

TONSILLOLITH

Tonsilloliths, also known as Tonsil stones or Tonsillar calculi (singular: calculus), are clusters of calcified material that form in the crevices of the Tonsils.

The Tonsils are areas of lymphoid tissue on either side of the throat. Most commonly, the term “Tonsils” refers to the Palatine tonsils/Faucial tonsils that can be seen in the back of the throat. These lymphoid tissue forms a complete ring of tonsillar tissue and lines entire throat-**Waldeyer's tonsillar ring**. The Tonsils act as part of the immune system to help protect against infection-upper respiratory tract infections. They are meant to function like nets, trapping incoming bacteria & virus particles that are passing through the throat.

Tonsils are of 4 types in the human body:

Tonsils in humans include, from superior (top) to inferior (bottom):

- “Pharyngeal tonsils“/ Adenoids-Roof of pharynx
- Tubal tonsils -Roof of pharynx
- Palatine tonsils / Faucial tonsils-Sides of Oropharynx
- Lingual tonsils -Behind terminal sulcus (tongue)

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stones or Tonsillar calculi (singular: calculus), are clusters of calcified material that form in the crevices of the Tonsils. While they occur most commonly in the Palatine tonsils, they may also occur in the Lingual tonsils. Tonsilloliths have been recorded weighing from 300 mg to 42 g.

EPIDEMIOLOGY

Tonsilloliths or Tonsillar concretions occur in up to 10% of the population, frequently due to episodes of Tonsillitis. While small concretions in the Tonsils are common, true Tonsilloliths or stones are rare. Much rarer than the typical Tonsil stones are giant Tonsilloliths. They commonly occur in young adults and are rare in children. Mostly seen in the age group between 20- 70 years.

COMPOSITION

These calculi are composed of calcium salts such as hydroxyapatite or calcium carbonate apatite, oxalates and other magnesium salts or containing ammonium radicals, macroscopically appear white or

yellowish in color.

CAUSES

- Tonsil Stones (Tonsilloliths) form due to an accumulation of sulfur-producing bacteria and debris that gets stuck in the Tonsils. The debris (including mucous from post nasal drip) putrefies in the throat and gathers in the Tonsil crypts (small pockets which appear on the Tonsils). When the debris mixes with the Volatile Sulfur Compounds made by bacteria under the surface of the tongue, it may also cause bad breath (Halitosis) and other taste problems.
- Tonsilloliths are formed when this trapped debris combines and hardens or dystrophic calcification occurs as a result of deposition of above stated inorganic salts from the saliva secreted in the mouth by major and minor salivary glands.
- These tend to occur most often in people who suffer from chronic inflammation in their Tonsils or repeated bouts of Tonsillitis,

which lead to fibrosis of ducts of crypts and retention of epithelial debris thereof.

- They are also often associated with post-nasal drip.
- Calculi have been reported in the peritonsillar region and lateral pharyngeal wall; and were explained by calcification of Peritonsillar Abscess, presence of ectopic tonsillar tissue and calcification of saliva in blocked secretory ducts of minor salivary glands.
- Some other listed causes of Tonsillolith are hyperactive salivary glands, betel nut chewing, tobacco chewing (with CaCO_3), mucous secretions, intolerance to food or dairy products, salivary stasis and hypercalcemia, which are known to precipitate the formation of Tonsilloliths.

SYMPTOMOLOGY

Many small Tonsil stones do not cause any noticeable symptoms. Even when they are large, some Tonsil stones are only discovered

incidentally on X-rays or CT scans. Some larger Tonsilloliths, however, may have multiple symptoms:

- **Bad Breath:** Approximately 75 percent of people with Tonsil stones suffer from Halitosis (bad breath) that stems from the Tonsil stones & accompanies a tonsil infection. The presence of volatile sulphur compounds provides objective evidence of bad breath. Researchers have suggested that Tonsil stones be considered in situations when the cause of bad breath is in question.
- **Sore throat:** When a Tonsil stone and Tonsillitis occur together, it can be difficult to determine whether the pain in the throat is caused by infection or the Tonsil stone. The presence of a Tonsil stone itself, though, may cause one to feel pain or discomfort in the area where it is lodged.
- **White debris:** Some Tonsil stones are visible in the back of the throat as a lump of solid white material. This is not

always the case. Often they are hidden in the folds of the Tonsils. In these instances, they may only be detectable with the help of non-invasive scanning techniques, such as CT scans or Magnetic Resonance Imaging.

