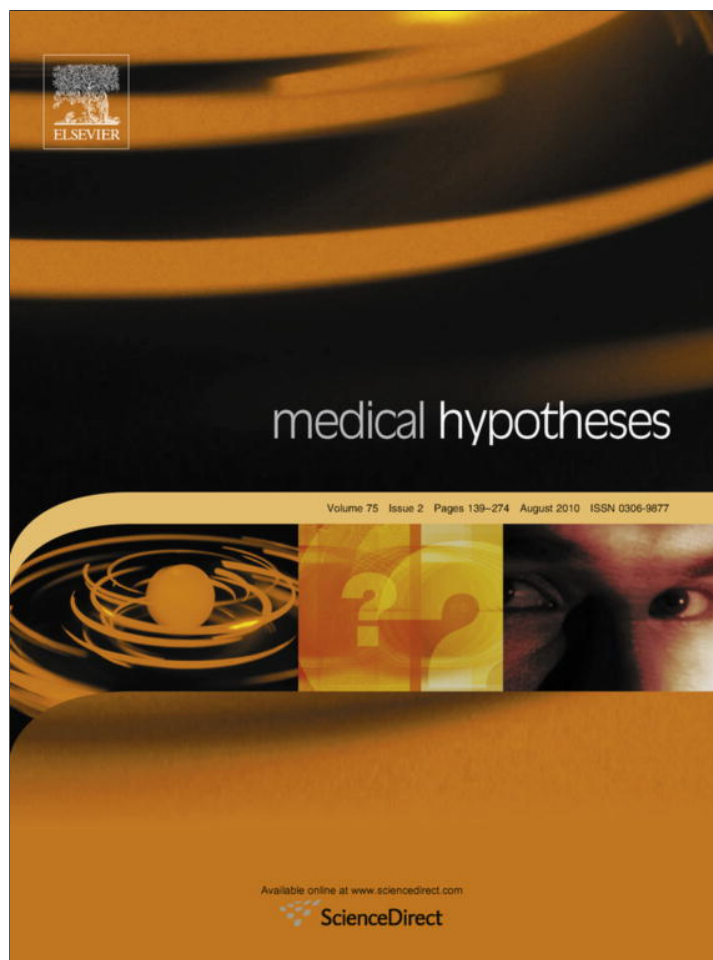




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Drinking air and manoeuvring it to the pyloric region of the stomach for the treatment for *Helicobacter pylori* infection

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SUMMARY

Helicobacter pylori is a flagellate, gram-negative bacterium which lives in the pyloric region of the human stomach and is a major cause of a large proportion of peptic ulcers, some non-ulcer dyspepsias and rarely, gastric cancers. It is a microaerophilic (anaerobic) organism. In place of the several drugs currently in use for treating *H. pylori* infection, plain simple atmospheric air swallowed or sucked into the stomach, or drunk by any of the various techniques described here and then posturally manoeuvred to the pyloric region by inverting the trunk for a few minutes on a daily basis could be used as a preventive as well as a therapeutic measure for established *H. pylori* infection. Air is always present in the fundus of stomach, which is the reason why *H. pylori* does not colonise in the fundal region.

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Introduction

Yoga is an ancient Indian discipline now recognized as an alternative medical practice which includes *āsanas* (postures), *prāṇāyāmas* (breathing exercises) and *kriyās* (internal cleansing practices) [1]. One of the *kriyās* is known as *Vāta Sāra*, which literally means 'passing wind down'. It involves swallowing or drinking air (these two actions differ slightly as described later) and manoeuvring it past the pylorus by different postures, to be ultimately passed down as flatus.

