

Case Report

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Anaesthetic management in a patient with cervical lipodystrophy secondary to antiretrovirals. Case report



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Summary

Introduction: Lipodystrophy associated with antiretroviral therapy can present as fat accumulation in different areas of the body; a higher incidence has been reported with the use of nucleoside analogues. Fat accumulation in the neck can cause limited movement and morphological changes that lead to a difficult airway (DA). Awake intubation with a fibroscope is considered the gold standard for the management of an anticipated DA.

Case Presentation: A male patient with cervical lipodystrophy secondary to antiretroviral therapy was scheduled for liposuction. The decision was made to intubate the patient awake with a fibroscope, followed by sedation with dexmedetomidine and local airway anesthesia, with no complications.

Discussion: As in the case presented, the importance of performing an adequate preanesthetic assessment to identify factors that predict a potential for adverse events (ADV) and thus define an appropriate approach is confirmed. Intubation and extubation of the awake patient with predictors of ADV decreases the incidence of major complications, helping to avoid the dreaded scenario: "can't intubate, can't ventilate."

Keywords: Lipodystrophy; difficult airway; tracheal intubation; fibroscope

Abstract

Introduction: Lipodystrophy associated with antiretroviral therapy has been reported mainly for the use of nucleoside analogues, it appears as accumulation of fat in different areas of the body; for example, when fat accumulates around the neck resulting in changes in the morphology and causing movement limitation, both can predispose to a Difficult Airway (DA). The awake fiberoptic intubation is the benchmark for the management of an anticipated DA.

Case Presentation: Male patient with neck lipodystrophy associated to antiretroviral therapy scheduled for neck liposuction, the determined treatment was an awake fiberoptic intubation prior sedation with dexmedetomidine and local anaesthesia in the airway.

Discussion: To identify factors that can anticipate a DA, the importance of an adequate pre-anaesthetic evaluation has been emphasized so an appropriate approach can be defined. The awake fiberoptic intubation while preserving spontaneous breathing, can prevent the risk of a critical desaturation or a Can't Intubate Can't Oxygenate (CICO) scenario.

Keywords: Lipodystrophy; Difficult airway; Tracheal intubation; Fiberscope

Introduction

The Human Immunodeficiency Virus (HIV) and antiretroviral therapy can trigger accumulation and loss of body fat presenting as lipoatrophy, lipodystrophy (accumulation of fat in the abdomen, cervical spine, breast or anterior neck and mandible) or a combination of both, sometimes accompanied by hyperlipidaemia, insulin resistance or lactic acidemia, has an approximate prevalence of 31-65% [1,2]. Risk factors include having antiretroviral therapy that includes the use of nucleoside reverse transcriptase inhibitors, female sex, low pre-

treatment body weight, among others [3,4]. The pathophysiology involves changes induced by HIV per se since it generates a proinflammatory state in adipose tissue, an increase in the expression of cytokines and resistance to insulin, as well as antiretroviral therapy, although its exact influence is unknown, it is known that it involves a disruption in the function of adipocytes and mitochondrial dysfunction that led to alterations in lipid and glucose metabolism [1,5]. The accumulation of fat in the neck generates changes that can lead to a difficult airway (DAV), which is defined as a clinical situation in which a trained anaesthesiologist experiences difficulty in ventilation with a face

mask, difficulty in orotracheal intubation or both, an incidence of 0.3-13% is reported, inadequate management can result in brain damage and even death, which is why different scales have been created to predict the risk of a DAV [6].

Awake intubation with fiberoptic is considered the gold standard for the management of an anticipated VAD, it can be performed with administration of local anaesthetics in the upper airway, in the mucosa or with regional blocks accompanied by adequate sedation to ensure that it is an easy and safe procedure by providing comfort and cooperation by the patient, aiming to preserve spontaneous ventilation during the procedure to prevent periods of desaturation or the scenario of cannot ventilate-cannot intubate, an efficacy in the adequate management of an anticipated VAD is between 88-100% depending on the experience of the operator [7-9] To perform this type of procedure it is important to have adequate sedation, keeping the patient cooperative without losing respiratory control and causing apnea. Dexmedetomidine, a selective α -2 adrenoceptor agonist, is the most studied drug in this scenario, it has been reported to be efficient, well tolerated and associated with better conditions for intubation, since it generates sedation, anxiolysis, reduction in the use of analgesics, salivary secretion and minimal respiratory depression. It has been described that a bolus dose of 1 mcg / kg followed by an infusion at 0.2-0.6 mcg / kg / hour maintains adequate sedation, its use has been compared with propofol, opioids, benzodiazepines and various combinations between them, resulting in fewer episodes of desaturation [10, 11].

