AYUSHDHARA
ISSN: 2393-9583 (P)/ 2393-9591 (O)
An International Journal of Research in AYUSH and Allied Systems

Case Study

MANAGEMENT OF HYPOTHYROIDISM THROUGH *NASYA KARMA* AND *SHAMANA AUSHADHI*

Vandana Hardasbhai Tarkhala[1]*, Arun Gupta[2]
*[1]PG Scholar, [2]Professor and HOD, PG Department of Panchakarma, Chaudhary Brahm Prakash Ayurved Charak Sansthan, New Delhi, India.

Article info
Article History:
Received: 11-01-2026
Accepted: 12-02-2026
Published: 15-03-2026

KEYWORDS:
Hypothyroidism, *Vata-Kapha Dusti, Nasya Karma, Ashwagandha Ghrit, Shaman Chikitsa.*

ABSTRACT

Hypothyroidism is a functional disorder of the thyroid gland caused by inadequate synthesis or impaired action of thyroid hormones, resulting in a generalized reduction of metabolic activity. Clinically, it manifests as fatigue, lethargy, weight gain, constipation, cold intolerance, dry skin, hair loss, and menstrual disturbances. Epidemiological studies indicate a higher prevalence among women, particularly during the reproductive age group. Psychological stress and anxiety further contribute to thyroid dysfunction due to the thyroid gland's sensitivity to neuroendocrine regulation. Subclinical hypothyroidism, characterized by elevated thyroid-stimulating hormone (TSH) levels with normal thyroxine (T4) levels, often remains underdiagnosed despite its adverse impact on quality of life. These factors highlight the importance of evaluating hypothyroidism from an Ayurvedic perspective and developing evidence-based management strategies rooted in traditional medicine. This case report presents a 45-year-old female patient diagnosed with hypothyroidism, who reported symptoms including swelling over whole body, breathlessness, fatigue, generalized weakness, muscle cramps, hair fall, impaired concentration, anxiety, disturbed sleep, and joint pain. The symptoms had been present for approximately five months. The patient was not on any allopathic medication at the time of presentation, as the diagnosis was recent. After five months of Ayurvedic intervention, marked symptomatic improvement was observed, along with a significant reduction in serum TSH levels from 11.813mIU/L to 4.2mIU/L.

INTRODUCTION

The thyroid gland plays a pivotal role in the regulation of metabolism, growth, development, and overall energy balance. [1] The gland produces and releases the hormones thyroxine (T4) and triiodothyronine (T3), which act on nearly all body tissues to regulate oxygen utilization, basal metabolic rate, heat production, and the metabolism of carbohydrates, proteins, and fats.[2] The synthesis and secretion of thyroid hormones are tightly controlled by the hypothalamic–pituitary–thyroid (HPT) axis. This regulatory pathway involves the release of thyrotropin-releasing hormone (TRH) from the hypothalamus, followed by thyroid-stimulating hormone (TSH) secretion from the anterior pituitary. The negative feedback mechanism maintains optimal hormonal levels necessary for normal physiological function.[3] Hypothyroidism ranges from subclinical to overt forms. Subclinical hypothyroidism is characterized by elevated TSH with normal T4 levels, whereas overt hypothyroidism presents with elevated TSH and reduced thyroid hormone levels along with clear clinical manifestations. [4] Both forms are more common in women and can adversely affect quality of life. [5]

Multiple studies have estimated the incidence of subclinical hypothyroidism to range between 3% and 10% in the general population, with rates increasing to 18%–20% among elderly individuals, depending on the population studied.[6-7] The condition is more prevalent in women and shows a rising trend with advancing age. [8]

Access this article online
Quick Response Code
https://doi.org/10.47070/ayushdhara.v13i1.2511

In conventional (allopathic) medicine, levothyroxine remains the primary treatment for hypothyroidism and is effective in normalizing elevated thyroid-stimulating hormone (TSH) levels. However, despite achieving biochemical correction, a significant proportion of patients continue to experience persistent clinical symptoms, indicating incomplete symptomatic relief.

