Case Report

# Spironolactone Induced Gynecomastia – A Case Report

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**ABSTRACT**

Gynecomastia is proliferation and enlargement of male breast tissue, it can be induced by various medication such as spironolactone, cimetidine, ketoconazole, metronidazole. Here, we present a case report of a 55 year old male patient admitted with chief complains of cough, breathlessness, pain and tenderness of chest. Patient was a k/c/o of HTN, DM and ACS with STEMI since few years and is on medication. As the patient condition didn't improve, detailed studies were conducted and the consulting physician diagnosed that patient was suffering from gynecomastia, and the physician discontinued spironolactone and substituted with Eplerenone.

**Keywords:** Gynecomastia, ACS, HTN, DM, Spironolactone, Eplerenone.

## INTRODUCTION

Gynecomastia refers to enlargement of male breast. It is caused by excess of oestrogen action and is usually the result of an increased oestrogen/ androgen ratio.[1] Gynecomastia can occur due to a physiological process or pathological conditions such as drug induced, endocrine diseases such as pituitary tumour, hyperthyroidism, etc. Non-endocrine causes such as cirrhosis, stress and renal failure. One of the most common drugs causing gynecomastia is spironolactone, potassium sparing diuretic. Spironolactone mainly acts as an aldosterone antagonist. It also inhibits testosterone production in the testicles, increases the process of aromatization of testosterone to oestradiol, and blocks androgen receptors at some tissues. Thus, spironolactone also acts as anti-androgenic agent.[2] However, it is widely prescribed for all the patient with ejection fraction less than 35% and severe symptomatic heart failure.

## CASE REPORT

A 55year old male patient was admitted to male medical ward with complains of cough, breathlessness and tenderness of chest from 2 weeks. Patient was suffering from Hypertension since 3years and using Metoprolol 25mg once a day. He was diagnosed with Diabetes 1 year back and was on Metformin 500mg twice a day. Four months back diagnosed with ACS with STEMI and was on T. Aspirin 75mg once a day. T. Clopidogrel 75mg, T. Spironolactone 25mg, T. Furosemide. On examination patients blood pressure was 120/80mm of Hg, pulse rate 88bpm, respiratory rate 24cpm. The general examination found clubbing of nails and pitting oedema on legs. From chest Xray it shows pulmonary oedema and echocardiographic examination revealed decompensated cardiomegaly, regional+ global LV dysfunction with ejection fraction 25%. On admission, Injections of Furosemide 40mg IV, Ceftriaxone 1g IV, Pantoprazole 40mg IV, Insulin R SC and Tablets of Aspirin 75mg, clopidogrel 75mg, Atorvastatin 40mg, Metformin 500mg, Spironolactone 25mg, Dapagliflozin 5mg and Metoprolol 25 mg were prescribed. During chest inspection of substantially enlarged breast were observed and palpated. In a sitting position with arms relaxed a firm, a mobile lump was palpated beneath each nipple. No focal nodular thickening was palpated. Upon high frequency ultrasound scanning it was diagnosed as true bilateral gynecomastia with predominance fibrous tissue. It was suspected to be spironolactone-induced gynecomastia and the drug was withdrawn and Eplerenone was added.

## DISCUSSION

Drug induced gynecomastia is a common adverse effect. It can also be caused by physiological process such as puberty, aging and some pathophysiological condition such as in alcoholic patients, Klinefelter syndrome, hyperthyroidism etc. [3] Gynecomastia is caused by benign hyperplasia from glandular fibrous and adipose tissue that occurs because of an imbalance of oestrogen and androgen that affect breast tissue. To differentiate between true gynecomastia with pseudo gynecomastia or another kind of breast tumour, proper physical examination and palpation of the tissue has to be done. In true gynecomastia, the tissue will feel tender, concentric around the nipple and areola.[2] Whereas, pseudo gynecomastia does not show a consistency such as a tender mound and does not pose a strong bond with surrounding tissue.[4] It is estimated that drugs including spironolactone, caused around 10-20% of gynecomastia. Spironolactone work as an aldosterone antagonist. It also inhibits testosterone and dihydrotestosterone. The first line investigation for gynecomastia is ultrasound of breast followed by mammography to confirm the diagnosis, which was done in our patient. In most of patients, stopping the offending agents is sufficient. Discontinuation of spironolactone treatment or replacement with other drugs with similar functions is recommended, for example,

eplerenone can be used, as it has a lower affinity to androgen and progesterone receptor than spironolactone, therefore minimizing the incidence of gynecomastia.

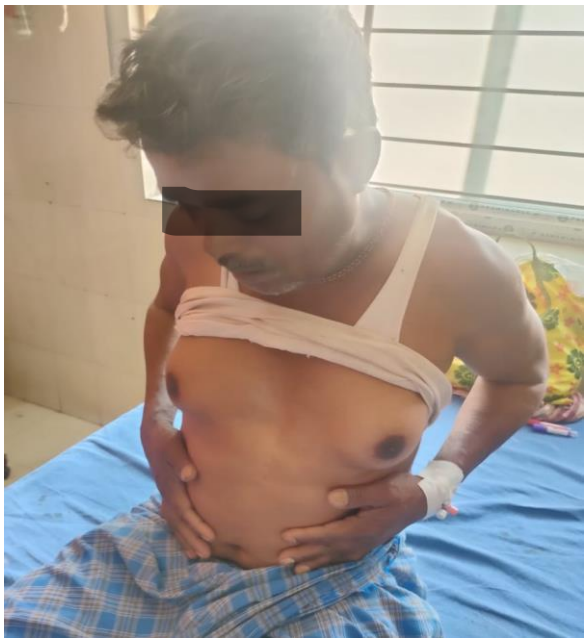

Figure 1

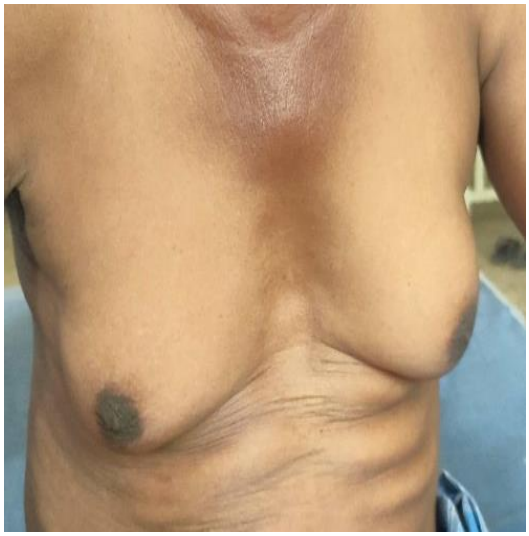

Figure 2

## CONCLUSION

Gynecomastia in men cause social stigma and psychological stress. One of the most common drug causing gynecomastia is spironolactone. Only few case reports are reported on spironolactone induced gynecomastia in the Indian population. Educing proper history and performing examination can result in correct diagnosis. In the case of drug-induced gynecomastia, dechallenge and replacing with safer alternative like eplerenone or canreonate. Within one month of discontinuing the causative drug, showed reduction of symptoms. Adverse effects such as gynecomastia should not be used as a barrier for avoiding spironolactone in patients with severe heart failure, as it could significantly decrease the risk of morbidity and mortality.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms the patient has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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