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The Cumulative Burden: A Case of Alcoholic Liver Disease, HIV, And Laryngeal Carcinoma in Chronic Substance Abuse

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ABSTRACT

This case report outlines the complex clinical course of a 55-year-old male with a history of chronic alcohol and tobacco abuse, presenting with a cumulative burden of alcoholic liver disease, HIV, and laryngeal squamous cell carcinoma. The patient's long-standing addiction led to progressive health decline, including liver cirrhosis, an incidental HIV diagnosis, and ultimately, a head and neck cancer requiring radical chemoradiotherapy. Despite multiple medical interventions, including a rehabilitation attempt, his persistent substance use complicated the course of his cancer treatment. A pre-treatment fall under the influence of alcohol resulted in a subdural hematoma requiring urgent neurosurgery, delaying cancer therapy. Throughout his cancer treatment, he continued consuming alcohol and received no dedicated rehabilitation for severe side effects like dysphagia, hoarseness of voice developed due to the radiation therapy. He tragically succumbed to aspiration pneumonia, a preventable complication exacerbated by the side effects of his therapy and the lack of comprehensive supportive care post chemo-radiation therapy. Hence, this case underscores the critical need for a holistic, multidisciplinary approach that aggressively addresses underlying addictions and mental health issues alongside primary disease management to improve treatment adherence, patient outcomes, and quality of life in complex clinical scenarios.

Keywords: Alcoholic Liver Disease, HIV, Laryngeal Carcinoma, Chronic Substance Abuse, Aspiration Pneumonia, Multidisciplinary Care.

INTRODUCTION

Alcoholic liver disease(ALD) covers a spectrum of disorders which includes- fatty liver, which over the period of time progresses to alcoholic hepatitis and culminates in alcoholic cirrhosis [1]. Alcoholic cirrhosis is often associated with complications like irreversible liver damage and portal hypertension[2]. Alcohol consumption increased by 55% from 1992 to 2012 with doubling of per capita consumption between 2005 and 2016[3]. A study conducted in the eastern part of India concluded that almost 50% of the patients with ALD started drinking before the legal age of drinking[4]. Consumption of alcohol since an early age is also associated with an increase in risk taking and impulsive behaviour in alcoholics. These risk taking behaviors can be engaging with female sex workers (FSW), consumption and use of other psychoactive substances violence and self harming behaviour. This often leads to fatality due to road traffic accidents (RTA) or causes patients to contract HIV, Hepatitis B & C. In 2012, approximately 33.1% of the road traffic accident deaths occurred due to drunk driving[5]. Almost 0.9-5.6%of hepatocellular carcinoma cases are associated with alcoholic liver cirrhosis[6]. Hence, it is safe to say that heavy alcohol consumption is a major cause of morbidity and mortality.

Tobacco is another substance consumed either as a chewable or smoked quite often along with alcohol in India. Tobacco being all the more deadly because of a combination of nicotine addiction and carcinogen exposure, causing numerous cases of cancer every year. Carcinogens present in cigarette smoke are tobacco-specific nitrosamines, polycyclic aromatic hydrocarbons and volatile organic compound[7]. Tobacco consumption in any form is often associated with squamous cell carcinoma of the upper aerodigestive tract. Amongst tobacco smokers, laryngeal carcinomas are more common and oral cavity cancers are more common amongst tobacco chewers[8]. As opposed to the general population,

people with HIV are at an increased risk of developing cancer[9]. The treatment for advanced-stage laryngeal cancer warrants multimodal therapy, which may include surgery followed by radiation therapy, primary chemoradiation therapy, or a combination of all 3 methodologies[10]. Chemo-Radiotherapy(CRT) for Head and Neck Squamous cell Carcinoma(HNSCC) has significant implications on the quality of life of the patients. CRT in these cases is associated with complications like pain, dermatitis, dysphagia ,xerostomia, mucositis, limited mouth opening and concomitant weight loss[11,12].