In Ayurveda, no single disease entity encompasses the complete symptomatology of hypothyroidism. However, its clinical manifestations can be correlated with *Bahudoshavastha*- specifically *Vata-Kapha Dusti*, presenting as *Avasada* (depression), *Klama* (fatigue), *Sthaulya* (obesity), *Alasya* (malaise), *Daurbalya* (weakness), *Avipaka* (indigestion), *Aruchi* (anorexia), *Shrama* (exhaustion), and *Klaibya*.[9] Additionally, features resembling Doshaprakopavastha [10] may be observed, such as *Kosthatoda* and *Sanchara* in *Vata Prakopa*, *Amlika*, *Pipasa*, and *Paridaha* in Pitta Prakopa, and *Annadvesha* and *Hridayotkleda* in *Kapha Prakopa*.[11] The thyroid gland, located in the *Galapradesha*, falls under *Jatrurdhva Pradesha*. [12-15]

Acharyas have emphasized *Nasya Karma* as the foremost treatment for diseases occurring above the clavicle.[16]

"*Nasa hi shiraso dvaram*"
(*Charaka Saṃhita, Siddhi Sthana* 9/88)

Thus, *Nasya* provides a direct therapeutic approach for disorders involving neuro-endocrine regulation and *Kapha-Vata* imbalance.

The patient selected for this study falls under category of Subclinical Hypothyroidism and was managed using *Panchakarma* therapy. *Ashwagandha Ghrit Nasya* (nasal instillation therapy) was chosen as the primary intervention, as hypothyroidism can be correlated with *Urdhvajatrugata Vyadhi*, and *Nasya* is described as the principal therapeutic modality for disorders involving the supraclavicular region. In addition to *Panchakarma* therapy, *Shamana Chikitsa* (palliative management) was administered, including *Triphala Guggulu, Punarnava Mandoora, Dashamoola Kwatha,* and *Triphala Churna*. Appropriate *Pathya* and *Apathya* (dietary and lifestyle guidelines) were also advised as part of the comprehensive management approach.

AIM

To treat patient of the Hypothyroidism on the basis of Ayurvedic treatment protocol.

OBJECTIVES

To evaluate the clinical efficacy of *Ashwagandha Ghrit Nasya* and *Shamana Aushadhi* in Hypothyroidism based on subjective and objective parameters.

Case Report

On 27/06/2025, a female patient of age 45 years came to Thyroid clinic of Chaudhari Brahm Prakash Ayurved Charak Sansthan with following complaints

1. Swelling over whole body
2. Joint pain
3. Fatigue
4. Breathlessness
5. Constipated bowel
6. Increased weight
7. Disturbed sleep

Duration: 2 months

History of Present Illness

The problem started with the complaint of burning sensation at epigastric region, sour belching, constipated bowel, bloating of abdomen and indigestion leading to swelling over whole body, body ache, fatigue, disturbed sleep and increase in weight from 60kg to 71kg along with difficulty in breathing during daily life chores and weakness all day for the past 2 months. The patient was diagnosed with hypothyroidism one week ago, but was not on thyroxine supplementation. Due to these complaints, she visited Thyroid Clinic, CBPACS on 27th June 2025 for ayurvedic treatment.

Past History

There was no history of any surgical intervention, diabetes mellitus or hypertension. No known drug or food allergies were reported by the patient.

Personal History

The patient was consuming a vegetarian diet with a reduced appetite. She complained of incomplete evacuation of bowel, while micturition was normal. Sleep was disturbed. There was no history of any addiction. Physical activity was irregular, suggesting a sedentary lifestyle contributing to her metabolic complaints.

Family History

There was no reported family history of hypothyroidism. However, a positive family history of metabolic disorders such as diabetes mellitus and hypertension was present. No known genetic disorders were reported in the family.

Table 1: Vitals Examination

Vital Parameter	Observation
Blood Pressure (BP)	130/80 mm of Hg
Pulse Rate (PR)	72/min
Respiratory Rate (RR)	18 /min
Temperature	Afebrile (98.4°F)
Weight	71 Kg

Table 2: Systemic Examination

System	Findings
General examination	Conscious, oriented, moderately built
Cardiovascular system	S1 S2 normal, no murmurs
Respiratory system	Bilateral air entry present, no added sounds
Gastrointestinal system	Soft abdomen, sluggish bowel sounds
Central nervous system	Conscious, oriented, normal reflexes
Locomotor system	Pitting oedema present, normal tone
Skin	Dryness present

Local Examination

Inspection

No visible swelling or enlargement was observed in the thyroid region. The skin over the neck appeared normal, with no discoloration or dilated veins.

