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GYNAECOMASTIA;
MANAGEMENT AND CAUSATIVE FACTORS

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ABSTRACT... Objectives: To determine the causative factors and management of Gynaecomastia. **Study Design:** Observational case series study. **Place and Duration of Study:** Surgical Unit-1 Bahawal Victoria Hospital Bahawalpur, from 1st January 200 till 31st December 2007. **Patient and Methods:** Thirty male patients having breast swelling were included in this study. Relevant history was obtained. Appropriate physical examination was performed. Necessary investigations were done and after making a diagnosis appropriate treatment was done. A total of 30 patients were studied in the study period of 18 months. Those male patients who were having breast lesion other than benign enlargement (e.g. Ca. Breast, Breast/Abscess) were not included in the study. Necessary investigations were done. Subcutaneous Mastectomy was performed. **Results:** The most common age group developing gynaecomastia was of 20-30 years (60%). Bilateral gynaecomastia was observed in 76.66% and unilateral gynaecomastia in 23.33%. Idiopathic gynaecomastia was observed in 73.33% cases. Medical treatment was given with tamoxifen 10mg twice a day for the period of three months in 6 case (20%) and this remained effective in 5 case (83.33%). Subcutaneous mastectomy was performed in 17 cases (56.66%). Post-operative complications were seen in 4 cases (23.52%), the most common complication being wound hematoma in 2 cases (11.76%). Most of the patients (88.9%) were fully satisfied with the results of subcutaneous mastectomy. **Conclusion:** Gynaecomastia is the most common benign lesion of the male breast. As far as physiological gynaecomastia is concerned, patients should be observed for at least 2 years from the onset of their condition. In most of the cases spontaneous resolution occurs. Surgical treatment should be planned in whom spontaneous resolution does not occur. Surgery remains the mainstay of therapy and is frequently indicated for psychological and cosmetic reasons.

Key words: Gynaecomastia, Benign Breast Lesion in Male, Swelling of male Breast.

INTRODUCTION

Gynaecomastia, the growth of grandular breast tissue in males, is a reversible, benign lesion affecting 3% of the male population at any one time[1].

Breast enlargement is not unique among men but the benign breast diseases must be differentiated from the malignant lesions. Gynaecomestia is the most common benign lesion[2]. The breast or mammary gland is a modified apocrine sweat gland. The male breast throughout life and the immature female breast resemble each other.

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The nipple is small but the areola is fully formed in both[3]. Normal breast development in women is estrogen dependent but androgens oppose this effect. Gynaecomastia results from an imbalance between androgen and estrogen activity, which may reflect androgen deficiency or estrogen excess[4].

The Gynaecomastia can be physiological or pathological. Physiologically, it could be neonatal, pubertal and in aged persons. Pathologically it can occur with various systemic diseases e.g. hepatic disease, renal failure, starvation and thyrotoxicosis etc[5]. Gynaecomastia can also occur in association with various neoplasms e.g. sertoli's cell tumours of testicle, adrenal tumours, bronchial carcinoma, hepatoma, lymphoma, gastric carcinoma, renal tumours etc. Gynaecomastia can also occur in patients of klinefelter syndrome and secondary testicular failure[6]. Various drugs such as oestrogens, androgens, cyproterone acetate, digoxin, marijuana, spironolactone, cimetidine, ranitidine, omeprazole, tricyclic antidepressants and methyldopa etc can cause growth of the male breast tissue.

Clinically the gynacomastia is usually asymptomatic. One or both breasts become abnormally enlarged. Gynacomastia may be painful and tender if it has developed rapidly[7].

The dilemma in the diagnosis of the gynacomastia is to separate men with underlying endocrinopathies from those of idiopathic disorders. Symptomatic gynacomastia is evaluated by mammography, ultrasonography or both[8]. The diagnosis of gynacomastia can be made by a work up that includes careful drug history, a detailed physical examination including the testis, evaluation of liver functions and endocrine work up including measurement of plasma dehydroepiandrosterone (DEHA) or urinary 17-ketosteroids, Lutenizing Hormone (LH), Follicle Stimulating Hormone (FSH), prolactin, estrogen and testosterone.

