

Valproate induced Gynecomastia: A case report

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Abstract

Epilepsy is a common health problem and affects any group patients. Valproate is indicated in all seizure disorders. It has wide range of pharmacokinetic properties with a narrow therapeutic range. Long term use can cause many side effects including gynecomastia. So we describe a case of valproate induced gynecomastia in patient on chronic valproate therapy.

Keywords: Drug induced; Gynecomastia; Painful; Antiepileptics

1. Introduction

Gynecomastia is defined as palpable, subareolar breast tissue with a diameter of 2 cm or more. Mainly it is asymptomatic and prevalence increases with age and obesity.[1]. Cause of Gynecomastia is uncertain, but may be because of increased in estradiol/ testosterone ratio [2,3]. Gynecomastia in newborns mainly occurs in first week of life because of increase in maternal hormone during delivery [4]. Drug induced Gynecomastia is common and may be a cause in one fourth of total cases including children [5,ran].

2. Description of case

A 40 year old male with known case of idiopathic generalised epilepsy since 6 years on treatment with sodium valproate (500mg) twice daily for 10 years. Patient had good seizure control on valproate.

Now complaining of painless enlargement of breast.

On examination, patient was conscious, oriented to time, place, and person with all other central nervous system examination within normal limit. There was no gait disturbances, no nystagmus and all reflexes were within normal limit. On local examination of breast there was bilateral enlargement of breast tissue which was palpable and non-tender, no hard mass was palpable, no lump was present in breast tissue

All routine laboratory tests were done which was within normal range. Patient was undergone radiology investigation like USG breast which shows bilateral enlargement of breast tissue and no local abscess or any other pathology like lump.

Patient was referred to general surgeon for evaluation of breast tissue which was within normal limits. Then laboratory tests for hormonal and endocrine causes was done which was within normal limit. There was no hormonal disturbance was found. Patient was not taking any other medication except sodium valproate.

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Patient was on sodium valproate 500mg twice daily for 10 years for seizure control. So possibility of sodium valproate induced Gynecomastia was considered.

Sodium valproate dose was then tapered gradually and levetiracetam was introduced for prevention of seizures. Patient was followed up for 6 months after which Gynecomastia was resolved which shows that Gynecomastia was because of chronic sodium valproate use.

3. Discussion

Sodium valproate is a potent anticonvulsant used to treat and prevent generalised tonic clinic seizures, myoclonic seizures (JME), atypical absence seizures, Lennox -gastout syndrome (LGS) and also used in bipolar disorders, prophylaxis of migraine .

Drug induced Gynecomastia seen in many drugs like cimetidine, hormones like androgens, estrogens, isoniazid, ketoconazole, spironolactone, amiodarone, phenytoin, tricyclic antidepressants[6]. Mechanism of Gynecomastia not clear may be because of direct action of estrogen or estrogen like substance or inhibition of testosterone synthesis or action. Drug induced Gynecomastia more common in males and 36% cases in younger adult males (17-58 years) and 50% cases in more than 44 years man. Prevalence of Gynecomastia increases with age and body mass index (BMI). With BMI more than 25, prevalence was 80% [7].

Adolescent gynecomastia is usually seen during early stages of puberty because of low testosterone in compared to estradiol levels, which is corrected mostly by reassurance and education of adolescents and his family [8].

Gynecomastia because of mammary glandular tissue proliferation which is physiologically stimulated by oestrogens and inhibited by androgens.

Drugs that can cause gynecomastia

DRUG

- Amiodarone
- Calcium channel blockers (diltiazem, verapamil, nifedipine)
- Central nervous system agents (amphetamines, diazepam, methyldopa, phenytoin, reserpine, tricyclic antidepressants)
- Cimetidine
- Cytotoxic agents (alkylating agents, vincristine, nitrosoureas, methotrexate)
- Flutamide

Hormones

- Androgens
- Estrogens
- Human chorionic gonadotropin
- Isoniazid
- Ketoconazole, metronidazole
- Marijuana
- D-penicillamine
- Phenothiazines
- Spironolactone
- Theophylline.



Figure 1 Left sided gynecomastia

4. Conclusion

At last whether most medications causing gynecomastia and its relations remain unknown. Treatment of drug induced gynecomastia includes discontinuation of offending drugs. Rarely surgical interventions required.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest statement.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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