The tracheocarotid fistula is a severe complication associated with tracheostomy. The incidence is about 0.7% and is almost always fatal. The tracheostomy tube cuff or tube tip causes mucosal damage, resulting in erosion through the tracheal wall into the vascular structures that lie in the pretracheal space. The mucosal damage is usually caused from high cuff pressure leading to pressure necrosis or improperly positioned cannula tip. Other risk factors include chronic vascular inflammation, bronchial stents, low-placed tracheostomy tube, radiotherapy, and prolonged intubation. Bleeding is one of the earliest signs of tracheocarotid fistula and usually occurs 48 hours or more post-procedure. Other signs that suggest a tracheocarotid fistula are low-lying tracheostomy tube; pulsation of the tracheostomy tube; and the presence of infection, hypotension, and malnutrition. Identifying tracheocarotid fistula is challenging, however fiberoptic bronchoscopy and angiography have shown to be useful. Immediate treatment determines the patient’s chances of survival.

Case Report

The patient is a 24 year-old female that was involved in a motor vehicle collision. She arrived to the trauma unit with a GCS of 12 in a combative state. ATLS was performed in the trauma unit. She was scanned in the CAT scanner and then transferred to the ICU. Her injuries included a subdural hematoma, L3 through L5 fractures, sacral fracture, disk bulges at L3 through S1, left superior and inferior rami fractures, right acetabular fracture, inferior pubic rami fractures with presacral extravasation and a right loculated hydropneumothorax. A triple-lumen subclavian catheter was placed. The patient had a history of heart valve removal secondary to endocarditis. An echocardiogram was performed which showed no valvular lesion or vegetation. She also had a history of polysubstance abuse including heroin and methamphetamine. She underwent closed reduction for tibial fracture. She was initially intubated endotracheally, but later developed subglottic stenosis and required tracheostomy tube placement. Her stenosis was treated with laryngoscopy with laser resection. She developed bleeding around her tracheostomy site approximately 10 days post-tracheostomy.

Discussion

Tracheocarotid fistula is a life threatening complication of tracheostomy that presents with massive tracheal bleeding. The outcome of this complication is fatal without immediate surgical intervention. Hemorrhage from a tracheostomy site may be early or late, occurring a few hours post-operatively or days or months after surgery. The arteries that are usually involved in tracheocarotid fistula are innominate, inferior thyroid, superior thyroid, aorta or rarely, as in our case, the common carotid. Once a tracheocarotid fistula is detected, immediate fluid resuscitation and surgical intervention is essential.