Case Presentation

A 47-year-old male patient with a history of Human Immunodeficiency Virus (HIV: CD4 683 and undetectable viral

load) diagnosed in 2000, on antiretroviral therapy (tenofovir and emtricitabine) with secondary neck lipodystrophy. The patient was scheduled for neck liposuction by the plastic and reconstructive surgery department (Figure 1). Preanesthetic evaluation revealed the patient with grade 1 obesity (Body Mass Index (BMI) of 33 kg/m²), neck circumference greater than 50 cm, Mallampati score 4, grade 3 mandibular protrusion, snoring, and an unevaluable thyromental distance. Computed tomography revealed lipid accumulation in the neck, skin, and musculoaponeurotic system with minimal sagging. Laboratory tests were within normal parameters, with no contraindications for the surgical procedure. Due to the presence of risk factors for ventilation and intubation, an early VAD was considered. It is decided to intubate the patient awake with a fiberoptic (Figure 2) so sedation is performed in the preanesthetic area 30 minutes before the surgical procedure with dexmedetomidine at 0.4 micrograms (mcg) per kg (30 mcg), under non-invasive monitoring the patient enters the operating room, local anaesthesia is administered to the airway with lidocaine in topical solution spray at 10% and intubation is performed with a fiberoptic maintaining spontaneous ventilation and cooperation throughout the procedure by the patient. Once the airway was secured, anaesthetic induction was performed with fentanyl (total 400 mcg), propofol 200 milligrams and rocuronium 50 milligrams (Figure 3). Regarding the surgical procedure, local anaesthetic infiltration (lidocaine plus epinephrine) is performed, then lipectomy, septoplasty and liposuction of the neck are performed, obtaining 200 ml and 20 ml of bleeding, drains are placed and closure by layers. The patient is extubated awake without incidents, analgesia is maintained with buprenorphine in the postoperative period and discharged home after three days of hospital stay with oral analgesia, antibiotic therapy, diet and indication of rest for 7 days.



Figure 1: Patient with neck lipodystrophy preoperatively. Source: Authors.

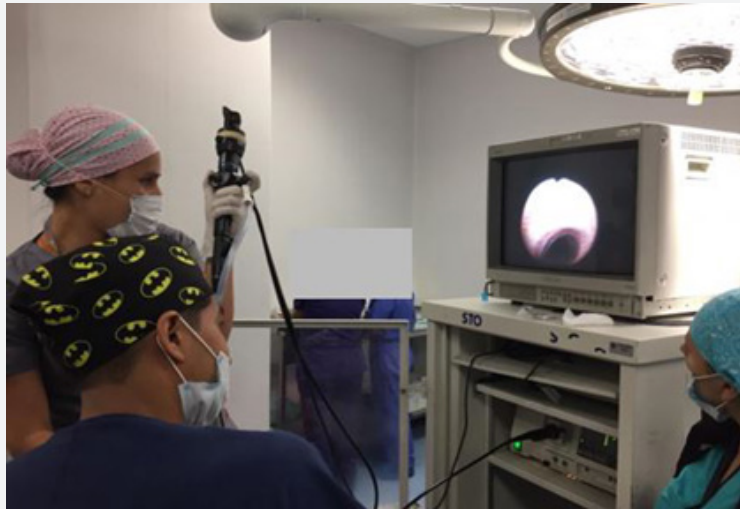


Figure 2: Awake intubation, fiberscope entering the trachea. Source: Authors.



Figure 3: Patient with orotracheal tube, prior to surgical procedure Source: Authors.

Discussion

Timely diagnosis represents a challenge due to its multifactorial etiology, however, it is of great importance to perform it to avoid possible complications, which include mood disorders, low self-esteem, social isolation, poor adherence to treatment, [1,2] pain and limitation in neck movement, sleep apnea, alteration in the anatomy of the airway, as well as increased cardiovascular risk, so it must be complemented with a lipid profile, glucose tolerance and glycosylated hemoglobin to perform a complete approach to the patient. [12,13] Treatment includes medical options such as lifestyle modifications, changes in antiretroviral therapy, and the use of metformin or tesamorelin [1]. Surgical options depend on the distribution and degree of fat accumulation and may include liposuction or lipectomy. However, the duration of the effect varies, and recurrence is common [3,14]. In patients undergoing scheduled surgery with predictors of difficult airway, it is

essential to carry out an anaesthetic plan, since during anesthesia, surgery and the postoperative period, the most important thing is to secure the airway and maintain respiratory function in order to achieve adequate oxygenation, since poor management represents one of the main causes of morbidity and mortality [15,16]. A complete preanesthetic assessment is important in order to have a preoperative plan that covers different possible scenarios, considering intubation and extubating of the awake patient, as it reduces the risk of major complications in patients with predictors of a difficult airway, thus avoiding the dreaded scenario: “can’t intubate, can’t ventilate.”

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