Provided the patient is healthy and comparatively young, reassurance may be a sufficient measure[9]. Various drug regimens have been tried for the treatment of gynacomastia with varying degree of success. These include tamoxifen, danazole, clomiphine, testolactone, dihydrotestosterone etc[10,11,12]. If gynacomastia is the result of different drugs the patient may need to discontinue the medication.

Surgery remains the main stay of therapy and is frequently indicated for psychological and cosmetic reasons. Such surgery is usually accomplished through a circum-areolar approach[13]. In the light of above facts, it is of great importance to obtain correct data regarding the incidence of gynaecomastia, to determine the appropriate methods of diagnosis and to chalk out the strategies of management. Summing up, the purpose of study is to determine the causative factors and management of gynaecomastia.

PATIENTS AND METHODS

This observational case series descriptive study was conducted in Surgical Unit-1, Bahawal Victoria Hospital (BVH) Bahawalpur from 01-01-2006 to 31-12-2007.

All patients of gynaecomastia admitted in Surgical wards of Bhawal Victoria Hospital, Bahawalpur during the study period were included in this study. A total of 30 patients were studied in the study period of 18 months. Those male patients who were having breast lesion other than benign enlargement (e.g. Ca. Breast, Breast/Abscess) were excluded from the study.

A thorough history was taken from the patients themselves and also from their close relatives. History was taken regarding the age at onset, the duration since onset, recent changes in the size of the nipples and discharge from the nipples. Patients were asked about the pain in the breast. Patients were also inquired about any history of mumps, trauma to the testis and use of alcohol. Family history of gynaecomastia also obtained. Special attention was given about the intake of drugs for the treatment of some other disease. A thorough search was made about any other systemic disease leading to gynaecomastia.

Detailed physical examination was done in all patients

regarding patients overall health and nutritional status was noted. Thorough physical examination of the breasts was done noting their size, consistency and fixity to skin and underlying structures. Presence of any nipple discharge or axillary lymphadenopathy was also noted.

Detailed systemic examination was performed to check for any stigmata of chronic liver disease, renal disease or thyroid disease. Examination of testicles was done noting their size, consistency and presence of any nodule or asymmetry.

In all these patients a minimum of the following investigations were performed:

- Urine examination
- Urine HCG excretion
- Blood complete picture
- Liver function tests
- Serum Urea-electrolytes
- LH levels
- Ultrasonography of abdomen
- Chest radiography
- X-ray skull, lateral view

FNAC was done in people over 40 years and unilateral gynaecomastia. As indicated, either conservative or surgical treatments were done and the results noted of certain variables in the surgical procedures.

After admission of patients, for all those over 40 years of age, ECG and blood glucose random were also done. All the patients were evaluated for any systemic disease like diabetes, hypertension and pulmonary disease.

After taking a thorough history, physical examination and necessary investigations patients were divided into three groups for their treatment.

- Patients in whom gynaecomastia was due to drug intake, were reassured and their causative drug was stopped, they were sent home and called for followup.
- Patients with gynaecomastia secondary to other systemic illness were referred for medicaltreatment of their disease.
- Patients of idiopathic gynaecomastia were divided into two groups for treatment. Six patients were selected for medical treatment with Tamoxifen (10mg) twice a day for a period of three months and remaining 16 patients were selected for subcutaneous mastectomy in one patient in whom, tamoxifen was ineffective was later on selected for surgical treatment so a total of 17 patients were selected for surgery.

For surgical procedure all the patients were admitted one or two day before the operation. Written consent was taken for surgery under general or local anesthesia. Patients in whom general anaesthesia was planned, were kept nil orally a night before surgery and administered anxiolytic medicine.

