

Screening

1

2.5 . . . 2 . . . 2 3 . . . 4 .

:
 : 7
 가 1,316
 (7.5 MHz linear array)
 ,
 21
 가
 :
 가 1,316 94 (7.1%) 72
 (5.5%) 가 가 18 (1.4%), 4 (0.3%)
 21 4 () , 16
 1
 94 12 (12.8%)
 :

가 4-
 7% 가 4.7 가
 (1).
 12,000
 가 1,000 가
 (2).
 가 가
 , , , , 7
 (3).
 20 1,316
 . 725 (55.1%), 591 (44.9%)
 20 49 (3.7%), 30 328 (24.9%), 40 402 (30.5%),
 50 351 (26.7%), 60 186 (14.1%)
 가
 15% 가 (5).
 (4, 5).

1
 2
 3
 4
 5가
 2005 10 10 2006 5 5
 U.S.A.)
 90%
 10% , 10%
 (Fig. 1).

가 40 - 60 mm,
18 mm (6) 20 mm

13 - 가 21

(Fig. 2).

가 , , 1 - 3 21 gauge 10 cc
Korea) (, Gyeongbuk,
가 가

(Fig. 3)

(7)

(Fig. 4)

가

1,316 94
(7.1%) 725 26 (3.4%), 591
68 (11.5%) 50 351 40

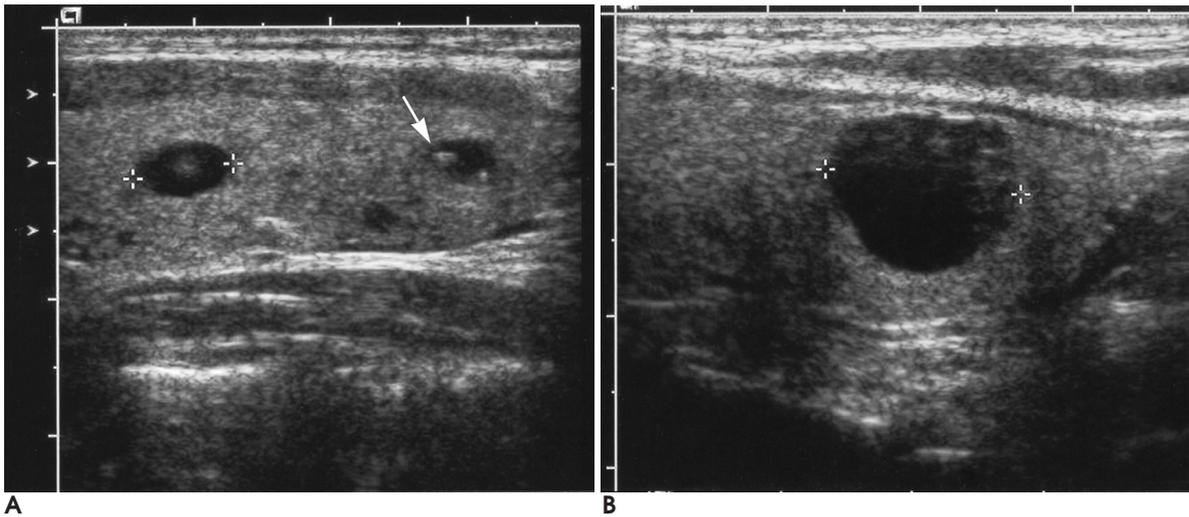


Fig. 1. Benign cysts of thyroid gland.

Longitudinal images (A, B) of two patients show the typical features of cyst. Some of the cyst have tiny echogenic foci (arrow in A) that are thought to be microcrystal. Nodules that are mostly cystic are considered benign.

