

UNILATERAL GYNECOMASTIA IN YOUNG ADULT: CASE REPORT

Suyasa Adryan Yunanda^{1*}, Ida Bagus Putu Wiyasa²

^{1,2}Department of Surgery, Wangaya General Hospital, Denpasar, Bali, Indonesia

*) Correspondent Email: adryanyunanda25@gmail.com

Abstract: Unilateral Gynecomastia in Young Adult: Case Report. *There are many possible causes of male breast swelling. A common cause is gynecomastia, which is the benign proliferation of glandular breast tissue in males. It is frequently encountered by primary care physicians as a result of the patient's cosmetic concerns or pain. Breast malignancy is the most concerning diagnosis of breast swelling. This case report describes a male patient with breast enlargement on one side. We described a case of a thirty-year-old male who complained of painless left breast swelling since ten years ago, his left breast has grown without experiencing any discomfort or soreness. Upon physical examination, the left breast seemed larger than the right due to swelling. Breast USG revealed no abnormalities in the tissue of the cutis and subcutis, and the examination did not reveal any nodules or cysts. Additionally, we looked at prolactin and testosterone levels hormonally, and the results were within normal ranges. To remove tissue and enhance the aesthetics of the chest area, he had a straightforward mastectomy on his left breast. We report a rare case of unilateral gynecomastia, for which no known cause has been identified and which cannot be explained by any of the previously mentioned theories. Surgery is a crucial component of treatment for patients with idiopathic unilateral gynecomastia because of their unique and unusual phenotype.*

Keywords: Male Gynecomastia, Unilateral Gynecomastia, Young Adult

Abstrak: Gynecomastia Unilateral Pada Dewasa Muda: Laporan Kasus. Ada banyak kemungkinan penyebab pembengkakan payudara pada pria. Penyebab umumnya adalah ginekomastia, yaitu proliferasi jinak jaringan kelenjar payudara pada pria. Hal ini sering ditemui oleh dokter perawatan primer karena masalah kosmetik atau akibat nyeri yang dialami pasien. Keganasan payudara merupakan diagnosis pembengkakan payudara yang paling mengkhawatirkan. Laporan kasus ini menggambarkan seorang pasien laki-laki dengan pembesaran payudara di satu sisi. Kami menggambarkan sebuah kasus seorang laki-laki berusia tiga puluh tahun yang mengeluhkan pembengkakan payudara kiri yang tidak menimbulkan rasa sakit. Sejak sepuluh tahun yang lalu, payudara kiri pasien membesar tanpa mengalami rasa tidak nyaman atau nyeri. Pada pemeriksaan fisik, payudara kiri tampak lebih besar dibandingkan payudara kanan karena adanya pembengkakan. USG payudara tidak menunjukkan kelainan pada jaringan kutis dan subkutis, dan pemeriksaan tidak menunjukkan adanya nodul atau kista. Selain itu, kami melihat kadar prolaktin dan testosteron secara hormonal, dan hasilnya berada dalam kisaran normal. Untuk menghilangkan jaringan dan meningkatkan estetika area dada, pasien menjalani tindakan mastektomi pada payudara kirinya. Kami melaporkan kasus ginekomastia unilateral yang jarang terjadi, yang penyebabnya belum diketahui dan tidak dapat dijelaskan oleh teori yang ada sebelumnya. Pembedahan merupakan komponen pengobatan yang penting bagi pasien dengan ginekomastia unilateral idiopatik karena fenotipnya yang unik dan tidak biasa.

Kata Kunci: Dewasa Muda, Ginekomastia Pria, Ginekomastia Unilateral

INTRODUCTION

Gynecomastia is described clinically as a widespread expansion of the male breast tissue along with a histopathologically benign proliferation of glandular male breast tissue, and a

rubbery or hard mass spreading concentrically and symmetrically from the nipple (Cuhaci et al., 2014). The prevalence of gynecomastia was reported to be between 32-65%, due to use of different methods of assessment and the analysis of males of different ages and with different lifestyles, while autopsy data suggest a prevalence of 40%. The first peak occurs in infancy or the neonatal period, with an occurrence of 60-90% and decreases with age (Rahmani et al., 2011). The second peak occurs during puberty and has a prevalence of 4-69%. This wide variation is likely due to differences in what is considered to be normal sub-areolar glandular tissue, the diagnosing physician and most importantly variations in the age distribution of the patient populations. Pubertal gynecomastia usually begins at age 10-12-years-old and peaks at ages 13-14. It usually regresses within 18 month and is uncommon in males aged 17 and older. The final peak occurs in older males (particularly in those aged 50-80-years-old), with a prevalence of 24-65% (Carlos et al., 2012; Cuhaci et al., 2014; Rahmani et al., 2011).

