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Case Report / *Olgu Sunumu*

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A suicide attempt that resulted in the separation of supraglottis from the glottis

Supraglottisin glottisten ayrılmasıyla sonuçlanan bir intihar girişimi

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ABSTRACT

Keeping the airway open is mandatory in zone II neck injuries. Herein, we report an 88-year-old male patient who was brought to the emergency service of our hospital by ambulance after he attempted suicide by cutting his throat with a pocket knife at home. The airway was secured by the ambulance team by passing an endotracheal tube through the penetrated supraglottic area and the vocal cords and then inflating the cuff, and a neck collar was attached. After the patient was taken to the operating room, tracheotomy was performed by us. With a continuous purse-string suture, the epiglottis was fixed to where it separated from the laryngeal area. The patient was transferred to the intensive care unit after the operation. Since the patient might have needed urgent operation in the first two days, the patient, who was parenterally fed, was started to be fed with a nasogastric tube after the operation. Through this case report, we emphasize the necessity of a multidisciplinary approach in emergency cases of neck injuries.

Keywords: Injuries, larynx, neck, supraglottitis, vocal fold.

ÖZ

Bölge II boyun yaralanmalarında havayolunun açık tutulması zorunludur. Bu yazıda, evinde çakı ile boğazını keserek intihara teşebbüs ettikten sonra ambulansla hastanemizin acil servisine getirilen 88 yaşında bir erkek hasta sunuldu. Penetre olan supraglottik alandan ve ses tellerinden ambulans ekibi tarafından bir endotrakeal tüp geçirilerek ve ardından kaf şişirilerek hava yolu güvence altına alındı ve boyunluk takıldı. Hasta ameliyathaneye alındıktan sonra tarafımızca trakeotomi yapıldı. Devamlı torba dikiş sütür ile epiglot, larengeal alana ayrıldığı yerden tespit edildi. Hasta ameliyattan sonra yoğun bakıma alındı. İlk iki gün hastanın acil ameliyata ihtiyacı olabileceğinden parenteral beslenen hasta ameliyattan sonra nazogastrik sonda ile beslenmeye başlandı. Bu olgu sunumu ile boyun yaralanmalarının acil vakalarında multidisipliner bir yaklaşımın gerekliliğini vurguluyoruz.

Anahtar sözcükler: Yaralanmalar, larenks, boyun, supraglottit, vokal kord.

5-10% of traumatic injuries are penetrating neck traumas.[1] In the neck, which is anatomically divided into three zones, the most commonly penetrated zone is zone II, and injuries in this area should be evaluated with computed tomography (CT).[2] Major vascular injury, pseudoaneurysm, arteriovenous fistula, esophageal-tracheal penetration are some complications. Therefore, experience in neck exploration is vital, considering the clinical situation may be deceiving.[3] Keeping the airway open is mandatory until surgery is performed on the patient. There are different methods to meet airway clearance.

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CASE REPORT

An 88-year-old male patient was brought to the emergency service of our hospital by ambulance after he attempted suicide by cutting his throat with a pocket knife in the bathroom of his home. At the supraglottic level, there was a 12 cm horizontal incision 1 cm above the arytenoids, just superior to the thyroid cartilage, and the right side of the incision was irregular. Vocal cords and the esophageal entrance were visible. The airway was secured by the emergency paramedic team by inserting an endotracheal tube through the penetrated supraglottic area and the vocal cords and then inflating the cuff, and a neck collar was attached (Figure 1).

The patient's hemoglobin level was 11.5 g/L on admission to the emergency department. No blood transfusion was needed. The patient's blood pressure was 130/80 mmHg and pulse rate was 102 beats per min. The patient had spontaneous breathing, and there was no need for ventilation. The patient had history of known congestive heart failure, atrial fibrillation and psychosis. Before any surgical intervention, cardiology consultation was requested for the patient who was implanted with implantable cardioverter-defibrillator (ICD) since monopolar cautery could possibly be used to control bleeding during surgery. Neck and thorax contrast CT was performed on the patient (Figure 2). In the cardiology consultation, it was recommended that the ICD magnet should be taken into operation by avoiding monopolar cautery and if ventricular tachycardia or ventricular fibrillation was observed, the magnet should

Figure 1. Initial image in the emergency department. Emergency paramedic team had inserted an intubation tube from the penetration site. The thyroid cartilage and right clavicle can be observed.

