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A CASE REPORT: ANTIRETROVIRAL-ASSOCIATED BILATERAL GYNECOMASTIA

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ABSTRACT

Introduction: Human Immunodeficiency Virus (HIV) patients can now access antiretroviral drugs even in resource-limited area. The majority of patients receive the fixed daily dose of an efavirenz-based antiviral (ARV) as advised by the World Health Organization (WHO), despite the fact that gynecomastia is a recognized side effect of evafirenz.

Case Ilustration: We report a 31 year-old male with antiretroviral-associated gynecomastia that underwent the bilateral excision without liposuction procedure with satisfying result.

Discussion: Surgeon in limited-resource area faces limited resources to perform some specific procedure. Meanwhile, limited resources also poses patients avoidable adverse events in otherwise clinical setting. The antiretroviral-associated gynecomastia is unavoidable because limited regimen choice. Surgeon needs also to adjust the surgical option to achieve satisfying result without instrument complexities.

Conclusion: We reported satisfying surgical outcome in antiretroviral-associated bilateral gynecomastia patient with limited clinical setting.

Highlights:

1. Gynecomastia is a known potential side effect of efavirenz, which may manifest in HIV patients.
2. Healthcare providers should be vigilant and address the potential adverse effects of medications prescribed to individuals with HIV, including gynecomastia.
3. Surgeons in resource-limited areas show flexibility and can achieve satisfactory results in procedures despite limited resources and surgical options.

INTRODUCTION

Gynecomastia is increased amount of breast tissue and glands in males that can appear after birth, in adolescence, or as an adult[1]. It is characterized by breast hypertrophy and can occasionally occur

unilaterally[13,14,15]. The breast tissue expands due to an increase in the volume of ductal tissue, fat, or both[14,16]. Diagnosis can be determined by patient's history and physical examination[17]. Physiologically, 25% of gynecomastia is considered benign and has self-limiting characteristic[2,3].

Before puberty and after birth, bilateral gynecomastia is a common occurrence and is associated to drug- or narcotic-induced mammary gland expansion[4]. Gynecomastia is also associated with the hormonal imbalance such as over expression of estrogen and suppression or deficiency of androgen due to metabolic disorder[2]. Some drugs that has been known inducing gynecomastia such as spironolactone, cimetidine, ketoconazole, estrogen, 5-a reductase inhibitors, risperidone, verapamile, nifedipine, and antiretroviral drugs[5,6].

Even though gynecomastia has been identified as an adverse event to long-term use (2 years or more) of ARV, especially efavirenz, the majority of patients continue to receive a fixed daily dose of the antiretroviral (ARV) efavirenz-based WHO recommendations[7-9].

Gynecomastia management requires an individualized strategy, particularly when treating the patient's complaint, the condition's origin, and the patients' socioeconomic circumstances. According to the degree of gynecomastia, a variety of procedures are available and can be used. The most effective choice is minimally invasive surgery, which has been associated with fewer issues, a faster recovery, and better aesthetic outcomes[18,19]. Examples of minimally invasive surgery include endoscopic approaches and liposuction-assisted minimal incision surgeries. Gynecomastia surgery difficulties can be divided into early and late problems. Early issues can include hemostasis, seroma, infection, and bleeding, to name a few. Numbness, asymmetry, nipple necrosis, residual breast tissue, hypertrophic scar/keloid, and uneven shapes are examples of late issues[17,20]. These factors are significant while choosing the patient's best course of treatment. One way for treating gynecomastia is surgery since it produces good aesthetic results, relieves patient concerns like pain, and has good complication control[10]. We report a 31 year-old male with antiretroviral-associated gynecomastia who underwent bilateral gynecomastia excision in the resource-limited medical center.

CASE ILLUSTRATION

A 31 year-old male complaints of breast enlargement that is accompanied with moderate pain in office visit. The patient was diagnosed with HIV 4 years prior and already treated with ARV (tenofovir, lamivudine, efavirenz) ever since.

