Brief communication (Original)

A retrospective study of gynecomastia in male patients referred to Hatyai Hospital with breast lesions

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Background: Gynecomastia is a common benign lesion of the male breast and accounts for up to 80% of male patients referred with breast lesions.

Objective: To examine the pattern of breast lesions in male patients who underwent breast biopsy.

Methods: All male patients referred to Hatyai Hospital with breast complaints were included in the study. Histopathology reports were retrospectively reviewed during 2004–2011.

Results: In 77 male patients diagnosed with breast lesions, the most common lesion was gynecomastia (49/77, 64%), followed by fibrocystic changes (7/77, 9%), and breast cancer (6/77, 8%). Gynecomastia was commonly found in male patients less than 40 years of age, while other breast lesions are seen in male patients over 40 years of age ($P = 0.036$, OR = 2.842, 95%CI = 1.085–7.447).

Conclusion: Gynecomastia was the most common diagnosis among breast lesions in male patients referred to the Hatyai Hospital during 2004–2011. Gynecomastia was more common in the patients less than 20 years old.

Keywords: Gynecomastia, male breast lesions, Thailand

Gynecomastia is a benign enlargement of the male breast because of proliferation of its glandular components. It is common in mild transient form in 30%–50% of healthy male patients [1]. Causes of gynecomastia are largely idiopathic. Identified causes of gynecomastia are hypogonadism (25%), hyperprolactinemia (9%), chronic liver disease (4%), and drug induced (4%) [2]. Gynecomastia is thought to result from several mechanisms including increased androgen and leptin levels, human chorionic gonadotropin, and luteinizing hormone [3, 4]. The majority of male patients with gynecomastia are asymptomatic and referred for persistently tender breasts, palpable lump, or disturbed body image [5]. Previous studies reported that new cases of gynecomastia accounted for up to 80% of male patients referred to hospitals with breast lesions [6–11]. The aim of this study was to examine the nature of male breast lesions, especially those diagnosed as gynecomastia at Hatyai Hospital over the past 8 years (2004–2011).

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Materials and methods

The study was approved by the Ethics Committee of Hatyai Hospital. This retrospective study analyzed histopathology reports of men who were referred to Hatyai Hospital, Songkhla, Thailand during 2004–2011. All data were verified, checked for duplication and coded. The clinical details of patients included age at diagnosis and histopathology diagnosis. Excel and SPSS version 11.5 (SPSS Inc, Chicago, IL, USA) was used. $P < 0.05$ were considered significant.

Results

There were 77 men referred to Hatyai Hospital with an age range of 4–86 years (median 40) during 2004–2011. The most frequent breast lesion diagnosed was gynecomastia (49/77, 64%), followed by fibrocystic changes (7/77, 9%), cancer (6/77, 8%), fibroadenoma (4/77, 5%), lipoma (3/77, 4%), and others (**Table 1**). In the first year, there were 5 men referred to the Hospital. By 2011, this number had increased to 26 (**Figure 1**). The prevalence of gynecomastia in different age groups is shown in **Figure 2**. Gynecomastia was more common in male patients less than 20 years of age (7/8, 88%), followed by 20–39 years of age (21/30, 70%), over 60 years of

age (9/14, 64%), and 40–59 years of age (12/25, 48%). This indicates that gynecomastia occurs more commonly in male patients under 40 years of age; while other breast lesions occurred in patients aged 40 years or older ($P = 0.036$, OR = 2.842, 95%CI = 1.085–7.447) (Table 2). The overall proportion of

breast cancer was 8% (6/77). Breast cancer occurred in about one third (2/6 of each age group) of 20–39-year-old patients, 40–60 year-old patients, and over 60 year-old patients. Invasive ductal carcinoma was the most common type diagnosed (3/6) as shown in Table 3.