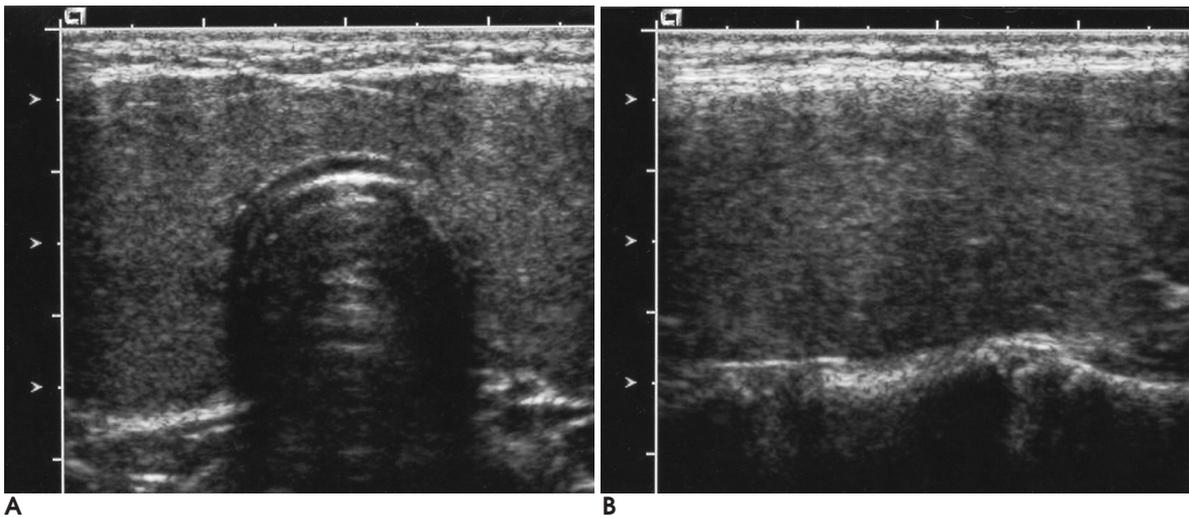


Fig. 2. 60-year-old woman with diffuse enlargement of thyroid gland.

Transverse (A) and longitudinal images (B) show increased anteroposterior diameter and coarse slightly heterogeneous echogenicity of thyroid gland.

(11.4%) 가 60 186 18 (9.7%),
 40 402 26 (6.5%), 30 328 10 (3.0%)
 20
 (Table 1). 가 72 (5.5%)
 60 (4.6%), 12
 (0.9%) , 가 18 (1.4%)
 4 (0.3%) (Table 2).
 가 1 cm 45 (50%), 1 - 1.5 cm
 25 (27.2%), 1.5 cm 20 (22.8%)
 21 3
 가 2

21 4 () ,
 가 , 3 가 1 cm . 16
 1 .
 2

Table 1. Prevalence of Echo Abnormality by Age and Sex

Age group	Male	Female	Total
20 - 29	0/28 (0.0)	0/21 (0.0)	0/49 (0.0)
30 - 39	6/209 (2.9)	4/119 (3.4)	10/328 (3.0)
40 - 49	6/237 (2.5)	20/165 (1.2)	26/402 (6.5)
50 - 59	10/171 (5.8)	30/180 (16.7)	40/351 (11.4)
>60	4/80 (5.0)	14/106 (13.2)	18/186 (9.7)

Note. Data in parentheses are percentages.

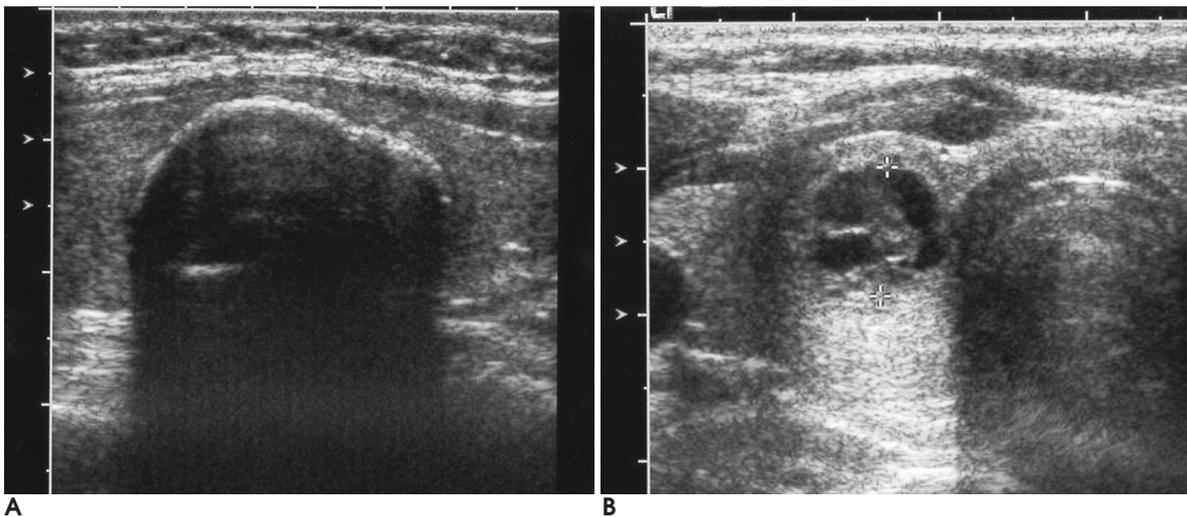


Fig. 3. Sonographic appearance of benign looking thyroid nodules.
A. Longitudinal image shows coarse peripheral "eggshell" calcification.
B. Transverse image shows cystic change or honeycomb appearance of thyroid nodule.