Hence this article highlights the importance of holistic treatments of complex cases for complex medical cases, particularly those compounded by chronic substance abuse.

CASE PRESENTATION

The patient, a 55-year-old male, presented with a 21-year history of chronic alcohol abuse, initiated by peer pressure, which progressed to binge drinking and various risky behaviors, including unprotected sex and drunk driving. These behaviors had tangible consequences, such as a road traffic accident in 2004 that resulted in tibial and fibular fractures. His health continued to decline over the years. In 2013, he experienced his first episode of hematemesis, requiring a blood transfusion and leading to the ultrasound sonography diagnosis of liver cirrhosis, although no formal treatment was initiated at that time. He also began suffering from recurrent allergic reactions which were characterized by lip swelling, pruritus, breathlessness, and hypotension, which were usually managed with efcorlin injections. By January 2015, his liver disease significantly worsened, presenting with a sudden decrease in appetite, jaundice, a high MELD score, and a palpable liver. This necessitated his admission to the Liver ICU for the initiation of cirrhosis treatment.

Further complications arose in 2017, while undergoing a pre-operative assessment for septoplasty due to sleep apnea symptoms, he was incidentally diagnosed as HIV-positive. At this time, his platelet counts were critically low (zero as per machine reading), prompting for an immediate bone marrow biopsy, multiple IV-IG infusions (eight bottles), and platelet concentrates. He was then started on antiretroviral therapy (ART), though he subsequently experienced idiopathic fevers. In 2018, he developed ascites and pedal edema, but diuretic therapy led to symptomatic hyponatremia and delirium, requiring drug discontinuation. His MELD and GGT counts consistently remained high. Despite these severe health issues, his consumption of alcohol, smoking, and chewing tobacco continued unabated. Consequently, he was prescribed Acamprosate and advised nicotine gums. Concurrently, he was diagnosed with clinical depression with socio-occupational impairment and began treatment with Sertraline. Zolpidem was initially prescribed for sleep disturbances but discontinued due to daytime drowsiness.

In 2019, his escalating alcohol consumption led to admission to a rehabilitation center. However, due to inadequate care, he developed delirium, dehydration, oral fungal infections, acute kidney injury (noted on USG), decreased albumin, deranged PT-INR, and electrolyte imbalances. He required IV fluids and three days to regain orientation. During the COVID-19 lockdown in 2020, his alcohol consumption paused for six months, but resumed excessively once restrictions were lifted.

By March 2021, he presented with new symptoms of dysphagia and odynophagia, prompting a CT scan of the neck which revealed a 2.4 x 2.0 x 1.4 cm soft tissue lesion in the left pyriform sinus with associated lymphadenopathy. Relatives also noted a change in his voice. A direct laryngoscopy with biopsy confirmed squamous cell carcinoma with keratinization, immunonegative for p16 and EBERs. Initial management focused on pain relief. Pre-cancer treatment assessments showed portal hypertension, liver parenchymal disease with mild splenomegaly, and a normal CD4+ count. Given his family history of oral cavity carcinoma, the oncologist diagnosed Grade 2 dysphagia, odynophagia, and staged him as cT2N1M0. The planned treatment involved radical radiotherapy and weekly concentrated chemotherapy (cisplatin + carboplatin), totaling 30 cycles of IMRT following PET-CT based planning. Dental prophylaxis was recommended and performed beforehand. However, a pre-treatment PET-CT revealed a chronic subdural hematoma (due to a fall under alcohol influence, which he could not recall) causing a significant midline shift. This necessitated urgent neurosurgery before initiating CRT. Following a burr hole surgery and suture removal, CRT commenced, though chemotherapy was administered at 50% dilution, and radiation cycles were increased to 33. He received Emset for nausea. Throughout treatment, he experienced weight loss, loss of appetite, and hoarseness of voice, and notably, no rehabilitation therapy was provided. The patient continued consuming Indian Made Indian Liquor (IMIL) throughout his cancer treatment. Tragically, after compleThis case report highlights the complexities of managing a patient with multiple comorbidities, including alcoholic liver disease, HIV, and head and neck squamous cell carcinoma. The patient's history of chronic alcohol abuse and smoking led to liver cirrhosis, significantly impacting treatment options and outcomes. Managing liver health through abstinence and metabolic control was crucial, while cancer treatment required a multidisciplinary approach complicated by underlying liver disease and HIV.

