Imatinib-induced Gynecomastia

Dear Sir,

We hereby describe a case of imatinib-associated gynecomastia. A 40-year-old male, a nonconsumer of alcohol, diagnosed with chronic myeloid leukemia (CML) in chronic phase, was started on tyrosine kinase inhibitor therapy. After 3 months of initiating treatment, he presented with pain in both breasts. There was no history of decreased libido. On examination, he had a 2 cm × 2 cm mobile tender lump in the right breast and 1 cm × 2 cm mobile lump in the left breast [Figure 1]. His gonadal and abdominal examinations were normal. Investigations revealed normal renal and liver function tests. Hormonal analysis showed euthyroid status, normal serum testosterone (326 ng/dL), and elevated estradiol level (68 pg/mL). A sonogram of the breasts confirmed gynecomastia on both sides. A final diagnosis of imatinib-associated gynecomastia was made. Gynecomastia is reported to occur in patients with CML or gastrointestinal stromal tumors (GISTs). This effect is probably due to either a reduction in testosterone or due to elevated estradiol levels.[1,2]

Imatinib is a kinase inhibitor indicated for the treatment of CML, BCR-ABL-positive acute myeloid leukemia, and metastatic GIST. It is usually well tolerated and has a favorable safety profile. A rare but well-documented effect of imatinib is that it affects male reproductive hormones, leading to a decrease in testosterone production and gynecomastia. Both c-KIT and platelet-derived growth factor receptors (PDGFRs) are expressed in the testes and are involved in organogenesis and synthesis of testosterone. Imatinib inhibits c-KIT and PDGFR, leading to a decrease in testosterone production and gynecomastia.[3] Gynecomastia has also been reported in males on imatinib therapy for advanced GISTs, in which normal testosterone and elevated estradiol levels were noted.[2] Tamoxifen is a currently available therapeutic option with which clinical improvement has been reported.[2] Our patient was offered tamoxifen and is planned to be followed up after 3 months to assess clinical improvement and recovery.

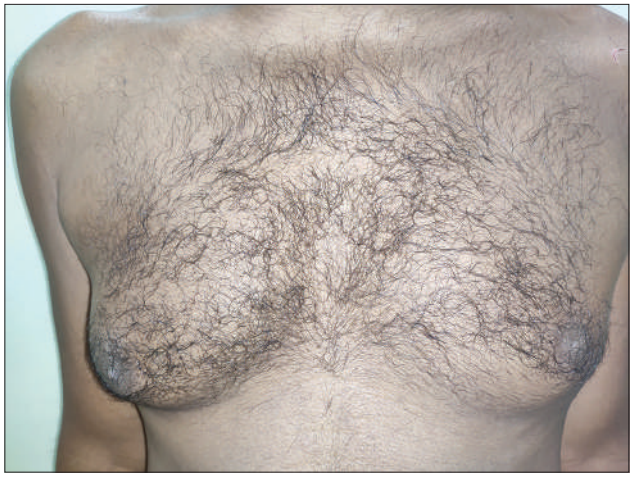

Figure 1: Bilateral gynecomastia

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to b`e reported in the journal. The patients understand that 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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Nil.

Conflicts of interest

There are no conflicts of interest.

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