The major cause of gynecomastia is thought to be an altered imbalance between estrogen and androgen effects due to absolute increase in estrogen production, relative decrease in androgen production or a combination of both. Estrogen act as a growth hormone of the breast and therefore excess of estradiol in men leads to breast enlargement by inducing ductal epithelial hyperplasia, ductal elongation and branching, the proliferation of periductal fibroblasts and vascularity. The exposure to estrogen has similar histological results in males and females, except that luteal phase progesterone in females leads to aciner development, which does not occur in males (HE, 2011).

Keeping these aetiologies of gynaecomastia in mind, take a thorough medication history, and assess for signs of cirrhosis (jaundice, ascites, pruritus), malnutrition, chronic renal failure (oedema, fatigue), hyperthyroidism (weight loss, palpitations, fine tremor),

hypogonadism (erectile dysfunction, decreased muscle mass, testicular atrophy), testicular tumours (testicular mass), and adrenal tumours (abdominal mass). Although gynecomastia is usually bilateral and symmetric, it can be unilateral or asymmetric for any reason. Unilateral gynecomastia seems to be more common on the left side. Because normal males have a high prevalence of palpable breast tissue, gynecomastia is frequently asymptomatic and may be unintentionally found during routine examinations. Therefore, a man in otherwise good health who has gynecomastia that was unintentionally discovered shouldn't have a comprehensive endocrine evaluation done (Cuhaci et al., 2014; Kanakis et al., 2019).

Before beginning treatment, the patient must be informed that these cases are usually benign and self-limiting and that over time fibrotic tissue replaces the symptomatic proliferation of glandular tissue, meaning that the pain and tenderness will resolve. In addition, new-onset gynecomastia (<6 months) often spontaneously regresses in both adolescent and adults and so in most patients only follow-up is necessary. In pubertal males; 85-90% of cases regress between 6 month and 2 years and continuation after the age of 17 is rare. In adults, asymptomatic males with long-standing breast enlargement do not require treatment and instead reassurance is sufficient. However, if gynecomastia persists for more than 1 year, instances of complete regression are low, due to the predominance of dense fibrous tissue. If gynecomastia persists and is associated with severe pain, tenderness and with psychological distress, medical and surgical options are available (Cuhaci et al., 2014; Holzmer et al., 2020).

In adults, feminization (particularly gynecomastia) is common in adults, but it is rare in boys. To properly manage the male patient suffering from gynecomastia, a detailed work-up to determine the specific etiology must be completed that is tailored to the patient's age and presenting symptoms—this

often requires a multidisciplinary approach. Once the underlying cause has been identified and addressed, surgical correction may still be required for symptomatic relief or improvement in psychosocial functioning (Holzmer et al., 2020; Swerdloff & Ng, 2023). This case report presents a case of unilateral breast enlargement in an adult male.

CASE PRESENTATION

A case report presents a patient with enlargement left breast since 10 years ago. The patient underwent breast USG several years ago within normal result and not informed to do any pharmacological and surgical treatment. Over the past year, the patient has noticed a gradual enlargement of his left

breast, which has lead to discomfort with his appearance and occasional pain in the left breast.

On physical examination, it was found that the patient's left breast is larger than the right one (Figure 1). The left breast feels soft with minimal tenderness in palpation examination. There is no history of any discharge from the left breast previously. No palpable lumps were detected during the physical examination of the patient's left breast. Secondary sexual characteristics in the patient appear to be developing well and normal, similar to typical male development. There is no history of any previous chronic illness found in the patient.



Figure 1. On physical examination found that left breast is larger than right

Along with a blood and hormone test, the patient was having a USG mammae evaluation. In this case report, the patient underwent tests to measure the levels of prolactin and testosterone hormones. Additionally, the patient also underwent a thorax x-ray to evaluate the condition of intrathoracic organs. Based on the examinations conducted, both the left and right breast ultrasound (USG mammae) results revealed normal cutaneous and subcutaneous tissue without any nodules, masses, or cysts. Similarly, the chest x-ray showed that all

internal organs were within normal limits. In the hormonal tests, the levels of prolactin and testosterone hormones were also within the normal limits.

The patient was decided to undergo a simple mastectomy of the left breast. During the surgery, tissue resembling fatty tissue was found in the patient's left breast. A pathological examination was performed on the removed tissue, and it revealed conventional morphological features consistent with gynecomastia.

