor suggests using a silicone or metal stent long term (not just a week or two e.g. as part of a major surgery) then point them towards this paper, advocating instead for a T-tube.



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What we learned

5. When shortness of breath worsens, people are more likely to experience anxiety and depression



Reading:

Hannah F. Case, David G. Lott, Amy L. Rutt DO
Anxiety and Depression in Patients with Idiopathic Subglottic Stenosis
Journal of Voice, March 2022

DOI: [0.1016/j.jvoice.2022.02.020](https://doi.org/10.1016/j.jvoice.2022.02.020)

Research found that any person with worsening shortness of breath/trouble breathing experiences feelings of anxiety and depression.

This finding was regardless of the cause of their shortness of breath and was not isolated to airway stenosis patients.

What this means

Seeking prompt treatment for your stenosis with a doctor you are confident in is important to ease feelings of anxiety and depression.

If these feelings continue once you are breathing well, it would be worth seeking additional counselling and help.

What we learned

5. A new style of resection spares damage to the cricoid, consequentially minimising voice and muscle impact of this major surgery



Reading:

Kevin Y. Liang, Rebecca C. Nelson, Paul C. Bryson, Robert R. Lorenz. **High Tracheal Resection With Intralaryngeal Extension as an Alternative to Cricotracheal Resection for Treatment of Subglottic Stenosis.** January 2023 Otolaryngology Head and Neck Surgery. DOI: [10.1002/ohn.180](https://doi.org/10.1002/ohn.180)

So far only conducted at Cleveland Clinic, early signs are that a new method of resection surgery can spare damage to and lowering of the voice, one of the major issues with the most common method of resection surgery.

This surgery is found to work best where the patient's scar tissue is found predominantly on the back of their trachea (posterior stenosis).

What this means

These results offer hope that in future, a scar-free airway and easy breathing might be achieved with a resection surgery without sacrificing voice.

Reading - also see - <https://my.clevelandclinic.org/departments/head-neck/outcomes/872-high-tracheal-resection-with-intralaryngeal-extension-for-treatment-of-subglottic-stenosis>