

Anabolic androgenic steroids in delayed diagnosis of tuberculosis

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ABSTRACT

This is the first case report depicting masking of symptoms of intestinal tuberculosis by anabolic androgenic steroids (AAS) causing delay in diagnosis which lead to a major surgery. Negative tuberculosis skin test (TST) probably due to immunomodulating effects of AAS also contributed to the delay. Patient also had early dependence on AAS and rapid growth of scrotal sebaceous cysts, findings of which have not yet been reported.

Key words: Abdominal tuberculosis, immunosuppression, masking of symptoms, tuberculin skin test

INTRODUCTION

Anabolic androgenic steroids are indicated for wasting syndromes and also misused by athletes to enhance physical performance. They have crossed athletic tracks and are street used for improving personal appearance.^[1]

Tuberculosis is a debilitating disease presenting with symptoms of fever, loss of appetite, and weakness. Various comorbidities like HIV infection, alcoholism, renal failure, diabetes mellitus, neoplastic diseases and substance abuse can cause considerable delay in diagnosis.^[2]

We hereby report a case of intestinal tuberculosis where symptoms were masked by AAS causing delay in diagnosis, leading to a major surgery. Only one case has so far been reported depicting masking of pleural tuberculosis by AAS

which was due to false negative investigations of pleural fluid rather than masking of symptoms.^[3] This case also describes development of dependence on AAS within four months in contrast to 9-12 months as earlier reported.^[1]

CASE REPORT

A 40 year old, lean man, a fitness freak, developed weakness, fatigue, and decreased appetite since three months. His bodybuilder friend, a chemist, advised him intramuscular injections of Nandrolone decanoate (deca durabolin) 100 mg once a week. After about three months he started feeling energetic with elated mood and resumed the physical exercises. One month later he stopped injections but developed recurrence of symptoms along with markedly depressed mood and weaker physical appearance. Hence he restarted with 2-3 injections per month. Gradually he became irritable and preoccupied with thoughts of AAS use and improving physical appearance. Occasionally he used even six to seven injections per month because of feeling of inadequate effect. After one year of AAS use he noticed occasional low grade fever in the evening. The routine investigations of blood counts, X-ray chest and tuberculin test were without any positive findings. He was advised antipyretics as and when required, multivitamins and temperature charting. He did not reveal his AAS dependence. Five months later he

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developed mild pain in right lower abdomen which gradually increased in intensity and frequency and was associated with nausea, vomiting and severe abdominal pain after meals and went to tertiary care hospital. His history was unremarkable except tobacco and cannabis abuse for 15 years and one episode of hypokalemic periodic paralysis five years back. On examination the surgeon found tenderness in right iliac region. He also had multiple large scrotal sebaceous cysts for eight years with rapid growth in last one year. Routine blood investigations were normal except increased erythrocyte sedimentation rate, increased level of alkaline phosphatase and decreased levels of FSH and LH. His tuberculin skin test was negative and ECG was normal. The abdominal USG revealed mass in ileocaecal junction, barium study showed stricture of ascending colon with dilatation of terminal ileum, and CT abdomen revealed thickening of walls of terminal ileum and caecum with enlarged mesenteric lymph nodes. Laparotomy with right hemicolectomy was done. Sebaceous cysts were operated after 15 days. On histopathological examination segment of intestine and mesenteric lymph nodes were found to be tubercular. He was kept on antituberculous treatment for six months, and referred to psychiatrist for anabolic androgenic steroid dependence. He was given fortnightly counselling sessions for two months and then monthly for six months. He disclosed that since his wife was tall and obese, he found himself more physically and sexually compatible with her while on AAS. Pharmacotherapy was not required except analgesics for occasional headaches.

DISCUSSION

Tuberculosis, a major public health problem in India, is the most common cause of death due to single infectious agent in adults, and accounts for over a quarter of avoidable deaths globally.^[4] Gastrointestinal tuberculosis, although rare in industrialized countries, continues to be a common problem in developing countries. It usually has protean manifestations with insidious onset in majority of patients.^[5]

Our patient initially had weakness, fatigue and decreased appetite. Improvement in symptoms after starting use of AAS was probably due to lifting of mood and AAS induced immunomodulation.

Effect of mood on somatic symptoms is well established. Fatigability, weakness and altered appetite are well known symptoms of depression which improve significantly after lifting of mood.^[6] Although some other substances like cannabis, cocaine, caffeine also produce euphoria but only after acute intoxication and are associated with other prominent physical signs and symptoms. Gradual impact of AAS and resemblance of its withdrawal symptoms with nonspecific symptoms of tuberculosis makes it more prone to masking of symptoms of tuberculosis. AAS also causes modulation of immune responses which involve interleukin 1 beta (IL-1 β), tumor necrosis factor alpha (TNF- α) and interferon

gamma (IFN- γ).^[7] These are the substances which have a major role in production of symptoms of tuberculosis.^[8]

Investigations for fever was again an opportunity for detection for tuberculosis but this time negative tuberculin skin test (TST) played a role to patient's misfortune. TST is known to have false negative rate of 25% which is due to various factors, including immunosuppression.^[9] Negative TST in this case may be due to immunomodulating effects of AAS. One case showing negative TST due to AAS has already been reported.^[3]

Patient initially did not reveal his AAS abuse to physician. This is in line with previous studies which report that majority of AAS abusers distrust medical professionals and do not disclose it to their treating physicians.^[1] During hospitalisation he reported it probably due to seriousness of his condition, impending major surgery and concurrent use of other medicines.

This patient had large sebaceous cysts on scrotum with history of rapid growth in last six months. Although this is not a known side effect of AAS use, increase in growth of sebaceous glands and resulting acne have been documented.^[1] It is possible that this side effect might have been missed in previous studies as patients are usually reluctant to reveal it unless specifically asked. Further, most studies involved young age group who are more prone to acne, a clearly visible symptom having significant importance in that age.

Usually period for development of AAS dependence is 9-12 months^[1] but this patient developed dependence in just four months probably because AAS withdrawal symptoms were associated with appearance of symptoms of tuberculosis. One more contributing factor in dependence was difference in built of patient and his wife. As he developed a better body perception it reduced his subconscious feeling of being a mismatch with wife. On stopping AAS, he was compelled to resume it due to reversal of symptoms.

CONCLUSION

History of AAS abuse should be specifically asked from all patients specially those who are suspected to have tuberculosis as this may mask clinical presentation. AAS should be added to list of factors causing false negative TST. Development of AAS dependence is not as straight forward as it is perceived. Further studies regarding adverse effects of AAS should include scrotal sebaceous cysts.

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Upadhyaya, *et al.*: Anabolic steroids in diagnostic delay of tuberculosis

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