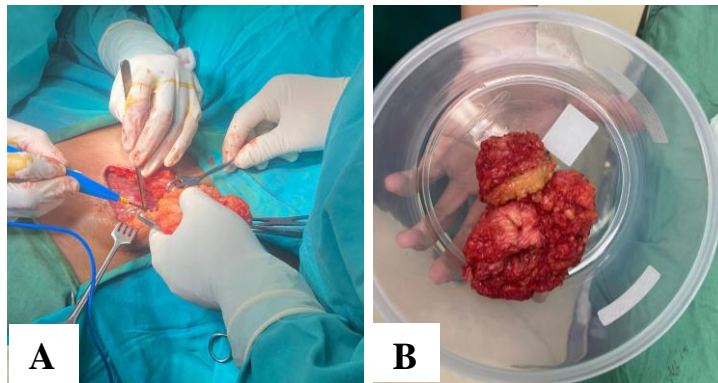


Figure 2. Operation process (A) and Tissue Samples Taken (B)

After surgery, the patient well recovered with minimal pain at the surgical site. The patient was discharged after 2 days of hospitalization. No complications were observed post-

surgery or during follow up. The surgical wound healed, and the patient was able to do normal activities within a week after the surgery.



Figure 3. Post operation wound

DISCUSSION

This study presents a 30-year-old male patient with unilateral breast enlargement since 10 years ago. Gynecomastia is a common entity that may be brought to the attention of the physician by the patient himself or it may be found on a clinical examination performed for other health problems. This difference in the way it is detected (incidental finding or main complaint) determines and places a bias on the forms of presentation and the various etiologies reported by different published case series. Furthermore, the different methods of assessment at each site certainly determine the higher or lower reported frequency of idiopathic gynecomastia and of each probable etiology.

Research conducted by Costanzo et al which was carried out at a multicenter found that highest prevalence of gynecomastia was observed between 21 and 30 years ($n = 74$; 31.2%). The most common presenting complaints were aesthetic concerns (62.8%) and breast pain (51.2%). 25.3% of the subjects had a history of pubertal gynecomastia. 56.5% had bilateral gynecomastia. 39.9% were overweight and 22.8% were obese (Costanzo et al., 2018). In contrast to this study, research by Maroney et al found that a total of 268 male patients were included with mean age was 16.6 years (Maroney et al., 2022).

On ultrasound examination, it was found that the right and left breasts only found normal cutaneous and

subcutaneous tissue without any nodules, masses, or cysts. In previous research it was found that the etiology could not be identified in 45.1% of the cases; the most frequently identified causes were anabolic steroids consumption (13.9%), hypogonadism (11.1%), and use of pharmaceutical drugs (7.8%). Patients with bilateral gynecomastia had a longer history of disease, higher BMI, and lower testosterone levels (Costanzo et al., 2018).

The patient underwent mastectomy on the left breast and found conventional morphological features consistent with gynecomastia. In Maroney study, there were no abnormal histopathologic findings in 95.1 percent. Among the 13 patients with abnormalities, eight (3 percent) had nonproliferative changes, two (0.8 percent) had proliferative changes without atypical, two (0.8 percent) had atypical ductal hyperplasia, and one (0.4 percent) had both bilateral atypical ductal hyperplasia and unilateral ductal carcinoma in situ (Maroney et al., 2022).

Although gynecomastia is considered a harmless condition, it may have a tremendous psychological effect on the patient. Patients may be affected both emotionally and socially, with occasional suicidal tendencies and it is because of these that treatment is advocated. A watchful period of waiting and medical management may be instituted but in recalcitrant cases where the swellings persist for more than a year, surgical management is the only curative option. Surgical management is also advocated initially in severe cases of gynecomastia where surgery would be required eventually (Tarallo et al., 2019).

A variety of surgical techniques have been advocated for gynecomastia, with new techniques evolving on a regular basis. Basically, these comprise suction-assisted liposuction to target the fat component, surgical removal of the glands, and appropriate skin suturing when needed. Adjunctive procedures may also be required. However, surgery for gynecomastia is not without complications. Excessive hollowing after

surgery, asymmetry of the nipples, poor scarring, and hypertrophic scarring are some of the common problems that underlie surgery for gynecomastia. Scarring may be especially problematic in patients with dark-complexioned skin, where hypertrophic scars and keloids are found in high proportions. In an attempt to decrease scarring, incisions are now being shortened to make the surgery aesthetically pleasing (Adhikari, 2021; Kasielska-Trojan & Antoszewski, 2017).

One of the newest techniques for performing mastectomy for gynecomastia is the minimal incision technique. The patients were first marked in the standing position. The areas of the breasts were marked out: the inframammary folds and the surrounding area for liposuction. The patient was next placed in the supine position, and infiltration started in the marked-out area. The infiltration solution comprised Ringer's lactate along with lidocaine and adrenaline (500ml of Ringer's lactate, 15ml of 2% lignocaine, and 1ml of 1:1000 adrenaline).