Early intervention in managing alcoholic liver disease is critical in preventing its progression to cirrhosis and liver cancer. Comprehensive care for patients with multiple comorbidities requires a multidisciplinary approach, addressing all aspects of their health, including physical, emotional, and social well-being. Managing risk factors, such as metabolic syndrome and smoking, is essential for preventing disease progression and improving outcomes. The key takeaway from this case is the need for increased awareness about the risks associated with heavy drinking and the importance of liver health. Personalized medicine approaches, taking into account individual patient characteristics and risk factors, may improve treatment outcomes. Multidisciplinary care teams, including hepatologists, oncologists, and other specialists, are essential for managing complex cases like this patient.

This case majorly illustrates the intricate interplay of multiple severe comorbidities and the overwhelming difficulties in achieving treatment adherence in the face of active addiction. Despite medical interventions and even a rehabilitation attempt, his persistent consumption of alcohol during his cancer therapy directly contributed to critical setbacks, including the subdural hematoma and likely his overall debilitated state. Crucially, the absence of dedicated rehabilitation therapy for the significant side effects of CRT, particularly dysphagia, proved fatal, culminating in aspiration pneumonia. This tragic outcome underscores the vital need for a holistic, multidisciplinary approach that not only targets the primary diseases but also aggressively addresses underlying addictions, mental health issues, and proactive rehabilitation strategies to improve patient outcomes and quality of life in such incredibly complex clinical scenarios. His unfortunate demise from aspiration pneumonia, a preventable complication exacerbated by treatment side effects and a lack of specific rehabilitative support, underscores the critical need for a more integrated and comprehensive approach to care. Further research is needed to develop more effective treatment strategies for patients with multiple comorbidities.

CONCLUSION

Managing patients with multiple comorbidities, such as alcoholic liver disease, HIV, and head and neck squamous cell carcinoma, requires a holistic and multidisciplinary approach. This case report highlights the complexities of treating patients with multiple health issues and the importance of addressing physical, emotional, and social well-being. Liver disease management is crucial, and abstinence from alcohol and managing metabolic health are essential to preventing further complications. Liver cirrhosis significantly impacts treatment options and outcomes.

Cancer treatment for patients with multiple comorbidities requires a multidisciplinary approach, taking into account underlying liver disease and HIV. Active addiction can lead to treatment non-adherence and poor outcomes, emphasizing the need to address underlying addictions and mental health issues. Early intervention is critical in managing alcoholic liver disease and preventing its progression to cirrhosis and liver cancer. Comprehensive care, addressing all aspects of a patient's health, is necessary to improve treatment outcomes and quality of life.

Personalized medicine approaches, considering individual patient characteristics and risk factors, may also improve treatment outcomes. Multidisciplinary care teams, including hepatologists, oncologists, and other specialists, are essential for managing complex cases. Proactive rehabilitation strategies can improve patient outcomes and quality of life. Increased awareness about the risks associated with heavy drinking and the importance of liver health is also necessary.

This case report underscores the importance of a holistic approach to managing patients with multiple comorbidities. The patient’s demise from aspiration pneumonia, which is a preventable complication, was exacerbated by treatment side effects and a lack of specific rehabilitative support, underscores the critical need for a more integrated and comprehensive approach to care. Therefore highlighting the importance of speech therapy for better prognosis. Further research is needed to develop more effective and personalised treatment strategies for patients with multiple comorbidities.

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