lingual thyroid our experience

Abstract:

Lingual thyroid is an uncommon congenital disorder of thyroid gland development, resulting in a lack of descend of the gland from foramen caecum to its normal prelaryngeal location. In this paper we discuss a series of cases of ectopic thyroid gland its incidence, clinical presentation, sex ratio, age group, endocrine status, radiological features and appropriate surgical approaches.

Introduction:

Lingual thyroid is a rare developmental disorder caused due to aberrant embryogenesis during the descent of thyroid gland to the neck. Lingual thyroid is the most frequent ectopic location of thyroid gland. Prevalence rates of lingual thyroid is about 1 in 1,00,000 to 1 in 3,00,000. Managing this condition is filled with historical controversies ranging from leaving it alone to surgical removal of the lesion.

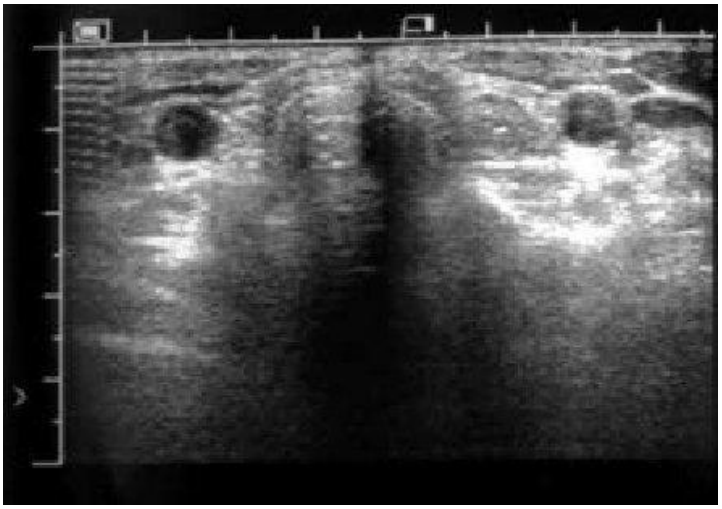
Patients and methods:

A study was conducted in stanley medical college,chennai from the year 2009 october to 2011 october.In the 3 years period we had 7 cases of lingual thyroid.Their presentation,sex ratio,age group,clinical features,endocrine status,radiological features,treatment modalities are discussed here.

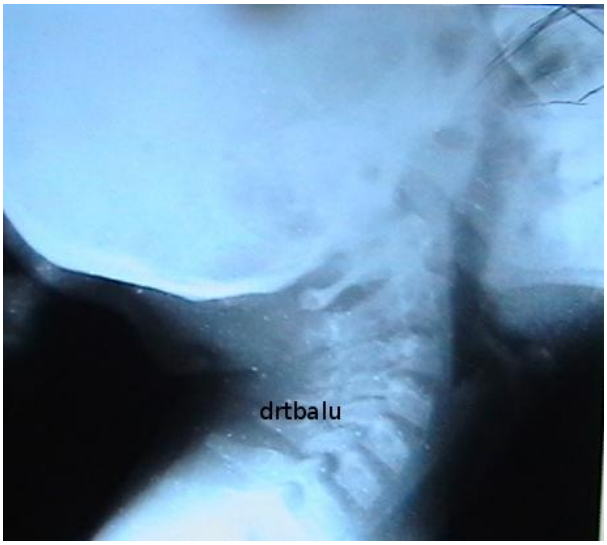
3 out of 7 case presented with dysphagia.2 cases presented with dysphonia.one case presented with bleeding through the mouth. Whereas the presenting symptom of other case was quit different. she complained of swelling in the tongue. she did not express any local symptoms. But she had generalised symptoms like tiredness,and loss of apettite inspite she had recent weight gain.

The highlighting thing we saw in our study is all cases were females.[1] Previous study reports stated that gender ratio as 4:1 to 7:1.[1]But we did not have even one male case in this 3 years period. And the interesting thing is all females were between 10 to 35 in whom where there is extra demand of thyroxin by the body which causes it to undergo physiological enlargement.