Table 1. Breast lesions in men with age distribution

Breast disease/male	Age group in years, n (%)				Total
	<20	20–39	40–59	≥60	
Gynecomastia	7 (88%)	21 (70%)	12 (48%)	9 (64%)	49 (64%)
Fibrocystic change	0	2 (7%)	3 (12%)	2 (14%)	7 (9%)
Breast cancer	0	2 (7%)	2 (8%)	2 (14%)	6 (8%)
Fibroadenoma	0	3 (10%)	1 (4%)	0	4 (5%)
Lipoma	0	0	2 (8%)	1 (7%)	3 (4%)
Inflammation	0	1 (3%)	1 (4%)	0	2 (3%)
Arteriovenous malformation	0	1 (3%)	0	0	1 (1%)
Axillary breast	0	0	1 (4%)	0	1 (1%)
Duct ectasia	0	0	1 (4%)	0	1 (1%)
Dystrophic calcification	1 (13%)	0	0	0	1 (1%)
Epidermal inclusion cyst	0	0	1 (4%)	0	1 (1%)
Fibrolipoma	0	0	1 (4%)	0	1 (1%)
Total	8 (100%)	30 (100%)	25 (100%)	14 (100%)	77 (100%)

Figure 1. Trend in incidence of breast lesion in men during 2004–2011

Figure 2. Prevalence of gynecomastia in different age groups

Table 2. Prevalence of gynecomastia and other breast lesions

Age groups	Breast lesions		Total	<i>P</i>	OR (95%CI)
	Gynomastia	Other diseases			
40	30 (61%)	10 (36%)	40 (52%)	0.036	2.842 (1.085–7.447)
>40	19 (39%)	18 (64%)	37 (48%)		
Total	49 (100%)	28 (100%)	77 (100%)		

P by Fisher's Exact Test

Table 3. Breast cancer types in men

Breast cancer type	Age group in years, n (%)			Total
	20–39	40–59	≥60	
Ductal carcinoma	1	2	0	3
Lobular carcinoma	1	0	0	1
Malignant lymphoma (B-cell type)	0	0	1	1
Squamous cell carcinoma	0	0	1	1
Total	2	2	2	6

Discussion

There were an increasing number of male patients referred to Hatyai Hospital with breast lesions and an increased number of male patients diagnosed with gynecomastia during 2004–2011. In the first year (2004), there were 5 men referred to the Hatyai Hospital; by 2011 the number had risen to 26 per year. This study indicates that gynecomastia was the most common breast lesion in male patients in the south of Thailand, while other breast lesions were related to cutaneous and subcutaneous tissues (fibrocystic change, breast cancer, fibroadenoma, lipoma, and arteriovenous malformation). The overall prevalence

of gynecomastia in male patients referred to Hatyai Hospital with breast lesions during 8 years was 64%. This is higher than in Austria (51.2%) [12], Nepal (60%) [13], and Nigeria (61.9%) [14]. It was lower than that in Italy (66.07%) [15], USA (67.3%) [16], UK (74.4%) [5], Spain (80.4%) [7], South Africa (82.7%) [8], and India (84.3%) [9]. A high prevalence of gynecomastia was also reported from Turkey (100%) [10], and Pakistan (100%) [11]. Male patients with gynecomastia often become anxious and seek medical attention. Although gynecomastia is a benign condition that may not require specific treatment, it can have a psycho-social impact on self-image [17]

and even result in inappropriate mastectomies [18]. Gynecomastia appeared to be more pronounced in patients less than 20 years of age. This was similar to findings in a previous study [5]. However, one study reported that more severe gynecomastia was seen in patients from 20 to 24 years old and in those over 44 years old (57%), compared with those 19 years old or younger [19]. This differs from findings in our study. Generally, there are three distinct peaks in age distribution of gynecomastia: the neonatal period because of maternal hormones, during puberty (peaking at 13–14 years old); and in an adult population (the highest prevalence was at 50–80 years old) [20]. Gynecomastia, related to an increase in the ratio of estrogen to androgen during the neonatal period and puberty [21]. Gynecomastia in later adulthood usually reflects aging related physiologic changes involving declining androgen and free testosterone levels, accumulation of adipose tissue and increasing aromatase activity (obesity) [21, 22]. This could explain the prevalence of gynecomastia in our study, which was more common in patients less than 20 years old, less common in those from 40 to 59 years old, and increased in those older than 60 years. Male breast cancer, which is a rare disease [23, 24], was found in patients of a wide range of ages among this relative small study population. The main limitation of this study is that our patients may not be an entirely true representation of the general male population. A larger study in this population to confirm our findings is warranted.

Conclusions

Gynecomastia is the most common diagnosis in male patients referred to Hatyai Hospital with breast complaints during 2004–2011. It involved mostly male patients less than 20 years of age. Patients with gynecomastia often become anxious and seek medical attention and mostly require reassurance.

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