Palpation

No tenderness, nodules, or masses were felt in the thyroid area. There was no rise in local temperature, and the thyroid gland was not palpable. No cervical lymph nodes were enlarged.

Auscultation

No bruit was heard over the thyroid region on auscultation.

Diagnosis: Hypothyroidism

Treatment Plan

Table 3: Plan of *Panchakarma* Procedure (*Nasya Karma*)

Phase	Procedure	Drug / Material Used	Dose / Duration	Purpose
Purva Karma	*Urdhvajatrugat Abhyang*	*Tiltail*	5 min	To achieve external olation, sudation and mobilize and liquify *Dosha* vitiated *Dosha*.
	Swedana	*Dashmool Kwath*	Till perspiration over face	
Pradhana Karma	*Nasya*	*Ashwagandha Ghrit*	15 days/month for 5 months	
Paschat Karma	Gargles with warm water	Water	3 times	To remove adherent *Doshas* and *Sneha*
	Dhumpaan	*Dhumvarti*	9 times / each nostril	

Table 4: Plan of *Shaman Chikitsa*

Date	Medication	Dose	Duration	Targeted Complains	Rationale to select	Effect
27/06/2025	*Avipattikar Churna*	5gm at bed time with warm water	15 days	1)Burning sensation at epigastric region 2)Sour belching 3)Constipated bowel 4)Bloating of abdomen 5)Indigestion	The presenting symptoms indicate *Pitta–Vata Dosha Dushti*. Both medications act synergistically to pacify the vitiated *Pitta* and facilitate *Vatanulomana*, thereby restoring *Doshic* balance.	Sour belching and burning sensation were significantly relieved. Significant improvement was observed in constipated bowel,

				6)Decreased appetite		indigestion, and decreased appetite.
11/07/2025	*Triphala guggulu* *Dashmool kwath* *Punarnavadi mandoor* *Triphala churna*	1gm twice a day 30ml twice a day 500mg twice a day with water 5 gm at bed time with warm water	28 days	1)Swelling over whole body 2) Breathlessness 3)fatigue 4) Joint pain 5)Muscle cramps 7)Tendency of Constipated bowel	The medication was selected to correct *Vata–Kapha Dosha Dushti*. *Triphala Guggulu* acts on *Mandagni*, facilitates *Amapacana*, and exerts *Vatashamana* action. *Guggulu*, owing to its thyromodulatory property, helps in improving thyroid function. *Dashamula Kwatha*, administered as *Anupana*, enhances the therapeutic efficacy of *Triphala Guggulu*. *Punarnavadi Mandura* improves *Agni* and acts as *Mutrala* and, thereby reducing fluid retention and *Shothahara* inflammation. *Triphala Curna* functions as a *Rasayana* and promotes *Vatanulomana*.	Improvement was observed in several symptoms, including a reduction in frequency of muscle cramps, constipated bowel, a sense of lightness in the body, and improved activeness.
09/08/2025	*Triphala guggulu* *Chandraprabhavati* *Triphala churna*	1gm twice a day 500mg twice a day with milk 5gm at bed time warm water	60 days	1)Moderate swelling over whole body 2)joint pain 4)Fatigue	*Chandraprabha Vati* acts as a *Rasayana* and is described as *Sarvarogapranashini*. Owing to its *Mutrala* property, it helps in reducing *Shotha* (swelling) and imparts *Bala* and *Vrshyata.* thereby improving overall strength of the body.	Improvement was observed in several symptoms, including a reduction swelling over whole body, joint pain and fatigue.
09/10/2025	*Chandraprabhavati* *Yastimadhuchurna+ godanti Bhasma*	500mg twice a day with milk 3gm+250mg twice a day with milk	45 days	1)Mild swelling over whole body 2)Occasional joint pain 3)Occasional anxiety	*Yashtimadhu* is a *Medhya Dravya* that helps alleviate complaints such as anxiety, and disturbed sleep. *Godanti Bhasma*, being *Shita Virya*, pacifies vitiated *Pitta Dosha* and provides a natural source of calcium, thereby supporting neuronal activation and neuromuscular function.	Significant clinical improvement was observed across all presenting symptoms.

