Journal of Clinical Anesthesia (2016) **33**, 47–50

ELSEVIER

Journal of Clinical Anesthesia

Case Report

Two loose screws: near-miss fall of a morbidly obese patient after an operating room table failure☆

Russell K. McAllister MD (Associate Professor of Anesthesiology/Assistant Dean-Quality and Patient Safety)*, Robert T. Booth MD (Resident in Anesthesiology), Timothy M. Bittenbinder MD (Associate Professor and Chair of Anesthesiology)

Department of Anesthesiology, Baylor Scott & White Health/Texas A&M Health Science Center College of Medicine, Temple, TX, USA

Received 31 August 2015; revised 30 December 2015; accepted 11 January 2016

Keywords:
Obese patient;
Near miss fall;
Operating room table failure;
Operating room table tilt

Abstract Operating room surgical table failure is a rare event but can lead to a dangerous situation when it does occur. The dangers can be compounded in the presence of obesity, especially in the anesthetized or sedated patient. We present a case of a near-miss fall of a morbidly obese patient while turning the patient in preparation to transfer from the operating room table to the hospital bed when 2 fractured bolts in the tilt cylinder mechanism led to an operating room table failure.

1. Introduction

Operating room (OR) table structural failure is a very rare event; however, when it does occur, it can lead to a dangerous situation that may put a patient at increased risk for a fall from height that can lead to significant morbidity and mortality. The increased incidence of obesity in our society can also play a role in the ability to rescue a patient from these dangerous situations. We present a case of an OR table bolt failure which led to a near-miss fall of an obese patient during transfer from the OR table to the patient's hospital bed.

2. Case report

The patient is a 34-year-old morbidly obese woman with severe hidradenitis of the lower abdominal pannus, bilateral groins, bilateral labia, and perirectal areas who presented to the OR for a series of staged surgical interventions which included surgical wound debridement, negative pressure wound therapy, split thickness skin grafting, and dressing changes. The patient is 5′10″ (1.78 m) and 287 lb (130 kg) with a body mass index of 41 qualifying her for diagnosis of obesity class 3 (body mass index >40.0).

The patient underwent general anesthesia and was placed in the lithotomy position for a surgical wound debridement. The intraoperative course was uneventful through emergence. As the patient was emerging from general anesthesia, she was rolled to a left lateral decubitus position to place a rolling slider board under her back for transfer from the OR table to the hospital bed. When the patient was moved to this position, a bolt in the tilt cylinder mechanism failed causing the OR table top and patient

☆ Conflicts of interest: There are no conflicts of interest to disclose.

* Correspondence: Russell K. McAllister, MD, Baylor Scott & White Health, 2401 South 31st Street, Temple, TX 76508.
E-mail address: rmcallister@sw.org (R.K. McAllister).

http://dx.doi.org/10.1016/j.jclinane.2016.01.016
0952-8180/

Fig. 1 One of the broken bolts (top) of the tilt cylinder mechanism compared to an intact bolt (bottom).

to continue rotating to the left as the table top began to tilt laterally to the left. Fortunately, there was sufficient staff in position to stabilize the patient until more staff could assist, preventing the patient from falling from the OR table to the floor.

3. Discussion

Obesity rates among US adults aged 20 to 74 years more than doubled from 1960 to 2010 and the rate of the extremely obese increased 6-fold in that same period [1]. Along with the increase in prevalence of obesity, the medical cost of obesity nearly doubled over a 10-year period starting in 1998, rising from $78.5 to $147 billion in 2008 [2]. More than two-thirds (68.5%) of adults were either overweight or obese, and 6.4% were extremely obese (grade 3 obesity) in 2011 to 2012 [3]. The prevalence of obesity puts OR personnel at an increased risk for injury and equipment at an increased risk for failure, both of which increase the risk to the patient. Our case in which an extremely obese patient narrowly missed falling from an OR table while transferring underscores these risks.

A literature search through the PubMed database reveals no reports of patient falls in the OR. This is in contrast to simple Internet media searches which show that there are several high-profile cases of patient injury due to falls from height in the OR. In addition, an informal query of approximately 200 anesthesiologists at a regional meeting revealed that many had experienced patient falls or near-miss falls in the OR. Thankfully, many of these incidents result in no injury. However, there are examples of OR falls from height in the media that have resulted in significant morbidity and mortality. We can assume that these cases are rarely discussed due to the sensitive nature of the issue and possible ongoing litigation when patient harm occurs. A query of the Anesthesia Closed Claims Project Database revealed that there have been a total of 21 claims related to patient falls off of an OR or procedural table since 2000. The majority of these falls resulted in temporary, nondisabling injuries; however, 2 of the patients sustained permanent severe injuries as a result of their falls [4]. We present what we believe to be the first reported case of a bolt failure in the tilt cylinder mechanism that allowed the OR table top to rotate freely to the left and right, despite being in the locked position.

The Steris 3080 OR table (Steris Corporation, Mentor, OH) was disassembled to find that the 2 bolts fastening the tilt cylinder bracket to the table's base had sheared in half (Fig. 1). The tilt cylinder bracket connects an actuating arm, which manipulates the OR table laterally in an "airplane" tilt fashion, to the table's base (Fig. 2). When both bolts failed, the bracket broke free from the base causing the OR table to abruptly and steeply rotate to the left. Per our institution's OR table maintenance policy, all OR tables are checked and serviced semiannually. According to the head of our institution's biomedical engineering department, in the nearly 2 decades, these or similar OR tables have been used, there have been approximately 1 dozen instances where, during routine scheduled maintenance, 1 bolt was found to be incompetent, while the other was intact. Interestingly, when 1 bolt fails, there is some play in the

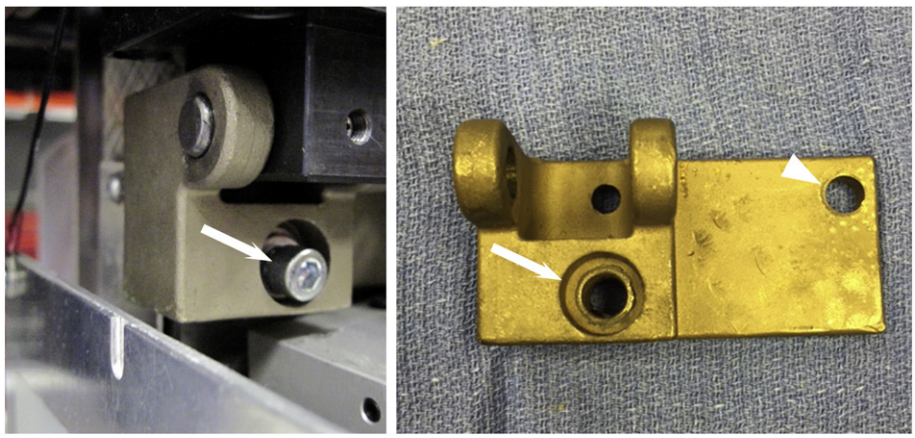

Fig. 2 The tilt cylinder mechanism bracket of the OR table, as seen after removal of the OR table pedestal covering. The photo on the left shows the bracket bolted in place. The picture on the right shows the bracket removed from the OR table pedestal. The arrow points to the location of the larger bolt. The arrowhead points to the location of the second bolt, which is visible on the right, but out of the picture on the left.