Modern physiology considers aerophagy a psychiatric disorder, albeit erroneously. Presence of air in the gut is almost universal. Some persons who pass large volumes of odourless wind are seen to remain free of gastrointestinal disorders. Most of the air present in the gut is atmospheric air, subconsciously swallowed. Where this mechanism fails, anaerobic organisms get a chance to thrive in the gut. Deliberate aeration of the gut can change the microbiological environment therein, broadly promoting the growth of aerobic and inhibiting the growth of anaerobic organisms. Two important pathogens of the gut, *Helicobacter pylori* and *Entamoeba histolytica* are anaerobic organisms. Air can be drunk or swallowed and posturally manoeuvred to the pyloric region of the stomach. This way it can be used as anti-*H. pylori* and anti amoebic agent to save drugs worth millions of dollars used for treating these infections.

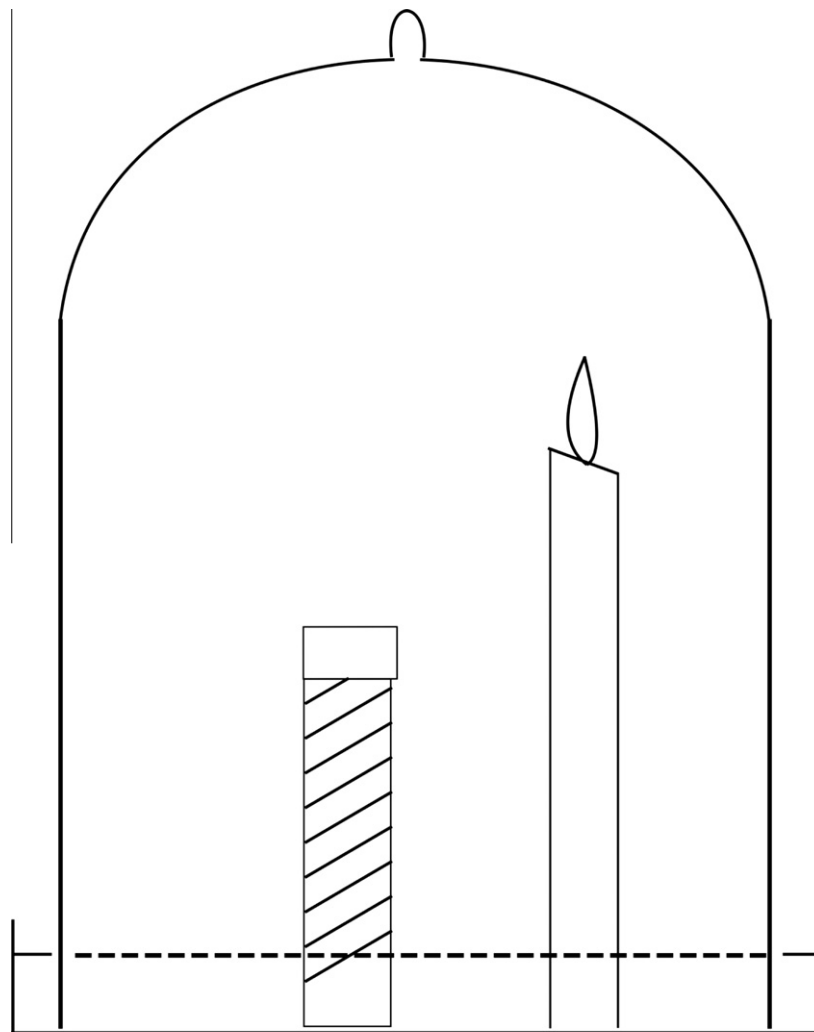
Microbiology of *H. pylori*

The organism *H. pylori* was discovered in biopsy specimens of peptic ulcers in 1971. In 1981 its association and causative role in Peptic Ulcer Disease was proved by Barry Marshall and Robin Warren. The Nobel Prize for Medicine and Physiology of the year 2005 was awarded to them [2]. The reason that it remained hidden from the eyes of microbiologists is that it is found in a location where no one imagined any organism could survive, the gastric mucosa. It is a gram-negative cork-screw shaped organism with a tuft of flagella at one end. It flourishes in the mucous layer of the pyloric region of the stomach and rarely invades the mucosa itself. Microaerophilic in nature [3], it requires very small concentrations of oxygen. It is able to survive in the highly acidic environment of the stomach by virtue of its enzyme urease with which it splits urea and creates a cloud of ammonia around itself. Cultivating it in artificial culture media is difficult because of its peculiar requirements, a lack of oxygen and presence of carbon-dioxide for its growth.

