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A RARE COMPLICATION AFTER THYROIDECTOMY: ESOPHAGEAL PERFORATION

TİROİDEKTOMİ SONRASI NADİR BİR KOMPLİKASYON: ÖZOFAGUS PERFORASYONU

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ABSTRACT

A 67 year-old woman with recurrent multinodular goiter was admitted for bilateral near total thyroidectomy. On the postoperative period, a turbid fluid came from suction drain which was due to an esophageal perforation. Esophagoscopy and contrast computerized tomography revealed a perforation in the upper third part of the esophagus. Following non-operative treatment by restricting oral intake, parenteral administration of antibiotics, and parenteral nutrition for 10 days, the patient has recovered and was discharged without any sequela. We discussed the cause of perforation according to the possible reasons frequently seen in the literature. Among iatrogenic reasons, unsuccessful intubation trials were more common than neck surgery.

Key words: *Esophagus-perforation-surgery-intubation-thyroidectomy*

ÖZET

Nüks multinodüler guatr tanısı alan 67 yaşındaki kadın hasta bilateral near total tiroidektomi planlanarak yatırıldı. Postoperatif dönemde drenden özofagus perforasyonuna bağlı bulanık bir sıvı geldi. Özofagoskopi ve kontrastlı bilgisayarlı tomografi ile özofagusun üst üçte birlik kısmında bir perforasyon olduğu anlaşıldı. Oral alımı kesilip, 10 günlük parenteral beslenme ve antibiyotik tedavisi gördükten sonra iyileşerek taburcu edildi. Perforasyon nedenini literatürde rastlanma sıklığına göre tartıştık. İatrojenik nedenler arasında başarısız entubasyonlar, boyun cerrahisinden daha sık görülmekteydi.

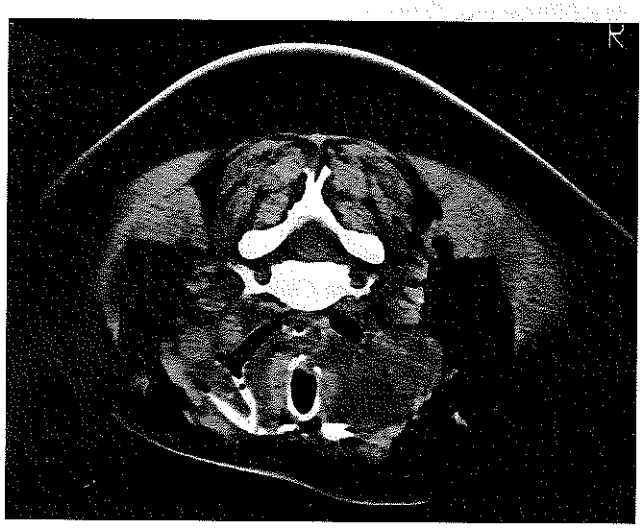
Anahtar kelimeler: *Özofagus-perforasyon-cerrahi-entubasyon-tiroidektomi*

Esophageal perforation is a rare surgical complication and this has been reported to occur during intubation(1-5). Difficult intubations after several attempts, female gender, and over 60 years of age are risk factors for esophageal perforation(1). Esophageal dilation, esophageal, neck, and thoracic surgery are the other most common procedures concerning this complication(1,4,6). On the other hand, laryngeal mask intubation, and nasogastric tube placement are rare etiologies for esophageal perforation.(7,8).

