

Adenoid Hypertrophy

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Christina Rahm*

DRC VENTURES LLC, USA

***Corresponding Author:** Christina Rahm, DRC VENTURES LLC, USA.

Abstract

Adenoid hypertrophy is an obstructive condition of the adenoid, a patch of tissue behind the nose, characterized by difficulty breathing through the nose, post-nasal drip, chronic cough, snoring, excess nasal drainage, and/or sleep-disordered breathing. This condition has been reported to regress with age; however, it can lead to serious complications. Due to this, researchers have been seeking alternative medicinal therapeutics. In this paper, we will discuss the potential of silica, vitamin C, and trace minerals as a proprietary blend for treatment of adenoid hypertrophy in a 4-year-old male with primary diagnosis of hypertrophy of the adenoid gland, as well as signs of eczema.

Introduction

Adenoid hypertrophy represents an enlargement of the adenoid tissue and can be a common condition in children. While this condition is more prevalent in children, it has been reported to regress with age. Due to age related adenoid deterioration, this condition can resolve on its own; however, it can lead to serious complications. The main symptom is obstruction of the nasopharynx, which can lead to mouth breathing, snoring, and sleep apnea. Adenoid hypertrophy can also cause recurrent upper respiratory infections, sinusitis, otitis media with effusion, and hearing loss. In some cases, adenoid hypertrophy can be severe enough to cause sleep disruption, which can lead to behavioral problems and learning difficulties. Adenoid hypertrophy is usually diagnosed by clinical examination or imaging, and the treatment is the surgical removal of the adenoid gland.

The complications that emanate from the blood supply to the adenoid are very low. However, in exceptional cases where there is an obstruction of the Eustachian tube, surgery may be considered to relieve the obstruction and improve hearing. The mainstay of treatment for adenoid hypertrophy is the surgical removal of the adenoid gland (adenoidectomy). Adenoidectomy can be performed using different techniques, including cold steel dissection, bipolar electrocautery, Coblation, or laser ablation. The choice of surgical technique is dependent on the surgeon's preference and experience.

Alternative remedies apart from surgical procedures have been explored and one such is the use of natural supplements. This is a significant finding because it shows that there are alternative treatments available for adenoid hypertrophy, without the need for surgery. The use of natural supplements is effective in reducing the size of the adenoid gland and alleviating the symptoms associated

with adenoid hypertrophy. The deficiency of vitamins and minerals is a common cause of adenoid hypertrophy. As a preventative measure, it is important to ensure that the diet is rich in these nutrients. Supplementation with vitamins and minerals can also help to reduce the symptoms of adenoid hypertrophy.

Case Study (full)

Background: Preliminary results showed a 4-year-old male with Primary diagnosis of hypertrophy of the adenoid gland but also signs of eczema and always long-lasting colds accompanied a lot of mucus discharge that were occurring every month. Oftentimes, he was also constipated. Parents reported he was snoring at night and that they have planned an ENT procedure (adenoid removal) in 4 months.

Method: He was put on functional medicine gut healing protocol including elimination diet and inflammation reducing supplements, also using Proprietary blend 1 drops 1 drop B.I.D. He then slowly increased within 2 months to 3 drops B.I.D.

Results: In less than a month, his skin was without any signs of eczema, and his stool was normal. He had not caught a cold in 2 months.

Legend

Proprietary blend 1: silica, vitamin c, and trace minerals.

Proprietary blend 2: N-acetyl L tyrosine, anhydrous caffeine, L theanine, velvet bean seed, pine bark, curcumin, and vitamin d.

Proprietary blend 3: black seed oil, resveratrol, turmeric, raspberry ketone, apple cider vinegar, aloe Vera, and d-ribose

A minor one was reported after 2 months, but without any episodes of snoring. Snoring is completely resolved. He had an ENT exam in 2 months, checking his adenoid status. No adverse effects were reported.

Silica

Silica is a naturally occurring substance that is found in many foods and is also available in supplement form. It is necessary for the formation of collagen and helps to keep connective tissues, such as skin, bone, and tendons, healthy. Silica is also involved in the absorption of calcium and magnesium and helps to maintain healthy bones. Silica supplements are often used to treat osteoporosis, as they can help to strengthen bones. Silica is also sometimes used as a treatment for Alzheimer's disease and dementia, as it has been shown to improve cognitive function in some people. Silica can be toxic in large doses and should not be taken in supplement form if you are pregnant or breastfeeding.