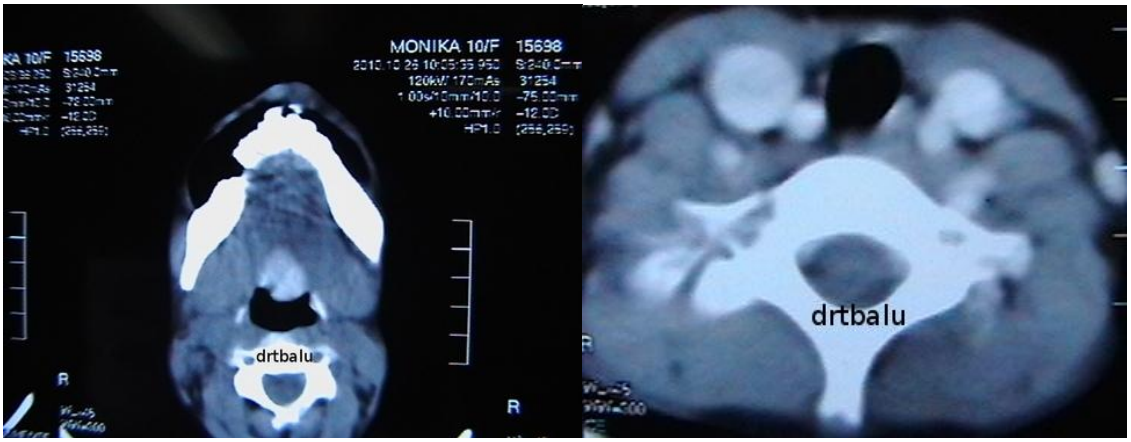
On examination a mass covered with pinkish mucosa seen in the posterior 1/3 of tongue just posterior to the circumvallete papillae. The mass was solid firm in consistency not mobile in any planes. We did not find thyroid by palpation in any of our cases.[6,12,13] Videolaryngoscopic examination done for all cases to predict the lower extent of the mass. It varies from dorsum of the tongue to vallecula. In one case lower border seen by depressing the tongue with tongue depressor.



We admitted all 7 cases in our ward, govt stanley hospital and worked up. Ultrasonogram shows absence of thyroid tissue in the neck



.X ray soft tissue neck lateral view revealed presence of soft tissue shadow in the region of tongue and it demonstrates lower extent of the mass.



CT Scan taken for all patients for the following purposes.

1.For the accurate assesment of extent of the mass lesion.

2.Vascularity of the mass (with contrast CT).
3.To rule out the normal thyroid gland in the neck.

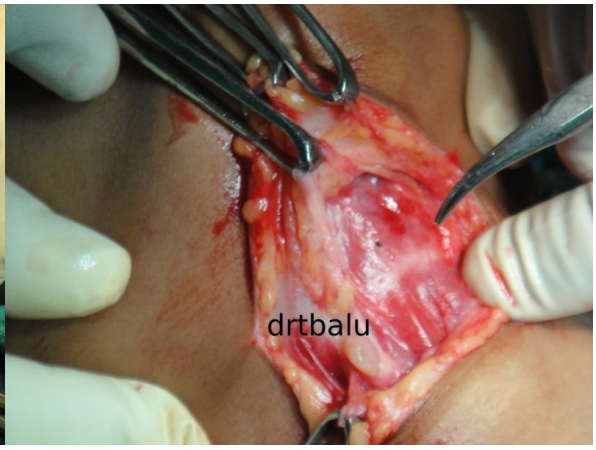
Regarding endocrine status,[2,3] 4 out of 7 patients were euthyroid whereas 3 were hypothyroid. In those patients suppressing doses ofs thyroxin was started immediately as by the endocrinologist advice.

We did not advise FNAC for any patients to avoid unnecessary bleeding. Similarly instead of biopsying the lesion total excision was planned.

As mentioned earlier in one of our case posterior extent of the mass was visualised by depressing the tongue with tongue depressor. For that case **transoral** [7] excision was planned. Surgery was performed under general anaesthesia. Nasotracheal intubation was done as requested by us. This is to avoid troublesome bleeding following intubation trauma. Patient was placed in Rose's position. Boyles Davis mouth gag was used to hold the mouth open. Throat was packed tightly using ribbon gauze to avoid spillage into larynx. The mass was held with a tenaculum forceps and was pulled anteriorly. The anterior border was incised using diathermy cautery. The tumor was gently dissected and stripped away from the lingual tissue. Perfect hemostasis was secured by coagulating the bleeding points seen in the base of the tumor.