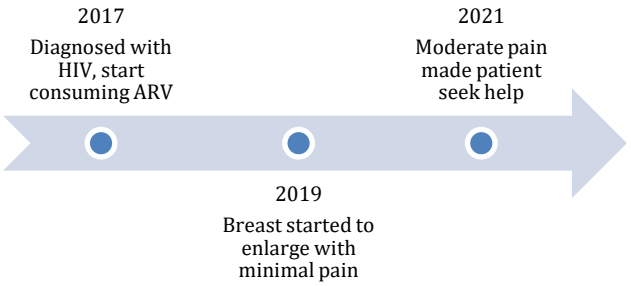

Figure 1. Patient history

The enlargement of the breast started 2 years after ARV administration with worsening pain. During physical examination we found round, and soft mass in both breast with moderate pain on palpation.

Figure 1. Clinical presentation of the gynecomastia during the first visit.

Additionally, we examined the thyroid glands and both testicles. Hormonal and radiology examination were not performed based on physical examination. We diagnosed this patient with bilateral gynecomastia Simon grade 2a and HIV-infection on ARV.

Simon grade 2a gynecomastia needs gland excision and liposuction in surrounding tissue. Periareolar incision was performed, and excision of the gynecomastia tissue was done with blunt dissection technic. We acquired 13 x 8 x 2 cm tissue from the right breast, and 13 x 9 x 2 cm tissue from the left breast (Figure 2). Both mass were sent to histopathologic examination. Due to limited resources, we did not perform liposuction. Uneven fat distribution was visible but there were no excess skin is needed to excise.

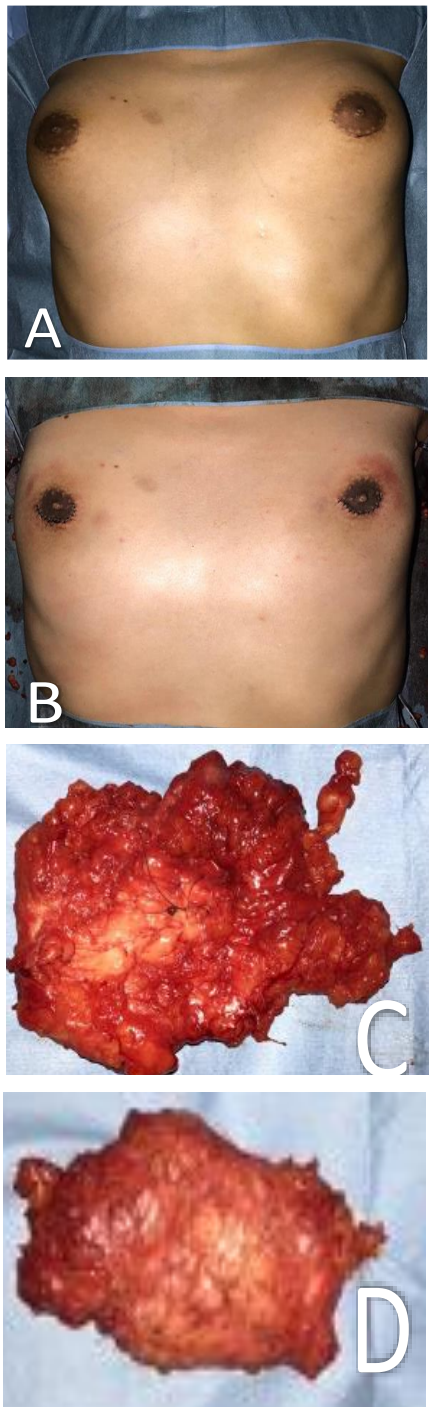

Figure 2. Clinical pictures of durante surgery. (A) pre-surgery, (B) post-surgery, (C and D) glands removed from both side.