- **Difficulty swallowing or Dysphagia / Painful swallowing or Odynophagia:** Depending on the location or size of the Tonsil stone, it may be difficult or painful to swallow foods or liquids.
- **Ear pain:** Tonsil stones can develop anywhere in the Tonsil. Because of shared nerve pathways, they may cause a person to feel referred pain in the ear, even though the stone itself is not touching the ear.
- **Tonsil swelling:** When collected debris hardens and a Tonsil stone forms, inflammation from infection (if present) and the Tonsil stone itself may cause a Tonsil to swell or become larger.
- **A foreign body sensation** may also exist in the back of the throat.

DIFFERENTIAL DIAGNOSIS

Foreign Body

- The patient thinks he recently swallowed a fish or a chicken bone and still can feel a foreign body sensation in his throat, especially (perhaps painfully) when swallowing. Thus this can be confused with the foreign body sensation caused by a Tonsillolith.
- The ingestion of foreign bodies is most commonly a problem in young children aged 6 months to 5 years, but can affect children of all ages. Patients with mental illness, intellectual impairment, prisoners or 'drug-mules'/'body-packers' (those involved in the smuggling of illicit drugs concealed in the gastrointestinal tract) are prone to problems caused by purposeful ingestion of foreign bodies.
- A foreign body in the tracheobronchial tree usually stimulates coughing and wheezing. Obstruction of the esophagus produces drooling and spitting up of whatever fluid is swallowed.
- Patients with non obstructing or partially obstructing foreign bodies in the throat often present with a history of choking, dysphagia, odynophagia or dysphonia. Pharyngeal foreign bodies should also be suspected in patients with undiagnosed coughing, stridor or hoarseness.
- All pharyngeal foreign bodies are medical emergencies that require airway protection. Because complete

airway obstruction usually occurs at the time of aspiration and results in immediate respiratory distress.

- Complications include airway obstruction, laryngeal edema, and pushing the foreign body into the subglottic space, esophagus or trachea.
- In case of known history of ingestion of radio-opaque objects, radiographs are beneficial. But otherwise, Endoscopy or CT scan are considered superior for assessing.

Tonsillitis

- This condition can be present as an accompanying complaint or a complication or also as a misdiagnosis of Tonsillolith.
- Most common in children aged 6 to 12 years; however, all ages are affected.
- Peaks in winter and early spring.
- Symptomology is very similar to Tonsillolith, though high fever and tender enlarged lymph nodes sets it apart. It would usually present as difficulty in swallowing, coughing, voice changes, ear pain, high fever upto 104°F, chills, headache, sore throat - lasts longer than 48 hours and may be severe, tenderness of the jaw and throat, snoring and breathing difficulty during sleep. On examination, Tonsils appear enlarged and red in appearance & may have white spots on them. The lymph nodes in the jaw and neck may be swollen and tender to the touch.
- Rapid Strep test or Strep throat culture are found positive in majority of cases, if Streptococcus is the causative agent.
- In 40%, symptoms resolve in three days and within one week in 85%, regardless of whether Streptococcal infection is present or not.

Peritonsillar Abscess

- Peritonsillar abscess is a collection of infected material in the area around the Tonsils. Most often found as a complication of Tonsillitis.
- Tonsillolith can often be mistaken for Peritonsillar abscess. The whitish appearance of the collected infected matter confuses a physician.
- Peritonsillar abscess is usually a condition of older children, adolescents and young adults.
- One or both Tonsils become infected. The infection usually spreads behind the Tonsil and can then spread down into the neck and chest.
- Clinically presented with fever and chills, severe throat pain that is usually on one side, difficulty opening the mouth or Trismus and pain with opening the mouth, difficulty swallowing, facial or neck swelling, tender glands of the jaw and throat & muffled voice also called 'hot potato voice'. These signs and symptoms are commonly seen and marks its differentiation from Tonsillolith.
- Examination of the throat often shows swelling on one side and on the roof of the mouth. The uvula in the back of the throat may be shifted away from the swelling. The neck and throat may be red and swollen on one or both sides.

Tonsillar Actinomycosis

- Actinomycosis is a chronic suppurative bacterial disease caused by branching filamentous gram-positive bacilli of Actinomycosis family. Its pus discharging lesion may form a lump and imitate a Tonsillolith.
- The disease can be differentiated by spread to contiguous tissues because of disruption of anatomical barriers by trauma, surgery or another infection. Once in the tissues, it may form an abscess that develops into a hard red to reddish purple lump. When the abscess breaks through the skin, it forms pus-discharging lesions.
- Difficulty and pain during swallowing which is progressive in nature, ear pain, ulcero-proliferative growth is seen in the Tonsils covered with slough. The growth has an irregular surface and it bleeds on touch.
- Precipitating factors include: dental caries, dental manipulations and maxillofacial trauma.

Involvement of the skin of the cheek is the next most common presentation. The classic formation of draining sinus tracts with the presence of sulfur granules is seen in approximately 40% of cases and when present, can help make the diagnosis.