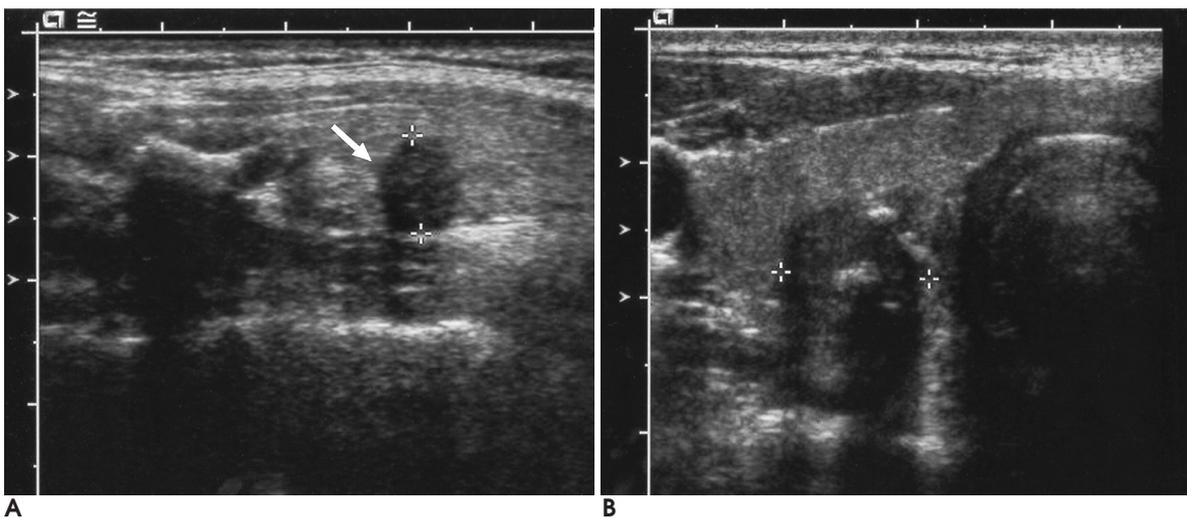


Fig. 4. Sonographic features that are suggestive of malignant thyroid nodules.
A. Longitudinal image shows hypoechoic nodule with taller-than-wide configuration. Microlobulation can also be seen (arrow).
B. Longitudinal image shows hypoechoic nodule with internal microcalcification.

Table 2. Distribution of Echo Abnormalities According to Sex

US appearance	No. of Echo Abnormalities		
	Men (n=725)	Women (n=591)	Total
Abnormal	26 (3.4)	68 (11.5)	94 (7.1)
Nodule			
Solitary	17 (2.3)	43 (7.3)	60 (4.6)
Multiple	2 (0.3)	10 (1.7)	12 (0.9)
Cyst	6 (0.8)	12 (2.0)	18 (1.4)
Diffuse	1 (0.0)	3 (0.5)	4 (0.3)

Note. Data in parentheses are percentages.

72 4 (5.5%)
 1316 12 (0.9%) 가
 (12.8%) 94 12
 18 4
 가 90
 1 cm 45 2 (4.4%)
 , 1 cm 가 45 10
 (22.2%) 4 3
 94 (: =26:68) 6 (6.5%)
 (5 , 1)
 1
 5 3 , 2 가
 3 88
 가
 (3). 7.1% (5.5%)
 , 가
 Brander (8, 9) 27.3%
 , 21.3% , 35.6%
 , 31%
 Mortensen (10) 50%
 3.9% 가 (11, 12) Werk
 (13) 6.5%
 4.2 - 7.4%
 (14, 15).

4
 72 4 (5.5%)
 가
 4 - 7%
 (1)
 0.9%
 , 94 12 (12.8%)
 , Brander (8) 19 50 253
 8 (3.1%)
 14.5% , Takahashi (16)
 Marshall 13%가
 46% Tann (17) 1
 cm 28% , 1 cm 89%
 4.4%, 22.2%
 가
 (1).
 3 mm 가 가
 가
 7.1%
 21 4 가
 0.9%,
 12.8% , 4 3 가
 가

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Usefulness of Screening Ultrasound for Thyroid Gland¹

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Purpose: The purpose of this study was to investigate the usefulness of the ultrasonography as a screening test for thyroid diseases.

Materials and Methods: For 7 months, thyroid ultrasonography (7.5 MHz linear array) was performed prospectively by radiologists on 1,316 subjects who do not have a history of the thyroid disease. We analyzed the morphological abnormalities of thyroid gland and these were classified as the nodular, cystic and diffuse types in accordance with the gender and ages of the patients. We performed ultrasound-guided fine needle aspiration in 21 patients who had sonographic features that were suggestive of malignant thyroid nodules. Physical examination was performed for all subjects by clinicians before the thyroid ultrasonography, and we compared the detectability of thyroid lesions between ultrasonography and physical examination.

Results: Thyroidal abnormalities were detected in 94 (7.1%) of 1,316 subjects. Among the 94 patients, 72 (5.5%) showed as nodules, 18 (1.4%) showed as cysts and 4 (0.3%) showed as diffuse abnormalities. The result of the ultrasound-guided aspiration on 21 patient showed 4 malignant nodules, 16 benign nodules and 1 undetermined nodule. Physical examination detected abnormalities in only 12 patients (12.8%) of the 94 patients, which were showed as nodules, cysts and the diffuse type by ultrasonography.

Conclusion: Thyroid disease of the general population was relatively common and the detection rate with performing physical examination for the thyroid nodule, cyst and the diffuse type was lower than that for ultrasonography. Thyroid ultrasonography is a useful screening modality for detecting thyroid diseases.

Index words : Thyroid, US
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