After a waiting period of 15 min, liposuction was started. Suction-assisted liposuction was done in all cases. Conventional liposuction ended when the pinch test revealed that mostly glandular tissue was present. After this, in cases where there were large glandular components in the peripheral aspect, special gynecomastia cannulas were used for gland removal along the periphery through the same liposuction port. This was done carefully so as to eliminate the glands extending to the periphery, as anatomical studies have shown that the glands extend in all directions to the periphery and surgical resection may not be complete unless these areas are addressed (Adhikari, 2021).

CONCLUSIONS

Unilateral gynecomastia is a rare case found especially in young adults. Diagnostics are commonly used by conducting a physical examination accompanied by a supportive examination of USG and hormone-related examination. Gynecomastia

therapy can be either pharmacological or surgical therapy where surgery is one of the therapies of choice for gynecomastia.

REFERENCES

- Adhikari, S. (2021). Minimal Incision Technique for Gynecomastia. *Journal of Cutaneous and Aesthetic Surgery*, 14(3), 344. https://doi.org/10.4103/JCAS.JCAS_96_20
- Carlos, A., Dornellas De Barros, S., De, M., Moura, C., & Ii, S. (2012). Gynecomastia: physiopathology, evaluation and treatment. *Sao Paulo Medical Journal*, 130(3), 187–197. <https://doi.org/10.1590/S1516-31802012000300009>
- Costanzo, P. R., Pacenza, N. A., Aszpis, S. M., Suárez, S. M., Pragier, U. M., Usher, J. G. S., Vásquez Cayoja, M., Iturrieta, S., Gottlieb, S. E., Rey, R. A., & Knoblovits, P. (2018). Clinical and Etiological Aspects of Gynecomastia in Adult Males: A Multicenter Study. *BioMed Research International*, 2018. <https://doi.org/10.1155/2018/8364824>
- Cuhaci, N., Polat, S. B., Evranos, B., Ersoy, R., & Cakir, B. (2014). Gynecomastia: Clinical evaluation and management. *Indian Journal of Endocrinology and Metabolism*, 18(2), 150. <https://doi.org/10.4103/2230-8210.129104>
- HE, C. (2011). Approach to the patient with gynecomastia. *The Journal of Clinical Endocrinology and Metabolism*, 96(1), 15A-17A. <https://doi.org/10.1210/JCEM.96.9.ZEG15A>
- Holzmer, S. W., Lewis, P. G., Landau, M. J., & Hill, M. E. (2020). Surgical Management of Gynecomastia: A Comprehensive Review of the Literature. *Plastic and Reconstructive Surgery Global Open*, 8(10), E3161. <https://doi.org/10.1097/GOX.0000000000003161>
- Kanakis, G. A., Nordkap, L., Bang, A. K., Calogero, A. E., Bártfai, G., Corona, G., Forti, G., Toppari, J., Goulis, D. G., & Jørgensen, N. (2019). EAA clinical practice guidelines—gynecomastia evaluation and management. *Andrology*, 7(6), 778–793. <https://doi.org/10.1111/ANDR.12636>
- Kasielska-Trojan, A., & Antoszewski, B. (2017). Gynecomastia Surgery-Impact on Life Quality: A Prospective Case-Control Study. *Annals of Plastic Surgery*, 78(3), 264–268. <https://doi.org/10.1097/SAP.0000000000000860>
- Maroney, J. C., Dannheim, K., Hollowell, M. L., Labow, B. I., & Rogers-Vizena, C. R. (2022). Incidental Pathologic Findings in Young Men with Gynecomastia. *Plastic and Reconstructive Surgery*, 149(3), 608–613. <https://doi.org/10.1097/PRS.00000000000008815>
- Rahmani, S., Turton, P., Shaaban, A., & Dall, B. (2011). Overview of gynecomastia in the modern era and the Leeds Gynaecomastia Investigation algorithm. *The Breast Journal*, 17(3), 246–255. <https://doi.org/10.1111/J.1524-4741.2011.01080.X>
- Swerdloff, R. S., & Ng, J. C. M. (2023). Gynecomastia: Etiology, Diagnosis, and Treatment. *Endotext*.
- Tarallo, M., Di Taranto, G., Fallico, N., & Ribuffo, D. (2019). The round-the-clock technique for correction of gynecomastia. *Archives of Plastic Surgery*, 46(3), 221. <https://doi.org/10.5999/APS.2018.004>