SOP of *Nasya*

1. Pre-procedural Measures

a) The patient was clinically assessed and stabilized prior to the procedure.

b) The entire procedure was explained in detail, and informed consent was obtained.

c) The patient was then positioned supine on the procedure table.

d) *Sthanika Snehana* (local oleation) was performed over the neck, face, and forehead using *Tila Taila*, followed by *Sthanika Swedana* (local fomentation) with *Dashmool Kwath*.

2. Procedure *(Nasya Karma)*

a) The patient's neck was placed in slight extension at approximately 45°.

b) *Ashwagandha Ghrit* was gently warmed by placing the container in hot water.

c) The tip of the nose was elevated using the middle finger, and eight drops of lukewarm *Ashwagandha Ghrit* were instilled into each nostril alternately, while the opposite nostril was gently closed.

d) The patient was instructed to inhale the oil slowly and comfortably.

e) The same procedure was repeated for the other nostril.

3. Post-procedural Measures

a) Following *Nasya*, the patient was advised to expel the accumulated sputum and advised to do gargles with warm water.

b) Excess oil from the face was wiped using a clean cotton cloth.

c) *Dhumapana* (medicated fumigation) was then administered to eliminate residual *Kapha*.

d) The patient was advised to adhere to appropriate *Pathya* and *Apathya* (dietary and lifestyle guidelines).

OBSERVATIONS AND RESULTS

Table 5: Clinical Symptoms

S.No.	Subjective Parameter	Gradation	
		Before treatment	After treatment
1.	Swelling over whole body	3	1
2.	Breathlessness	2	1
3.	Fatigue	3	1
4.	Disturbed sleep	2	0
5.	Joint pain	2	0
6.	Constipated bowel	2	0
7.	Weight gain	71	65

Table 6: Gradation of Clinical Symptoms (0–3 Scale)

Symptoms	0	1	2	3
Generalized swelling	No swelling	Mild, occasional	Persistent, noticeable	Severe, pitting edema
Breathlessness	None	On heavy exertion	On moderate activity	At rest
Fatigue	None	After exertion	Persistent, daily	Severe, limits routine
Disturbed sleep	Normal sleep	Occasional disturbance	Frequent	Severe insomnia
Joint pain	None	Mild	Moderate	Severe
Constipated bowel	Regular bowel	Occasional constipation	Frequent constipation	Persistent constipation

Table 7: Thyroid Function Test

S.No.	Objective Parameters	Changes in TFT		
		Normal values	Before treatment (22/06/2025)	After treatment (28/11/2025)
1.	T3	0.60-1.81	1.3 ng/mL	1.43 ng/mL
2.	T4	3.2-12.6	6.3ug/dL	8.3 ug/dL
3.	TSH	0.55-4.78	11.813 µIU/mL	4.2 µIU/mL

DISCUSSION

In hypothyroidism, deficiency of thyroid hormones results in a hypometabolic state affecting multiple physiological systems. Thyroxine, hormone secreted by the thyroid gland, plays a pivotal role in cellular metabolism and growth. From an Ayurvedic standpoint, thyroid hormone may be correlated with *Tejo Mahabhuta*, which constitutes an essential component of thyroid hormones; hence, thyroid hormone activity may be interpreted as possessing *Agni Aṁsha*. Therefore, dysfunction of the thyroid gland can be conceptualized as a manifestation of *Agni Dushti*.

Clinically, hypothyroidism exhibits feature suggestive of *Vata-Kapha Pradhana Dosha Dushti*. The underlying pathology can be explained by *Jatharagni Mandya*, leading to *Dhatvagni Mandya*, resulting in impaired tissue metabolism and accumulation of metabolic waste. Based on this understanding, therapeutic interventions having *Kapha-Vata Shamaka*, *Agnidipana*, and *Amapacana* properties were selected.

The administration of *Panchakarma*, particularly *Nasya Karma*, is justified as hypothyroidism may be correlated with *Urdhva-jatrugata Vyadhi*, for which *Nasya* is considered the prime line of treatment. Concurrent *Shamana Chikitsa* supported systemic correction of *Agni* and *Dosha* imbalance. The observed improvement in clinical symptoms along with a significant reduction in serum TSH levels over five months suggests the effectiveness of the integrated Ayurvedic approach in the management of hypothyroidism.