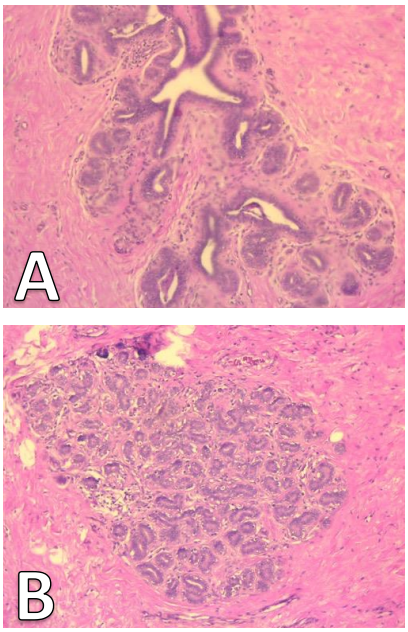

Figure 3. Histologic finding of mammry glands, left (A) and right (B) both showed fibrous connective tissue containing acinar and ductal cells with cuboid epithelial and myoepithelial layer, others showed mature fat tissue, with no sign of malignancy.

We used two vacuum drains, and elastic bandage around the chest. The patient was the sent to the ward for observation. Surgical wound were closed with paraffin gauze and sterile bandage.

Figure 5. Uneven fat distribution after the surgery

Patients was discharged at day 4 after the surgery and planned for outpatient visit to remove the sutures and follow-up care.

DISCUSSION

We did not do radiologic or hormonal tests after the physical examination to diagnose the gynecomastia because the patient was receiving efavirenz-containing antiretroviral medication at the time of the history and physical. Additionally, the fat and glandular tissue could be differentiated clearly, which was sufficient to make the diagnosis of gynecomastia. In fact, we continue to histopathologically examine the breast tissue that has been removed. Gynecomastia was confirmed by the pathological report, which also revealed mature fat tissue free of malignancy and fibrous connective tissue comprising acinar and ductal cells with cuboid epithelium and myoepithelial layer.

The Simon classification of gynecomastia placed this patient at grade 2a, which denotes moderate breast tissue enlargement without ptosis[11]. The surgery's objectives are to remove the hypertrophic fibrotic glandular tissue, reduce pain, and restore the appearance of the male breast. In order to treat this grade of gynecomastia, liposuction and breast tissue removal are recommended[12].

Surgeons in limited-resource area will always face challenges like this patient. When surgical approach is the only preferable method and the adverse effect of efavirenz is unavoidable due to limited choice of anti-retroviral regimen, adjusting the surgical technique due to limited surgical instruments is supposed to be done. It doesn't mean the outcome of the surgery will be less superior, but less instrument complexity also minimize the adverse event yet still aiming the best result.

Direct surgical excision is the preferred course of therapy for the patient because they experience pain and have a moderate amount of breast tissue expansion; nevertheless, due to our limited resources, we were unable to

use the liposuction/combined approach. Following the advice of several earlier studies, we used a peri-areola infero-lateral side incision to hide the scar and make it easier for the surgeon to locate and remove the tissue.[11]

Two months after the surgery during examination post surgery our patient showed an uneven fat distribution, the outcome might be better if combined technique was done (Figure 6). Nevertheless the patient satisfied with the result. There were no other complaints from the patients even after one year of the surgery and it regains the patient's confident back (Figure 7).