In rest of the cases lower border could not be visualised by depressing the tongue with tongue depressor. Only visualised by videolaryngoscopy and computerised tomography.In those cases suprahyoid [7,21] approach was decided

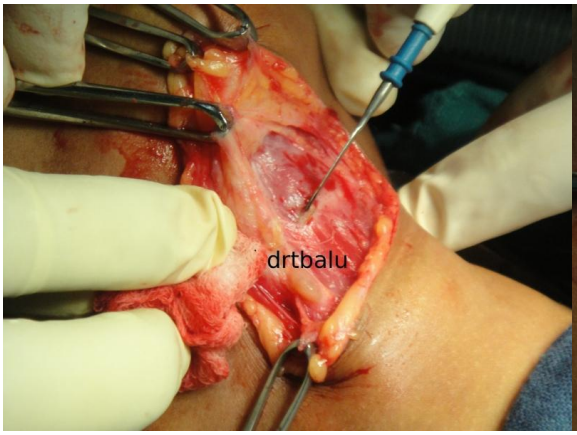
Incision:
Transverse skin crease incision was made at the level of hyoid bone. Skin, subcutaneous tissue and cervical fascia are elevated in the subplatysmal plane. Sticking on to the subplatysmal plane helps in preserving the cervical branches of facial nerve. Dissection in this plane is continued and the flap is raised above the level of hyoid bone.

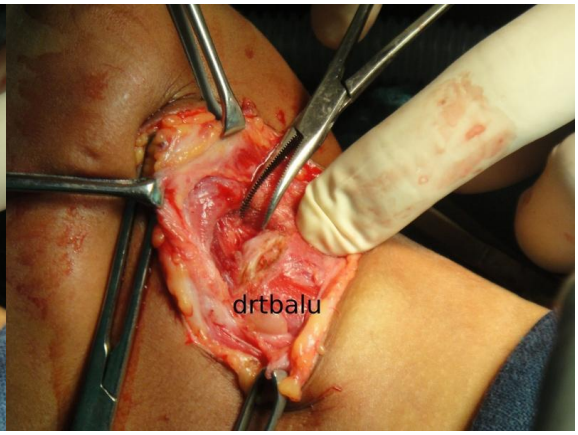


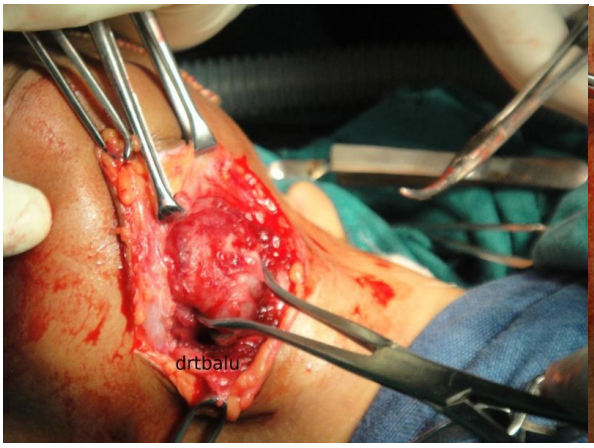
Incision being widened by using cutting diathermy

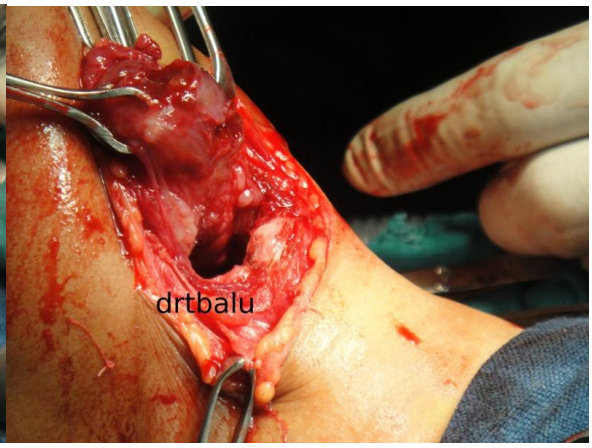
Supra hyoid dissection:

In this stage the muscles attached to the hyoid bone were cut and dissected subperiosteally.