Probable Mode of Action

In hypothyroidism, the primary pathology is localized to the thyroid gland, which is situated in the *Urdhvajatru Pradesha* (region above the clavicle). The condition predominantly involves *Kapha* and *Vata Dosha*, for which *Nasya Karma* is considered the most appropriate therapeutic intervention. Classical Ayurvedic texts describe *Brumhan Nasya* as especially beneficial in the management of *Kaphaja Urdhva-jatrugata Vikara*.

Ashwagandha Ghrit

Because of its antistress, anxiolytic, anti-inflammatory, adaptogenic, cognition enhancing, *Vatahara* and *Rasayan* properties can be used in the patients of hypothyroidism there by providing relief in symptoms like pallor, swelling, fatigue etc. And in the form of *Ghrit* because of its *Yogavahi* and *Tridoshshamak* property. [18]

***Triphala Guggulu*:** *Triphala Guggulu* exhibits *Kapha–Vata Shamaka*, *Agnidipana*, *Amapacana*, and *Lekhana* properties, making it appropriate for the management of hypothyroidism, which is interpreted as *Agni Dushti* with *Kapha-Vata* predominance. The *Triphala* constituents enhance *Jatharagni* and *Dhatvagni*, while *Guggulu*, owing to its thyromodulatory and *Shrotoshodhana* actions, aids in reducing *Kapha* accumulation.

Punarnavadi mandur: *Punarnava* acts as a *Mutrala* and *Shothahara*, helping to reduce edema and fluid retention, while *Mandura* supports *Rasa–Rakta Dhatu* metabolism and improves tissue nourishment. By enhancing *Jatharagni* and *Dhatvagni*, and facilitating *Shrotoshodhana*

***Dashmool Kwath*:** These ingredients help to pacify *Vata* and *Kapha doshas* and helps to optimize metabolism.

***Triphala Churna*:** It helps to regulate smooth bowel movements and acts as laxative and acts as *Rasayan.*

Chandraprabha Vati acts as a *Rasayana* and is described as *Sarvarogapranashini*. Owing to its *Mutrala* property, it helps in reducing *Shotha* (swelling) and imparts *Bala* and *Vrshyata*.

Serum TSH reduced from 11.813µIU/ml to 4.2µIU/mL, reaching near-normal levels, while Free T4 and Free T3 remained within normal limits throughout the treatment period, indicating stable peripheral hormone conversion. Owing to these improvements with significant improvement in symptoms. These findings indicate that *Nasya* and *Shaman Chikitsa* helped restore *Agni*, reduce *Ama*, and re-establish *Dosha Samya*, leading to both symptomatic and biochemical improvement.

Results Outcome

- Reduction in serum TSH from 11.813µIU/ml to 4.2µIU/mL after *Nasya Karma* and *Shaman Chikitsa*
- Free T3 remained within normal limits (0.60-1.81ng/mL)
- Free T4 remained within normal limits (3.2-12.6ug/dL)
- Marked reduction in difficulty in breathing and weakness.
- Normalization of bowel habits with complete evacuation.
- Improvement in appetite and digestion indicating better *Agni.*
- Improvement in sleep quality and overall wellbeing.
- No adverse effects or complications observed during or after therapy.

CONCLUSION

In this case of hypothyroidism correlated with *Vata-Kapha Pradhana Dosha Dushti*, administration of *Nasya karma* with *Ashwagandha Ghrit* and *Shaman Chikitsa* resulted in significant clinical and biochemical improvement. Subjective symptoms such as showed

marked relief following therapy. Objectively, serum TSH levels decreased from 11.813µIU/ml to 4.2µIU/ mL, while Free T4 and Free T3 remaining within normal limits. The metabolic improvement achieved through correction of *Agni*, reduction of *Ama*, *Strotoshodhana* and restoration of *Dosha Samya* allowed successful reduction of all symptoms without adverse effects. This case suggests that *Nasya Karma* using *Ashwagandha Ghrit* with *Shaman chikitsa* can serve as a safe, effective, and holistic adjunct approach in the management of hypothyroidism, addressing the underlying metabolic dysfunction rather than providing only symptomatic relief.

Informed Consent

Written informed consent was obtained from the patient prior to initiation of *Nasya Karma*. The nature of the procedure, expected benefits, possible discomforts, and follow-up requirements were clearly explained, and the patient voluntarily agreed to undergo the treatment.