- For the diagnosis of Actinomycosis to be established, two of the following conditions must be present, positive cultures, sulfur granules or biopsy specimens showing the organism.

Calcified Granuloma

- Tonsillolith may be misdiagnosed as Calcified granuloma, where in calcification occurs as a post-inflammatory consequence in Tonsils.
- Granulomatous inflammation of the Tonsils is rare, but when present is often part of the presentation spectrum of systemic diseases. Cases of tonsillar enlargement due to Sarcoidosis, Crohn's disease, fungal infection and Tuberculosis have been reported in the medical literature.
- It occurs in numerous settings including infection, most classically by Mycobacterium tuberculosis, but also fungi and unusual bacteria; neoplasia, commonly associated with Hodgkin's disease but also reported with keratinizing squamous cell carcinoma; and foreign body reaction.
- Granulomatous lesions consists mainly of macrophages containing peculiar calcified inclusions (Michaelis-utman bodies) considered pathognomonic for the disease.
- Clinical presentation includes a sore throat, followed by a mass lesion, dysphagia and nasal obstruction.

Enlarged or Calcified Styloid process

- The elongated Styloid process is often a feature of Eagle's syndrome. An enlarged and calcified Styloid process is often asymptomatic, unless detected radiologically. If symptomatic, its symptomology can be very similar to a Tonsillolith.
- An abnormally elongated styloid process or its calcification may cause recurrent throat pain, foreign body sensation, dysphagia, Tinnitus, otalgia or unilateral facial or neck pain. An enlarged styloid process may also compress upon the Internal Carotid artery, leading to Transient Ischemic Attack and may pose a threat to anesthetists performing intubation procedures.
- Patients with this syndrome tend to be between 30 and 50 years of age but it has been recorded in teenagers and in patients > 75 years old.
- On the exam, one can sometimes palpate the tip of the Styloid process in the back of the throat.
- One should have a high level of suspicion when neurological symptoms occurs upon head rotation. Symptoms tend to be worsened on bimanual palpation of the styloid through the tonsillar bed.
- Imaging is important and is diagnostic. Visualizing the Styloid process on a CT scan with 3D reconstruction is the suggested imaging technique.

Phleboliths

- Phleboliths are calcified thrombi and are often found in association with hemangiomas. Skeletal muscle hemangiomas do occur in the head and neck region and usually involve the Masseter muscle. Consequently Phleboliths can be seen in the anatomic area occupied by the Masseter muscle and Mandibular ramus.
- Because of the vicinity of the Masseter muscle to the Palatine tonsils, it can be confused with a Tonsillolith.
- The involved soft tissue may be swollen or discolored by the presence of veins or a soft tissue haemangioma.
- Applying pressure to the involved tissue should cause a blanching or change in colour, if the lesion is vascular in nature.
- On a radiograph- they may be homogeneously radiopaque but more commonly has the appearance of laminations.

DIAGNOSIS

Diagnosis is usually made upon inspection. Tonsilloliths are difficult to diagnose in the absence of clear manifestations and often constitute casual findings of routine radiological studies. Imaging diagnostic techniques can identify a radiopaque mass that may be mistaken for foreign bodies, displaced teeth or calcified blood vessels. Computed tomography (CT) may reveal nonspecific calcified images in the tonsillar zone.

REMOVAL/NON-PHARMACOLOGICAL TREATMENT

Often, no treatment is needed, as few stones produce symptoms. There are many methods for Tonsillolith removal. It is advisable to go in for natural modes of treatment as they are safe and do not cause any harm to the body.

- **Oral Hygiene-** It is mandatory to maintain a healthy oral cavity. Regular brushing and flossing will help in keeping your mouth free of bacteria. The foreign bodies which cause Tonsilloliths are flushed out from the mouth by performing this act. This is an effective Tonsillolith removal technique. It is advisable to use a mouth wash regularly to fight against the bad odor caused by these bacteria.
- **Salt water gargles-** Gargling with warm, salty water may help alleviate the discomfort of Tonsillitis, which often accompanies Tonsil stones. Vigorous gargling each morning can also keep the Tonsil crypts clear of all but the

most persistent Tonsilloliths.