Figure 2. In the preoperative computed tomography image, the penetration site and the intubation tube that was inserted from supraglottic penetration site can be observed.

Figure 3. The mentum and the tracheostomy cannula can be observed in the image taken during the operation. The trachea was sutured after tracheostomy was performed.

be removed to provide ICD defibrillation. The patient had spontaneous breathing, and there was no respiratory distress. However, cooperation and orientation were poor. No active bleeding was detected in the patient.

The patient underwent tetanus and antibiotic prophylaxis in the emergency room. Tetanus prophylaxis was done by vaccination. The patient was taken to the operating room. A tracheotomy and the restoration of the larynx was planned for the operation. General anesthesia was provided with an endotracheal tube in the incision area that was dividing the supraglottis from the glottis. A horizontal 5 cm incision was made 4 cm above the suprasternal notch (Figure 3). Tracheotomy was performed by pulling the thyroid upward and removing the second cartilage ring from the trachea. The incision was made, and the superficial bleeding was stopped. The epiglottis was suspended with fixation suture. It was observed that the strep muscles were cut. The strep muscle on the left was excised as it appeared to be necrotic. A nasogastric catheter was inserted. With a continuous purse-string suture, the epiglottis was fixed to where it separated from the laryngeal area. Bleeding control was done. The operation was terminated after the drain placement and skin closure. The hemoglobin level was 10.0 g/L at end of the operation. The patient was transferred to the intensive care unit after the operation. Since the patient might have needed urgent operation in the first two days, the patient, who was parenterally fed, was started to be fed with a nasogastric tube afterward. The postoperative incision site healed well. Seroma, hematoma, or any other pathological symptom did not occur. The patient developed cardiac arrest on the fourth postoperative day. Despite cardiopulmonary resuscitation and the ICD, we could not get a pulse. The patient was considered exitus as a result of myocardial infarction on the fourth day of postoperative follow-up.

DISCUSSION

If hemodynamic stabilization of the patient can be achieved, CT evaluation before the operation can direct the surgery. Large vessels, nerve traces, the esophagus anterior wall, and larynx-trachea boundaries should be carefully examined, and preoperative preparation should be made. If possible, the blood bank should be informed due to the proximity to the large vessels. In our case, we performed neck and thorax CT, made a reserve of erythrocyte suspension, and prepared the patient for operation.

In cases with esophageal injury, it provides convenience in the feeding of the patient after the nasogastric catheter is placed during the operation. Since the nasogastric probe to be inserted after the operation may cause opening, bleeding, and fistula in the sutures in that area, it was considered more appropriate in our case.

Attention should be paid to comorbid situations, and assistance should be sought from relevant branches when necessary. In our case, the patient had cardiac problems, so cardiology consultation was necessary. The increased creatine kinase and troponin levels after the operation can be attributed to the operation and can hide cardiac events. As in our case, trusting the laboratory alone may be misleading in patients with advanced comorbid conditions. Furthermore, if our patient had woken up, psychiatric consultation would have been necessary for the patient who could have attempted suicide.

While repairing the injuries, care should be taken to preserve anatomical and functional integrity, and if possible, radical debridement should be avoided. Enlargement of the debridement can directly damage vital structures and cause difficulty in maintaining functionality during reconstruction. This situation returns to the patient as a decrease in the quality of life. In our case, we completed the operation by avoiding resection other than the necrotic muscle.

In the postoperative period of the patient, a tracheostomy should be performed, considering the trauma that orotracheal intubation may cause in the operation area, to ensure the safety of the airway. In our case, we started by opening a tracheostomy suitable for the operation.

In conclusion, cases of penetrating neck traumas can be mortal, particularly in zone II. Airway obstruction and bleeding are commonly encountered problems in these patients and must be hastily managed. Even in the approach to complicated neck cuts, the basic principles of first aid should be followed. Airway patency should be provided first in every trauma, which the emergency paramedic team provided in our case. Although there are guidelines for subsequent approaches, there may be different approaches for each patient. After the airway was secured in our patient, we decided to perform imaging before the operation. However, each case can be evaluated on its own.

Patient Consent for Publication: A written informed consent was obtained from the patient.

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

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