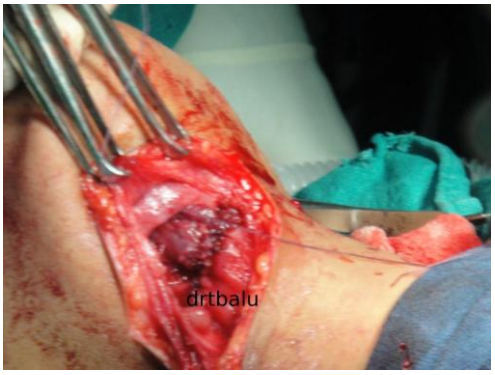








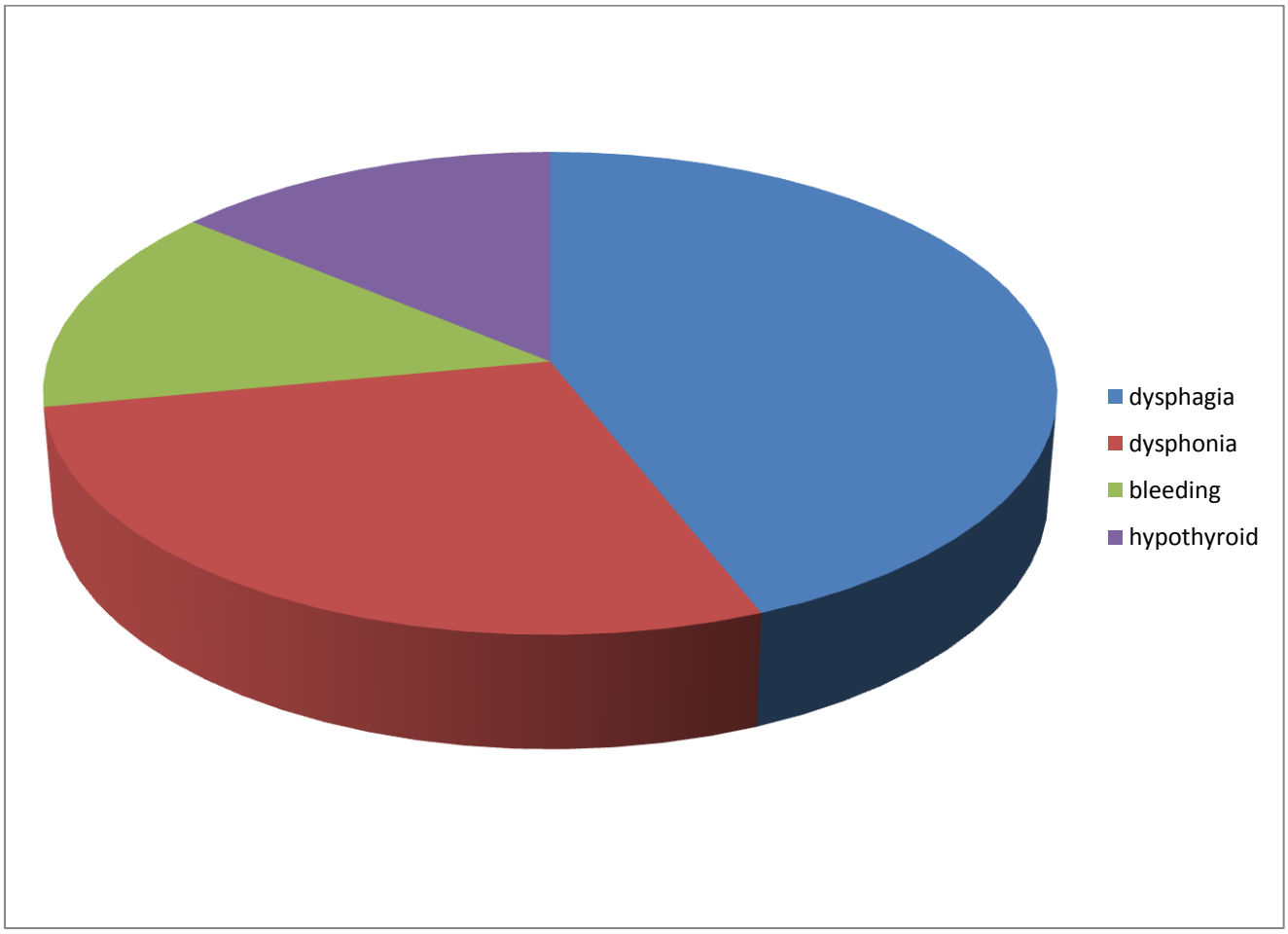
supra hyoid muscles were split and the oral cavity was entered. Using a finger guide inside the oral cavity the mass was pushed downwards and delivered via the suprahyoid neck incision. The mass was removed in full. The wound should be meticulously closed in layers.