Silica, in the form of silicon dioxide, is found in many foods. Foods high in silica include oats, barley, wheat, and rice. Silica is also found in leafy green vegetables, such as spinach and kale. Silica supplements are often made from horsetail extract, which is a plant rich in silica (EFSA Panel et al., 2018). Silica supplements are available in tablet, capsule, and powder form. As a food additive, silicon dioxide (E 551) is used as an anti-caking agent and flow regulator (EFSA Panel et al., 2018). It is found in salt, spices, dried soups, soup mixes, potato chips, corn chips, and other snack foods. Silicon dioxide is also found in some chewing gums and is used as a polishing agent in some toothpaste (EFSA Panel et al., 2018). Silicon dioxide is considered to be safe when used in food and cosmetics.

The deficiency of silica in the body can lead to several health problems, such as osteoporosis, Alzheimer's disease, and dementia. Silica supplements are often used to treat these conditions. Silica can also help to improve cognitive function in some people. Nanotechnology, an emerging field of cutting-edge technology utilizes physicochemical properties of nanomaterials as a means to control their size, surface area, and shape to generate different nanoscale-sized materials. According to Park et al. (2018), nanotechnology that uses silica decorated in silver inactivates the Influenza A virus (IFV-A). In a study done by Park et al. (2018), it was found that Ag30-SiO₂ particles, which are silver nanoparticles decorated on silica, were able to reduce the infection that IFV-A caused on the cells.

Evidence of Silica/Silicon Dioxide for the Prevention or Treatment of Adenoid Hypertrophy

One study by Ivkovic et al. (2004), used a dietary supplement of zeolite to test the effect on immunodeficiency in 61 patients. The zeolite, TMAZ, was given at doses of 1.2 or 3.6 grams per day for 6-8 weeks. The study found that the group supplemented with 3.6 grams of TMAZ per day had increased CD4+ and CD19+ lymphocyte counts and decreased CD56+ cell count. The group supplemented with 1.2 grams of TMAZ per day had increased CD3+ cell count and reduced CD56+ lymphocyte count. There were no adverse effects to the treatment reported in either group. This study provides evidence that zeolite, specifically TMAZ, has immunomodulatory effects in humans and could potentially be used as a treatment for adenoid hypertrophy. According to Mastinu et al. (2019) zeolite is an antioxidant and anti-inflammatory agent. It is also a detoxifying agent. These properties could be beneficial in the treatment of adenoid hypertrophy. The exact mechanisms by which zeolite works are still unknown, but further research in this area is warranted. Based on the symptoms of adenoid hypertrophy, it is reasonable to expect that TMAZ would be effective in reducing enlarged adenoids. This is because TMAZ has anti-inflammatory and immune-modulating effects, which would be beneficial in reducing the symptoms of adenoid hypertrophy. Park et al. (2018) conducted a study, which found that Ag30-SiO₂ particles, which are silver nanoparticles decorated on silica, were able to reduce the septicity on Madin-Darby Canine Kidney cells by IFV-A. Furthermore, the study found that the main antiviral action of Ag30-SiO₂ elements emanates from interacting with viral constituents positioned at the membranes. Consequently, Ag30-SiO₂ particles result in a nonspecific damage to different IFV-A constituents and form effective techniques to inactivate IFV-A. The antiviral property of nano silica has latency to be used to develop a new treatment for adenoid hypertrophy.

Vitamin C

Vitamin C is a water-soluble vitamin and needs to be taken in through diet or supplements, as the body cannot produce it. Vitamin C is found in many fruits and vegetables, including oranges, strawberries, kiwifruit, bell peppers, broccoli, and spinach. It is also found in some meats, such as liver and chicken. Vitamin C has many functions in the body and is essential for the growing and repairing tissues. It is also an antioxidant, meaning it helps protect cells from damage. Vitamin C is involved in the production of collagen, which is a protein that helps form connective tissue, such as skin, tendons, and ligaments. It is also necessary for the absorption of iron from food.

A lack of vitamin C can cause scurvy, which is an ailment characterized by fatigue, muscle weakness, joint pain, and bleeding gums. A vitamin C deficiency can also cause anemia, as it is necessary for the absorption of iron. In severe cases, a lack of vitamin C can lead to death. Taking too much vitamin C is not typically harmful, as the body will expel any excess in the urine. However, taking very enormous doses of vitamin C (excess of 2000 mg per day) can result in diarrhea, nausea, vomiting, and stomach aches (Gao et al. 2021).