- **Water Pik-** They are water jet syringes which are used for Tonsilloliths removal manually. Water is ejected on the stone using this instrument and flushed out from the pocket. Be careful while using this machine as it can lead to damage of the Tonsils.
- **At-home removal-** Some people choose to dislodge Tonsil stones at home with the use of picks or swabs. It is effective but can lead to increased risk of infection. Following all the hygienic precautions before going ahead with this technique is advisable.
- **Curettage-** Larger Tonsil stones may require removal by curettage or otherwise, although thorough irrigation will still be required afterwards to effectively wash out smaller pieces. Larger lesions may require local excision although these treatments may not completely help the bad breath issues that are often associated with this condition.
- **Laser-** Another option is to decrease the surface area (crypts, crevices, etc.) of the Tonsils via laser resurfacing. The procedure is called Laser Cryptolysis. It can be performed using a local anesthetic. A scanned carbon dioxide laser selectively vaporizes and smoothes the surface of the Tonsils. This technique flattens the edges of the crypts and crevices that collect the debris, preventing trapped material from forming stones.
- **Surgery-** Tonsillectomy may be indicated if bad breath due to

Tonsillar stones persists despite other measures.

HOMOEOPATHIC MANAGEMENT

Symptomatically Homoeopathy can provide incredible relief to a patient having Tonsillolith. The causes leading to its formation can also be corrected with timely administration of homoeopathic medicines, thereby preventing any suitable soil that can lead to its creation. Complications or any further adversities can also be combated effectively with its usage. Even after curettage or removal of stone as per the conventional system of medicine, recurrence of these factors and emergence of a stone yet again can be prevented with use of homoeopathic medicines. As far as its disruption or dissolving is concerned negligible data has been documented so far. The following medicines can prove beneficial:

Baptisia: Painless sore throat and offensive discharge. Numb inside but sensitive outside. Tonsils and soft palate dark red and swollen. Can swallow liquids only, least solid food gags. Spasms of gullet. Constrictive feeling in throat causing frequent efforts at swallowing. Putrid, offensive breath. Thick speech. Filthy taste with flow of saliva.

Mercurius solubis: Offensive, putrid odor from mouth. Whole mouth moist. Saliva increased, flows during sleep, yellow, bloody, bad tasting offensive. Putrid, sore throat, worse right side. Constant desire to swallow. Stitches into ear on swallowing, fluids return through nose. Sensation as of an apple core, choke pear or something hanging in the throat.

Worse drafts, taking cold.

Psorinum: Painful swallowing with pain in ears. Profuse offensive saliva tough mucus in throat. Eradicates tendency to quinsy. Hawking up of cheesy, pea-like balls of disgusting smell and taste. As of plug in throat impeding hawking.

Hepar sulph: Hawks up some yellow tenacious mucus. When swallowing sensation as if a plug. Sensation of a splinter in throat. Stitches in throat extending to the ear when swallowing. Offensive discharges, smells like old cheese.

Nitric acid: Difficult swallowing. Sticking pain as from splinters into ears, worse swallowing. Hoarseness. Dry. Throat pain goes into ears. Hawks out mucus from posterior sinuses. White patches and sharp points, as from splinters, on swallowing. Putrid, offensive breath.

Arnica montana: It is known clinically as an aid in controlling formation of Tonsillolith. Swelling of soft palate and uvula. Taste as from bad eggs. Fetid breath. Bright red, puffy fauces. Swallowing is prevented by sort of nausea as if food would not go down. Post nasal drip.

Phytolacca decandra: Much pain at the root of the tongue, soft palate and tonsil swollen. Sensation of a lump in throat. Throat feels rough, narrow, hot. Shooting pain into ears on swallowing. Pseudo-membranous exudation, grayish-white, thick, tenacious yellowish mucus. Cannot swallow anything hot.

Complied by Bakson's Deptt. of Clinical Research and Product Development
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DR. BAKSHI'S BAKSON'S HOMOEOPATHY

Homoeopathy is fast becoming the first line of treatment for the simple reason that it is highly effective and has no side effects. A pioneer in making the benefits of Homoeopathy reach the masses in its true form, Bakson has emerged as a leading health centre. Bakson derives its strength from the foundation principles of Dr. K. S. Bakshi and the experienced leadership of Dr. S.P.S. Bakshi, CMD Bakson.

Bakson's Homoeopathic Clinics constitute the world's 1st Homoeopathic chain for treating allergic manifestations in - Skin, Respiratory, Gastro intestinal and Musculo-skeletal systems. The clinics provide Homoeopathic care based on scientific Homoeopathic prescriptions and personal supervision of qualified Homoeopaths.

There are many renowned clinics spread all over India. In Delhi & NCR they are located in South Extension, Sarojini Nagar, Janakpuri, Pitampura, Hargobind Enclave, Shakti Nagar, West Patel Nagar, Kalkaji, Dwarka, Noida, Gurgaon & Faridabad and the rest are at Mumbai, Bangalore & Jaipur. All doctors at these clinics are trained by Dr. S.P.S. Bakshi.

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Gastrointestinal System: Constipation, Diarrhoea, Ulcerative colitis, Flatulence, Heartburn, Hyper-acidity, Indigestion, Peptic ulcer, Stomatitis.

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