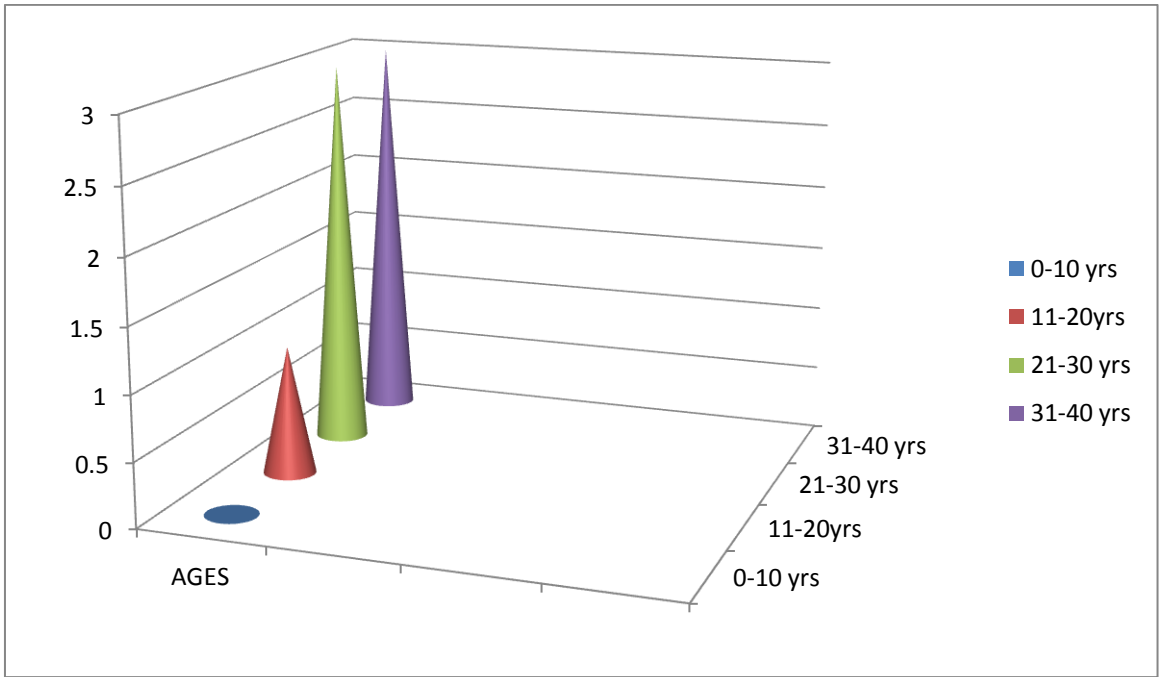


Ryles tube should be inserted to facilitate early feeding. Ideally the Ryles tube should be left in place at least for 3 days.
Lingual thyroid attached to the base of tongue

After surgery all these patients should be started on oral supplemental doses of
thyroxine.

	Case 1	2	3	4	5	6	7
Presentation	dysphagia	dysphagia	dysphagia	dysphonia	dysphonia	bleeding	Hypothyroid features
Gender	F	F	F	F	F	F	F
AGE	33	27	30	26	35	11	33
Endocrine status	euthyroid	hypothyroid	hypothyroid	euthyroid	euthyroid	hypothyroid	Hypothyroid
USG Neck	Absence of normal thyroid	Absence of normal thyroid	Absence of normal thyroid	Absence of normal thyroid	Absence of normal thyroid	Absence of normal thyroid	Absence of normal thyroid
Surgical approach	Suprahyoid approach	Suprahyoid approach	Suprahyoid approach	Suprahyoid approach	Suprahyoid approach	Transoral appraoch	Suprahyoid approach





Discussion:

Lingual thyroid is a rare developmental disorder of thyroid gland during its passage from the floor of the primitive foregut to its final pretracheal position. Prevalence [1,11]ranges from 1 in 1,00,000 to 1 in 3,00,000.However, in autopsy studies[1,17],the prevalence ranges from 7-10%. In 70- 90% of cases it is the only thyroid tissue present. It is predominant in females[1], especially population of Asian origin.[18] Sex ratio between 4:1 to 7:1.Eventhough it may manifest in any age it is commonly seen in younger ages. Most cases are asymptomatic.[2,3,11] Symptomatic cases[2,3,11,18] present with dysphagia, dysphonia, bleeding [14],snoring,sleep apnea[7] and respiratory obstruction.[9] Rarely patients present with hypothyroid features.[12] In most of the patients normal thyroid tissue is absent. But rarely some patients present with normal thyroid gland. Very rarely second ectopic tissue[20,21] also presents in some patients. Most cases are euthyroid.[2] Some cases are hypothyroid.[2] Hyperthyroidism[19] is extremely rare and only two cases have been reported in the literature. Primary thyroid carcinomas[10,22] arising from ectopic thyroid tissue are uncommon and have been reported. Such malignancies are usually diagnosed only after surgical excision of the lesion.[22] Surgical treatment depends on posterior extent of the mass. If posterior extension of the mass seen on depressing the tongue, the best surgical approach is transoral. [7] Since it does not affect deeper structures; thus,complications,such as lingual nerve injury and deep cervical infections are avoided.[7] Otherwise suprahyoid approach is chosen for better exposure and control of bleeding.[7,21]

References:

1.sauk JJ Ectopic lingual thyroid 1970,102,239-243.

2.Benhammou A, Benchekh R,Benbouzid MA,Boulaich M,Essaki L,Kzadri M Ectopic lingula thyroid B ENT,2006,2,121-122.

3.Thomas G,Hoilat R Daniels JS Kalagie W ectopic thyroid;a case report.int oral maxillofac surgery 2003,32,219-221.

4.Chanin LR,Greenberg LM,Pediatric upper airway obstruction due to ectopic thyroid: classification and case reports. Laryngoscope 1998,98,422-427

5.Ariaga MA, Myers EN, Ectopic thyroid in retroesophageal superior mediastinum. Otolaryngol Head neck surg,1988,99;340-388.

6.Basak S,Basak O,Odabasi O,Duzcan E. Pharyngeal thyroid; a case report Br J oral maxilla fac surg 1999,37,61-63.

7.A.Toso,F.Colombani,G.Averono,P.Aluffi and F.Pia "Lingual thyroid causing dysphagia and dysphonia", Acta otorhinolaryngologica Italica, vol 29,no:4,pp 213-217,2009.

8.Zitsman JL Lala VR,Rao PM.Combined cervical and intra oral approach to lingual thyroid;a case report Head neck 1998;20(1);79-82

9.Buckland RW, Pedlery J, lingual thyroid a threat to the airway, anaesthesia 2000;55(11);1103-5

10.Massine RE, Durning SJ, Koroscil TM, Lingual thyroid carcinoma; a case report and review of the literature. Thyroid 2001;11(12) 1191-6

11.Chowdhury WA, Chowdhury MR, Chowdhury EH. Dinajpur Med col J 2010 Jan 3(1) 45-46

12.Toja K; Lingual thyroid presenting as acquired hypothyroidism in the adulthood intern med; 1998(37), 381.

13.Hazarika P,Siddique SA, Pujary K, Shah P,Nayak Dr.Balakrishnan R.Dual ectopic thyroid ; a case report of two cases, J laryngol otol,1998,112;393-395.

14.PS Douglas, AW Baker lingual thyroid Br J Oral maxillo fac surg 1994,32(123-124)

15.JD Williams, AP Sdafani, O Slupchinskiji, C.Douge. Evaluation and management of the lingual thyroid gland. Ann otol Rhinol laryngol 1996,105(312-316)

16.F.Bayram, l.Kulahli,l.Yuce,C.Gokce,S.Cagli,K.Deniz.Thyroid.April 2004,14(4):321-324.

17.Bersaneti JA, Silva RD, Ramos RR, Matsushita Mde M & Souto LR. Ectopic thyrid presenting as submandibular mass. Head and Neck Pathology 2011, 5, 63-66.

18.Yoon JS, Won KC, Cho IH,Lee JT & LeeHW.Clinical characteristics of ectopic thyroid in korea.Thyroid 2007 17 1117-1121.

19.Abdullah-Matta MP, Dubarry PH, Pessey JJ & Caron P. Lingual thyroid and hyperthyroidism: a new case and review of literature. Journal on Endocrinological investigation 2002,25,264-267.

20.Ulug T, Ulubil SA & Alagol F. Dual ectopic thyroid: report of a case. Journal of laryngology and otology 2003 117 574-576.

21.Basik SH,Choi JH & Lee HM. Dual ectopic thyroid.European Archives of Oto-Rhino-Laryngology. 2002 259 105-107.

22.Tucci G & Rulli F. Follicular carcinoma in ectopic thyroid gland.A case report.1999 20 97-99.