In the laboratory it can be cultured inside an inverted bell jar, under which a candle has been lit which consumes the oxygen and releases some carbon-dioxide (please see illustration). Growth requires a couple of weeks when incubated. Infection is usually acquired in childhood itself and unless treated, can persist throughout the lifetime of the individual. The infection is acquired by feco-oral and possibly oro-oral routes. It is estimated that about half of the world's population is infected [4]. In about 80% of the infected population the

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Arrangement for culture of *Helicobacter pylori* in the laboratory

infection is asymptomatic, i.e. the organism stays as a commensal.

Consequences of helicobacter infection

1. Peptic ulcers

Peptic ulcers are caused by

- (a) Drugs of the Non Steroidal Anti Inflammatory Drug (NSAID) group which inhibit synthesis of prostaglandins (PG). PG-E₂ is protective to the gastric mucosa because it elicits alkaline mucus secretion and in its absence the gastric mucosa suffers injury by digestion due to pepsin, the powerful proteolytic enzyme.
- (b) Infection with *H. pylori*.

These causes are not mutually exclusive and it is possible that in an asymptomatic individual harbouring *H. pylori* as commensals, the organisms may cause invasion whenever there is NSAID-induced injury to the gastric mucosa.

However, there is consensus that in cases of peptic ulcers, the ulcer will not heal completely unless the *H. pylori* infection is eradicated.

2. Non-ulcer dyspepsia

There are thousands of patients who do not have endoscopically demonstrable gastric ulcers, but suffer from a variety of symptoms referable to the upper gastrointestinal tract. These include retching, belching, acidic regurgitation, retrosternal and epigastric burning, fullness and heaviness of the abdomen after food intake etc. Several patients find relief by taking some antacid, H₂ blocker or a proton pump inhibitor such as omeprazol; and continue to take these for months to years. All are available in several parts of the world as 'over-the-counter' medicines.

In India alone about 2250 million capsules of omeprazol are consumed annually, suggesting that at least 10 million patients are regular consumers. Most of them must have *H. pylori* infection.

3. Chronic atrophic gastritis

This is an autoimmune disease characterized by formation of antibodies against the gastric mucosa. The trigger for the development of chronic atrophic gastritis is the *H. pylori* infection. At first antibodies are formed against the organism but are not able to eradicate the infection. The body then produces antibodies against the gastric mucosa which result in chronic atrophic gastritis. There is destruction of the acid secreting mucosa, and in absence of the thick mucous layer, the organism loses its hold. Such a patient suf-

fers from ‘histamine fast achlorhydria’ and deficiency of intrinsic factor essential for the absorption of vitamin B₁₂.

In longstanding cases, some patients may develop gastric cancer [5].

Current therapy of helicobacter infection [6]

Currently the recommendation for eradication of *H. pylori* infection are triple drug combination containing:

- (1) Omeprazol or lansoprasol or pantoprazol Plus
- (2) Clarithromycin or tinidazol Plus
- (3) Amoxycillin For 14 days.

Prevention of *H. pylori* infection – currently a vaccine is under development [7].

The hypothesis

- (1) *H. pylori* does not colonise the fundus region of the stomach because some air is always found there.
- (2) If more air is swallowed, sucked or drunk and manoeuvred to the pyloric region by adapting inverted postures, helicobacter can be inhibited.
- (3) In most of us, at least in a majority of vegetarians, air is subconsciously sucked in through the mouth and esophagus and is moved down the gut by peristalsis. It is ultimately passed out as flatus. It can be said that the human gut has learnt to keep under check the growth of anaerobic organisms by air. Circulation of air through the gut is thus an immunological phenomenon. Aerophagy presents as a clinical problem when the otherwise easy entry of air into the esophagus becomes difficult because of some structural or functional problem related with the esophagus or the cervical spine.