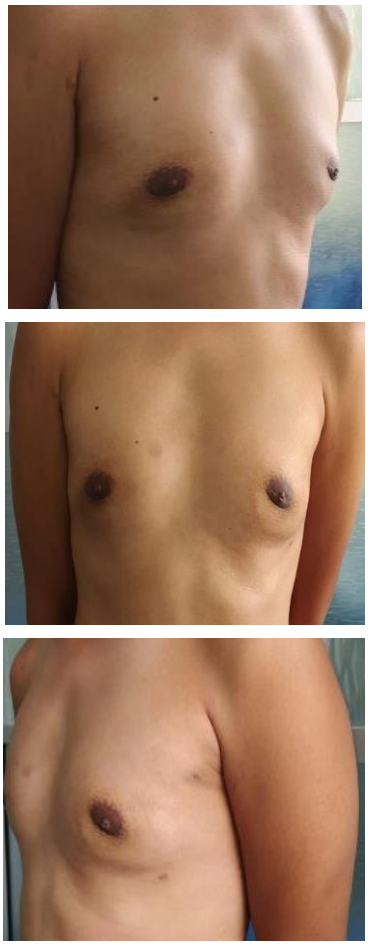

Figure 6. Clinical result in two months after the surgery

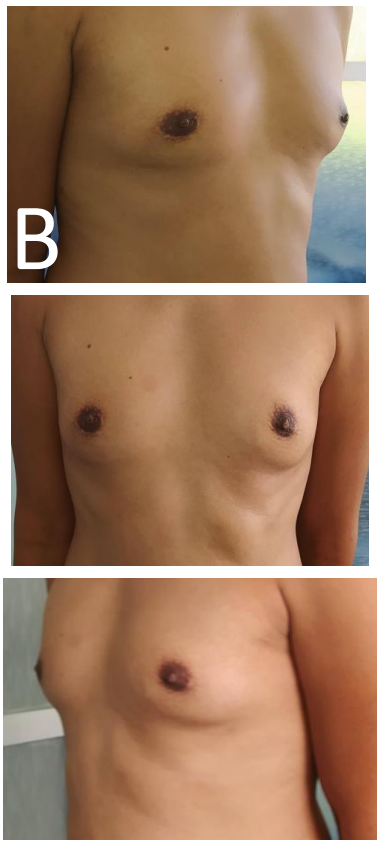

Figure 7. Clinical result in 1 year after the surgery

Patients are discouraged from getting medical help because they don't realize gynecomastia is curable. The growth will have grown to a magnitude where surgical intervention is the only preferable course of action for surgeons when patients eventually seek care due to pain. Since the combined approach cannot be used, the patient should be made aware of potential surgical outcomes, such as unequal fat distribution, in order to make their expectations as reasonable as possible.

This case reported a specific case of antiretroviral-associated gynecomastia in a resource-limited area adds to the existing knowledge and understanding of this condition. The highlighting the availability of antiretroviral drugs in resource-limited areas for HIV patients shows progress in healthcare accessibility.

This case demonstrating a successful surgical outcome in a limited clinical setting provides valuable insights for surgeons facing resource constraints.

The duration of follow-up and long-term outcomes of the surgical procedure is not mentioned, making it difficult to assess the sustainability of the results. The specific resources and equipment limitations faced by the surgeon are not detailed, which could have provided further context and understanding of the challenges encountered. The study does not provide a comparison to alternative treatment options or surgical techniques, which could have provided a more comprehensive analysis of the approach used.

For the future, It is important to educate HIV patients about the potential side effects of antiretroviral drugs, including gynecomastia. Patients should be informed about the possibility of this adverse effect and its management options. Healthcare providers should closely monitor patients receiving efavirenz-based antiviral treatment for the development of gynecomastia. Early detection can help in timely intervention and appropriate management. In a limited-resource setting where alternative treatment options may be limited, healthcare providers should carefully weigh the benefits and risks of different antiretroviral regimens. If gynecomastia is a significant concern, considering alternative drugs or drug combinations with a lower likelihood of causing gynecomastia may be beneficial. Surgeons in locations with minimal resources should modify their techniques and procedures when gynecomastia requires surgical intervention. For example, conducting bilateral excision without liposuction could be considered a surgical method simplification in order to attain positive outcomes without overly complicated instrumentation. Healthcare providers in limited-resource areas should work collaboratively with international organizations, NGOs, and local authorities to improve access to a wider range of antiretroviral drugs and resources. This can help expand treatment options and mitigate the occurrence of adverse events like gynecomastia.

CONCLUSION

Breast tissue removal without liposuction in patients with antiretroviral-related gynecomastia may nevertheless produce satisfactory results, despite the surgeon's inability to complete complex surgical procedures due to a lack of surgical instruments. However, it is imperative to provide accurate information regarding potential negative surgical effects.

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CONFLICT OF INTEREST

All authors have no conflict of interest in this study.

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AUTHOR CONTRIBUTION

The conceptualization, study design and methodology, data collecting, and data analysis were all helped with by SHEH and RAD. RAD was the second revised manuscript. EPS helped with writing, revise, and the final approval of the completed work

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