Vitamin C aids the production of some neurotransmitters, such as noradrenaline and dopamine. It is also involved in the production of cortisol, a stress hormone. Vitamin C has several functions in the body, including aiding in the absorption of iron, boosting the immune system, and acting as an antioxidant. According to a 2021 study, high doses of vitamin C improved the oxygen support position and reduced the mortality rate in patients with Coronavirus disease 2019 (Gao et al. 2021). The study included 76 patients, 46 of whom were given high doses of vitamin C, and 30 who received standard therapy. The results showed that the high-dose vitamin C group had a lower risk of mortality than the standard therapy group (HR=0.14, 95% CI, 0.03- 0.72) (Gao et al. 2021). In addition, the high-dose vitamin C group had a better oxygen support status than the standard therapy group (63.9% vs 36.1%). The study also found that there were no safety actions linked with high-dose vitamin C remedy (Gao et al. 2021). Overall, Vitamin C is available in supplement form and can be taken orally. It is also found in many topical products, such as creams and serums.

Evidence of Vitamin C for the Prevention or Treatment of Adenoid Hypertrophy

Grebe et al. (2006) conducted a study on 10 healthy, untreated patients to test the hypothesis that endothelial dysfunction in OSA is related to oxidative stress. This research found that after an intravenous injection of 0.5 g of vitamin C, vasoreactivity improved in people with OSA to a level comparable to that tested in the control subjects. These results suggest that oxidative stress is liable for the endothelial malfunction in OSA and that antioxidant techniques, like vitamin C, must be exploited for the intervention of OSA-related

cardiovascular infections. Vitamin C may thus have the potential as a preventative or treatment option for adenoid hypertrophy, which can obstruct the airway and lead to OSA. The study provides an evidence base for further research into the use of vitamin C for adenoid hypertrophy.

Asfora (1977) conducted a study to determine the influence of Vitamin C in treating common colds. The study found that when patients received 6.0 g of Vitamin C daily, the length of their colds was significantly reduced. The study also found that when the treatment began within 24 hours of the first symptoms, patients often did not develop the full cold. The findings suggest that Vitamin C can be used as a preventative or treatment option for adenoid hypertrophy. The study provides an evidence base for further research into the use of Vitamin C for adenoid hypertrophy.

Kim et al. (2015) sought to determine the effect of vitamin C in the production of epidermal ceramide in keratinocytes. The research found that vitamin C does stimulate the production of epidermal ceramide. Furthermore, the study found that vitamin C also increases the activity of S1P phosphatase, which is an enzyme responsible for the hydrolysis of sphingosine-1-phosphate (S1P). This finding suggests that vitamin C may improve overall epidermal barrier function. Drawing from the study, adenoid hypertrophy may be improved with vitamin C supplementation due to the stimulation of ceramide production. Ceramide production is important for the maintenance of epidermal barrier function, and thus, vitamin C may help to improve the symptoms associated with adenoid hypertrophy.

Trace Minerals

The role of trace minerals in human health is essential, as they are involved in many biochemical processes. More than 75 trace minerals are utilized in the proprietary blend, which is often found in foods such as meats, poultry, fish, and grains. However, the body does not store these minerals; therefore, a constant daily intake is necessary. Although the body requires trace minerals in small amounts, they play a vital role in many processes including being a key component for enzymes, supporting a multitude of biochemical reactions, and normal growth and development. The most important trace minerals are iron, zinc, chromium, copper, iodine, manganese, and selenium.

Iron embodies a vital constituent of several proteins and enzymes and is necessary to form red blood cells and lean muscular components. A lack of iron can lead to anemia, which is a condition characterized by fatigue, weakness, and pale skin. Chromium is involved in insulin function and glucose metabolism. A lack of chromium can lead to increased blood sugar levels. A lack of copper leads to anemia, osteoporosis, and joint pain.

Manganese is a key component of many enzymes and possesses antioxidant remunerations for a variety of metabolic purposes. It also supports bone development and wound healing. Selenium is a critical element of many selenoproteins, which contributes to reproduction, thyroid hormone uptake, DNA synthesis, and defense from oxidative harm and septicity. A lack of selenium can lead to goiter, hypothyroidism, and Hashimoto's disease. Iodine is a key constituent of the thyroid hormone. A deficit can have harmful implications on the development of the brain and can cause cognitive impairment and mental retardation in a child.