- (4) The observed increased incidence of Gastro Esophageal Reflux Disorder (GERD) after eradication of *H. pylori* infection [8] may not be due to absence of the organism, but due to absence of the above immunological response to it. Obviously, if air is present in the fundus of the stomach, acid reflux is not possible.
- (5) Deliberately drinking air and manoeuvring to the pyloric region by postural manipulation can offer an effective and inexpensive method to achieve freedom from *H. pylori* infection, at the same time not allowing reflux esophagitis to occur.

Techniques to drink air

Air can be drunk by one of several techniques:

- (1) The easiest and the most convenient technique is ‘Malshe’s Punctured Straw Technique’ [9]: A simple straw commonly used for drinking cold drink is taken and a small pinhole is made in its upper part. When water is drunk using this punctured straw, air bubbles enter the pinhole and are swallowed with the water. By the time one drinks 100 ml water, about 250 ml air enters the stomach.
- (2) One can also drink air by deliberately making gurgling sounds while drinking water with a glass such as one with ‘bad manners’ does.
- (3) In the ancient Indian discipline of Yoga, drinking air has been advised using the ‘Kāki Mudrā’ [10] (The Cricoid Manoeuvre). With a little effort, one can acquire the Yogic skill of drinking air. This can be performed either in sitting or standing posture. Projecting the neck a little forward and contracting the sternocleidomastoid muscle pulls the sternum a little forward. This opens the gullet and allows air to enter the esophagus. Slight lordosis of the thoracic spine further helps the process (please see the photograph and X-rays).



A Barium Meal X-Ray. Normally some air is present in the fundus of the stomach.



Showing the position of neck in the yogic technique 'Kaki Mudrā



X-ray taken during Kaki-Mudra. The esophagus can be seen to be open in its full length.



After Kaki-Mudra the gastric air bubble enlarges this much.

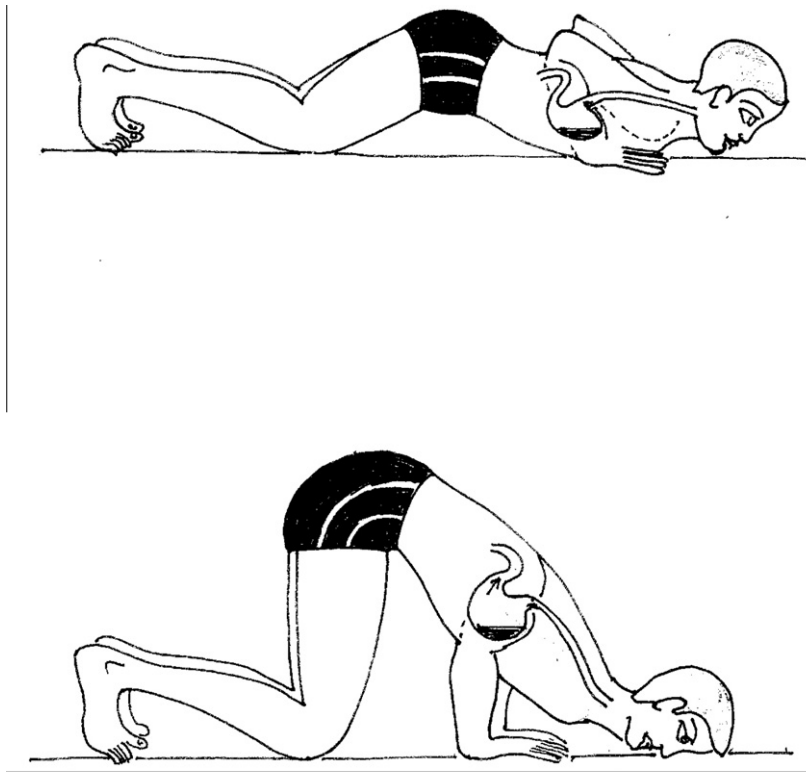


Barium Meal X-ray taken in inverted posture. The air is seen in the pyloric region. Some air has crossed the pylorus and reached the duodenum.