Chest was shaved on the morning of surgery and marking of breast tissue to be excised was performed in the operation theatre. An inferior periareolar incision was made along half of the circumference of the areola, at the junction between the areolar pigmented skin and the skin of the chest wall. If added exposure was required, the incision was extended to 2/3 of the circumference of the areola. The incision was made 5 to 10mm deep, depending upon the depth of disc of subareolar breast tissue to be elevated with the nipple areola complex. The chest skin was undermined with blunt or sharp dissection in the plane between the subcutaneous fat and the breast tissue.

The breast tissue was removed by developing an inferior border and proceeding upwards, by blunt or sharp dissection. Tapering of the breast tissue at the edges was performed with scissors. Bleeding was controlled with diathermy and finally the wound was packed with hot saline packs, for five minutes. The raw area was checked again for haemostasis. Redivac suction drain was placed in the wound. The drain was taken out through the same

wound in half the patients and a separate stab wound was made just behind the anterior axillary fold in half the patients to avoid another scar on the chest wall. Wound was stitched with 3/o prolene and pyodine dressing with pressure bandage was applied. Drains were removed whenever the drainage was less than 5ml per day, which was within 48 hours of surgery in most of the cases.

Wound was examined on the forth postoperative day and stitches removed on the 7th postoperative day. Patients were discharged from the hospital after the removal of stitches.

Patients were asked to report to the surgical OPD of our unit fortnightly, for two visits. Patients were asked about their satisfaction regarding their physical appearance. Any complication of surgery regarding the cosmetic result was noted.

RESULTS

Patients of gynaecomastia admitted in BVH were evaluated detail. A total of 30 cases were included in the present study. Patients were divided in three age groups, 10-20 years (8 cases, 26.66%); 20-30 years (18 cases, 60%); and more than 30 years (4 cases, 13.33%). In this study, the majority of patients (60%) were the age group of 20-30 years. Bilateral gynaecomastia was observed in 23 cases (76.66%) and unilateral gynaecomastia in 7 cases (23.33%), with right sided involvement in 3 cases (10%) and left involvement in 4 cases (13.33%) so in our study bilateral gynaecomastia was more common. In our study of 30 cases pati were divided into 3 categories on the basis of etiology. Twenty two cases (73.33%) were having idiopathic gynaecomastia, 6(20%) due to drug intake for some other disease and 2 cases (6.66%) due to chronic liver disease i.e. cirrhosis of liver.

In 6 cases (20%) medical treatment was planned. Tamoxifen was used in a dose of 10mg orally twice daily for a period 3 months, out of which in 5 cases (83.33%) complete resolution gynaecomastia occurred and in one case (16.66%) treatment tamoxifen remained ineffective and later on this patient was also offered surgical treatment. Subcutaneous mastectomy was perform in 17 cases (56.66%) including a patient in whom medical treatment with tamoxifen failed. Postoperative complications were observed in cases (23.52%), Wound hematoma was noted in 2 cases (11.76%), wound infection in one case (5.88%) and dishing was noted in case (5.88%). After one month, the patients were asked about their cosmetic appearance. Most of them (88.9%) were fully satisfied with the results of subcutaneous mastectomy, whereas 2 cases (11.1% were not fully satisfied with surgery. One patient was not satisfied because of dishing around the nipple. Dishing was obvious when observer stood at 6 feet from the patient or less but as the patient had no hair on his chest, dishing was quite prominent. One patient was not satisfied with the appearance of his periareolar scar.

Table-I. Age Distribution.

Age (in years)	No. of patients	%age
10-20	8	26.66
21-30	18	60
> 30	4	13.33

Table-II. Incidence of Unilateral and Bilateral Gynaecomastia.

Side Involved	No. of Patients	%age
Bilateral	23	76.66
Rt. Unilateral	3	10
Lt. Unilateral	4	13.33

Table-III. Etiology of Gynaecomastia.