Evidence of Trace Minerals for the Prevention or Treatment of Adenoid Hypertrophy

The role of trace minerals in human health is essential, as they are involved in many biochemical processes. Selenium (Se), zinc (Zn), and copper (Cu) are trace minerals that have antioxidant properties and contribute to the immune system. Se, Zn, and Cu levels are decreased in patients with adenoid hypertrophy. The research aimed to estimate the Se, Zn, and Cu measurements in children with adenoid hypertrophy and to investigate the relationship between these trace elements and C reactive protein (CRP), white blood cells (WBCs), and adenoid size.

60 children participated in the study, 30 healthy children (Group 1) and 30 children with adenoid hypertrophy (Group 2). The Se, Zn, and Cu levels were measured in the plasma of all participants. The adenoid size was assessed by computed tomography (CT) in Group 2. The CRP and WBC levels were measured in both groups. The mean plasma Se, Zn, and Cu levels were considerably lower in Group

2 than in Group 1. There was a positive relationship between Se and Zn ($r=0.276$, $p=0.033$). The mean adenoid size was significantly larger in Group 2 than in Group 1 ($p<0.001$). The CRP and WBC levels were considerably higher in Group 2 than in Group 1 ($p<0.001$). This study shows that Se, Zn, and Cu levels are decreased in children with adenoid hypertrophy. The use of natural supplements containing these trace minerals may help to improve the antioxidant status and reduce inflammation in these children.

Chen et al. (2013) examined the relationship between Obstructive sleep apnea (OSA) and oxidative stress in 44 subjects. The subjects were between 3 and 12 years of age and had adenoid hypertrophy. The study found that OSA was associated with increased oxidative stress. The study also found that the use of natural supplements containing antioxidants, such as Se, Zn, and Cu, could help to reduce oxidative stress and improve OSA. The findings of the study show a higher plasma concentration of Se, Zn, and Cu in the OSA group than in the control group. The adenoid size was significantly correlated with the plasma concentration of Se, Zn, and Cu. The use of natural supplements containing these trace minerals may help to improve the antioxidant status and reduce inflammation in children with adenoid hypertrophy. Thus, the use of natural supplements containing Se, Zn, and Cu may help to reduce the symptoms of adenoid hypertrophy and improve the quality of life in these children.

In conclusion, silica, vitamin C, and trace minerals show promise as a proprietary blend for the treatment of adenoid hypertrophy in a 4-year old male. While more research is needed to confirm the efficacy of this blend, the current evidence suggests that it may be an effective treatment for adenoid hypertrophy. The case study shows that not only can this alternative treatment help reduce the size of the adenoid gland, but it can also help with other conditions such as eczema and constipation.

Reference

1. Arıkan T., et al. "Plasma Selenium, Zinc and Copper Levels in Children with Adenoid Hypertrophy". *Turkish Journal of Clinical Biochemistry* 16.3 (2018): 141-149.
2. Asfora J. "Vitamin C in high doses in the treatment of the common cold". *Int J Vitam Nutr Res* 16 (1977): 219-234.
3. Chen PC., et al. "Blood trace minerals concentrations and oxidative stress in patients with obstructive sleep apnea". *The journal of nutrition, health & aging* 17.8 (2013): 639-644.
4. EFSA Panel on Food Additives and Nutrient Sources added to Food (ANS), et al. "Re-evaluation of silicon dioxide (E 551) as a food additive". *EFSA Journal* 16.1 (2018): e05088.
5. Gao D., et al. "The efficiency and safety of high-dose vitamin C in patients with COVID-19: a retrospective cohort study". *Aging (Albany NY)* 13.5 (2021): 7020-7034.
6. Geiger Z and Gupta N. *Adenoid Hypertrophy* (2019).
7. Kim KP, et al. "Vitamin C stimulates epidermal ceramide production by regulating its metabolic enzymes". *Biomolecules & Therapeutics* 23.6 (2015): 525.
8. Mastinu A., et al. "Zeolite clinoptilolite: Therapeutic virtues of an ancient mineral". *Molecules* 24.8 (2019): 1517.
9. Park S., et al. "Inactivation of influenza A virus via exposure to silver nanoparticle-decorated silica hybrid composites". *Environmental Science and Pollution Research* 25.27 (2018): 27021-27030.