Patient Perspective

The patient reported feeling lighter and more energetic after treatment, with improvement in bowel habits and reduction in fatigue. She expressed satisfaction with the therapy due to symptomatic relief in Swelling over whole body, body ache, fatigue, disturbed sleep. Weight decreased 7kg and reduction of the blood TSH Levels.

REFERENCES

1. Standring S, editor. Gray's Anatomy: The Anatomical Basis of Clinical Practice. 41st ed. London: Elsevier; 2016. p. 461–463.
2. Hall JE, Guyton AC. Guyton and Hall Textbook of Medical Physiology. 14th ed. Philadelphia: Elsevier; 2021. p. 907–917.
3. Almandoz JP, Gharib H. Hypothyroidism: etiology, diagnosis, and management. Med Clin North Am. 2012; 96(2): 203–221.
4. Jameson JL, De Groot LJ, eds. Harrison's Endocrinology. 2nd ed. McGraw Hill; 2020.
5. 5. Melmed S, Polonsky KS, Larsen PR, Kronenberg HM, eds. Williams Textbook of Endocrinology. 13th ed. Elsevier; 2016.
6. Canaris GJ, Manowitz NR, Mayor G, Ridgway EC. The Colorado thyroid disease prevalence study. Arch Intern Med. 2000 Feb 28; 160(4): 526-34.
7. Vanderpump MP, Tunbridge WM, French JM, Appleton D, Bates D, Clark F, Grimley Evans J, Hasan DM, Rodgers H, Tunbridge F. The incidence of thyroid disorders in the community: a twenty-year follow-up of the Whickham Survey. Clin Endocrinol (Oxf). 1995 Jul; 43(1): 55-68.
8. Hollowell JG, Staehling NW, Flanders WD, Hannon WH, Gunter EW, Spencer CA, Braverman LE. Serum TSH, T(4), and thyroid antibodies in the United States population (1988 to 1994): National Health and Nutrition Examination Survey (NHANES III). J Clin Endocrinol Metab. 2002 Feb; 87(2): 489-99.
9. Pt. Kashinath Shastri, The Charak Samhita of Agnivesa, Part 1, 2020, Varanasi, Chaukhambha Bharti Acadmy, Page no. 278
10. Dr. Ambikadatta Shastri Sushrut Samhita, Purvardh, 2020, New Delhi, Chaukhambha Publication, Page no. 119
11. Dr. Ambikadatta Shastri, Sushrut Samhita, Purvardh, 2020, New Delhi, Chaukhambha Publication, Page no.356
12. Agnivesha. Charaka Samhita. Revised by Charaka and Dridhabala. Chikitsa Sthana; 15/44. Varanasi: Chaukhambha Orientalia; Reprint edition.
13. Agnivesha. Charaka Samhita. Revised by Charaka and Dridhabala. Chikitsa Sthana; 15/16. Varanasi: Chaukhambha Orientalia; Reprint edition.
14. Sushruta. Sushruta Samhita. Nidana Sthana; 11/14. Varanasi: Chaukhambha Orientalia; Reprint edition.
15. Vagbhata. Ashtanga Hridaya. Sutra Sthana; 20/1. Varanasi: Chaukhambha Orientalia; Reprint edition.
16. Vagbhata. Ashtanga Hridaya. Sutra Sthana; 20/1. Varanasi: Chaukhambha Orientalia; Reprint edition.
17. Vagbhata. Ashtaṅga Hrdaya. Sutra Sthana, Adhyaya 20 (Nasya Vidhi). In: Tripathi B, editor.
18. Agnivesha. Caraka Saṁhita. Sutra Sthana, Adhyaya 13, Shloka 13. In: Shastri K, Caturvedi G, editors.

Cite this article as:
Vandana Hardasbhai Tarkhala, Arun Gupta. Management of Hypothyroidism Through Nasya Karma and Shamana Aushadhi. AYUSHDHARA, 2026;13(1):280-286.
https://doi.org/10.47070/ayushdhara.v13i1.2511
Source of support: Nil, Conflict of interest: None Declared

***Address for correspondence**
Dr. Vandana Hardasbhai Tarkhala
PG Scholar,
PG Department of Panchakarma,
Chaudhry Brahm Prakash Ayurved Charak Sansthan, New Delhi.
Email:
vandanatarkhala5768@gmail.com