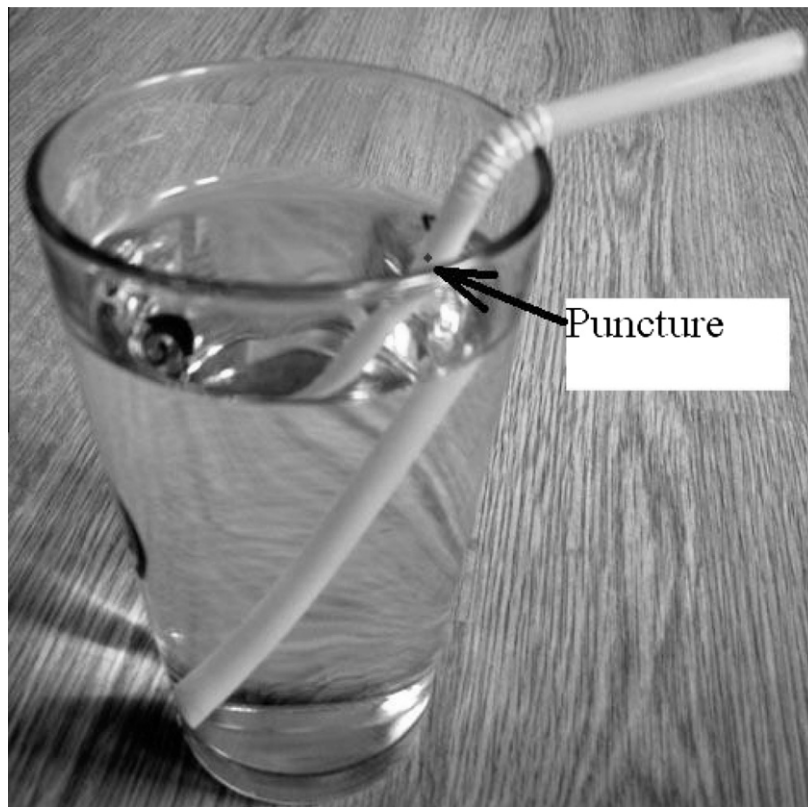


A simple pose to manoeuvre the ingested air to the pyloric region.

In Yoga this is known as *Shashānkāsana*



Two more postures that can be used for manoeuvring the ingested air to the pyloric region.



A punctured straw for use in drinking air (Malshe's Punctured Straw technique)

Swallowing air is somewhat different. A ball of air is made at the back of the throat and swallowed as per swallowing movements similar to that made for swallowing semisolid or liquids. The air goes down the esophagus with peristalsis.

Manoeuvring ingested air to the pyloric region

The ingested air can be manoeuvred to the pyloric region by adopting any such posture that brings the pylorus above the fundus of the stomach. In Yoga there are several *āsanas* (postures) in which the trunk is inverted. Since anatomically the duodenum is fixed to the posterior abdominal wall, keeping the trunk bent forward in a horizontal position, or being in the knee-elbow or the knee-chest position shifts the air to the pyloric region. An X-ray barium meal taken in an inverted posture clearly shows the air to be present in the pyloric region [11].

Implications

Use of air drinking technique can save millions of dollars and rupees spent in antacids, H₂ blockers, proton pump inhibitors, anti-*H. pylori* drugs and further in peptic ulcer surgeries. Moreover, loss of man hours due to the above mentioned illnesses, mortality and morbidity can be saved by popularizing this method of drinking air and manoeuvring to the pyloric region.

Conflicts of interest statement

None declared.

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