Etiology	No. of Patients	%age
Idiopathic	22	73.33
Drug induced	06	20
Disease Associated	02	6.66

Table-IV. Medical Treatment of gynaecomastia with Tamoxifen (n=6).

Response	No. of patients	%age
Effective	05	83.33
Ineffective	01	16.66

Table-V. Complications of Surgery.		
Hematoma formation	02/17	11.76
Wound infection	01/17	5.88
Dishing	01/17	5.88

Table-VI. Patients Satisfaction with the results of Surgery.		
Opinion	**No. of patients**	**%age**
Satisfied	15	88.24
Un-satisfied due to: 1. Hypertrophied scar 2. Dishing	 01 01	 5.88 5.88

DISCUSSION

In our study the age group commonly observed for gynaecomastia was 20-30 years (60%). Similar findings have been reported by Gill and Kayani[14]. In their study of 150 cases were studied and the commonest age group was in third decade of life. Our results are comparable with this study.

In our study of 30 cases, Bilateral gynaecomastia was observed in 23 cases (76.66%) and unilateral gynaecomastia in 7 cases (23.33%). In a study performed by Georgiadis and Papandreou, 954 cases were enlisted in which bilateral gynaecomastia was observed in 85% cases and unilateral in 15% cases[15]. These results are comparable with our study. In another study conducted by Vasseur and Martinot, incidence of bilateral gynaecomastia was observed in 75% of cases[16].

As far as etiology of gynaecomastia is concerned, idiopathic gynaecomastia was observed in 22 cases (73.33%), drug induced gynaecomastia in 6 cases (20%) and disease related gynaecomastia in 2 cases (6.66%). In a study of 175 cases conducted by Danniels and Layer[17], idiopathic gynaecomastia was observed in 63% of patients, drug induced gynaecomastia in 43% and disease related gynaecomastia in 7.8%. Our results are not comparable with this study due to difference in sample size and racial differences.

In our study 6 patients were given medical treatment with Tamoxifen for a period of three months. We observed complete resolution of gynaecomastia in 5 cases (83.33%). In a study by Ting and Chow[18], positive results with Tamoxifen were observed in 78%.

In our study post operative complications were observed in 4 cases (23.52%). Wound hematoma in 2 cases (11.76%), wound infection in 1 case (5.88%) and dishing in 1 case (5.88%). These results are comparable with the results of study performed by Martinez and Maderna[19].

On followup visits, satisfaction of patients about the results of surgery was asked. In our study subjectively satisfactory results were observed in 89% of patients. These results are comparable with the study conducted by Colombo and Buse[20]. In their study satisfaction of patients was observed in 93% of cases. In another study performed by Frushtorfer and Malata, 91% of patients were very much satisfied with their cosmetic outcome[21].

CONCLUSIONS

Gynaecomastia is a most common benign male lesion of breast, which occasionally gives rise to excessive breast enlargement. In physiological gynaecomastia, patients should be observed for at least 2 years from the onset of their condition. In most case it will regress spontaneously.

If spontaneous resolution does not occur or the condition is causing the patient much embarrassment, surgery is indicated.

Surgery for gynaecomastia is not an extensive procedure but has many potential complications. Satisfactory results are achieved with some experience. Webster's periareolar incision is the best approach for subcutaneous mastectomy and provides the best results.

Although much enthusiasm exists about the treatment of gynaecomastia with liposuction, the fact remains that surgery still has to be done for complete correction of the condition. Most of the centers in Pakistan, including our own, do not have the liposuction apparatus. We feel that cosmetically acceptable results can be achieved in a

great majority of patients, without the use of liposuction.Finally, we have observed that surgery for gynaecomastia is very much rewarding. Although in some cases we observed that we achieved less than perfect results, the patients were still satisfied from results, of surgery. Probably they were more than happy to get rid of an extremely embarrassing condition.

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