CASE REPORT:

A 67-year old woman was admitted to our department with recurrent multinodular goiter. The thyroid function tests were within normal ranges. The initial operation was performed 15 years ago in another institution. After 12 years of an asymptomatic period, she began to suffer from dysphagia and dispnea. During general anesthesia endotracheal intubation had been attempted for several times, and then the operation was performed under laryngeal mask. On the exploration, it was found that she had had a bilateral subtotal thyroidectomy in the first operation. As the superior and inferior poles were secured bilaterally in the first operation, no dissection was necessary at the poles. Thyroid capsule was incised and all thyroid tissue was removed with particular attention to avoid any injury to recurrent laryngeal nerves. A closed suction drain was placed, lying from the right side to the left. At the first postoperative day, 100 ml. of fluid with an unusual turbid color discharged from the drain. Methylene blue appeared in the drain as soon as it was given orally to the patient. During nasal flexible laryngoscopy, a mucosal contusion was observed at the end of the hyoepiglottic ligament, while bilateral vocal cord movements were normal. Esophagoscopy revealed a linear mucosal laceration 8-10 mm. in length, just above the pharyngoesophageal junction, on the anterior side of the esophagus. Computerized tomography (CT) of the neck was performed to demonstrate the esophageal fistula (Figure I). The images were attributed to a fistula at the proximal part

Figure I: CT scan demonstrated an intramural dot of contrast agent together with an air bubble just lateral to the contrast filled esophageal lumen.



of the cervical esophagus. Oral intake was stopped, parenteral nutrition and wide spectrum antibiotic therapy was started. The drainage fluid decreased gradually and continued until the postoperative 8th day. Oral intake was started on the postoperative 10th day. The closed suction drain was removed on the 11th day and the patient was discharged two days later without any problem.

DISCUSSION:

Esophageal perforation is an entity with high rates of morbidity and mortality. Mortality differs between 5.5 and 29% according to the site and type of esophageal injury(1,2,4,8-11). In the study of Domino et al., airway injury was reported in 266 of 4460 patients (6%). The most frequent sites of injury were larynx (33%), pharynx (19%), and esophagus (18%). Injuries to the trachea and esophagus were frequently associated with difficult intubations (66%)(1).

Besides restriction of oral intake, wide spectrum antibiotics administration and total parenteral nutrition, surgical management may include suturing alone, drainage, rotating muscular flaps and even resection of the esophagus(1,4,8-10,12). The first series report of successful non-operative management of esophageal perforation by Mengeli and Klassen, had a 5.5% mortality rate. They also emphasized the importance of early diagnosis in esophageal perforation(2). Currently effective antibiotic treatment, advanced imaging technologies, well-developed sterilization methods, and improved solutions of total parenteral nutrition are the important factors increasing the chances of esophageal perforation being managed successfully by non-operative treatment. Although some authors recommend the placement of thorax tube and nasogastric catheter, others, like Cameron and Kiefler, opposed nasogastric intubations for its possible side effects like increased gastro esophageal reflux and delayed wound healing(2,8). Urgent surgical interventions are recommended in abdominal or multiple esophageal perforations. The best results with non-operative management can be accomplished in cervical esophageal injuries.

A delay in surgical treatment of 4 to 6 hours increases the morbidity. Absolute surgical indications consist of pneumothorax, pneumomediastinum, sepsis, respiratory insufficiency and shock. The extent of surgical intervention; (suturing and drainage, esophagectomy, gastrostomy, or jejunostomy) depends on the site and width of the perforation and the interval between perforation and diagnosis. An interval of 24 hours leads to progressive necrosis and increased morbidity and mortality(1,2,8,10).

There are reports of esophageal perforation due to nasogastric tube, laryngeal mask and endotracheal intubations in the literature(7,8). Esophageal perforation is usually reported as a complication of intubation(1,3,5). We can not be sure whether a proximal esophageal perforation is caused by intubation or surgery. This patient has all the risk factors mentioned above. She had multiple esophageal intubations, after which guide wired intubation was attempted unsuccessfully, and finally she was operated under laryngeal mask. In this case there was no need for pole dissection during thyroidectomy, so, dissection was entirely intracapsular to avoid recurrent nerve injury. Esophagoscopic findings demonstrating a linear anterior side perforation 19 cm distal from the teeth led us to conclude that the unsuccessful intubation trials can be the cause.

Esophageal injuries related to intubation are localized in the upper region with usually one perforation hole and a small diameter. Ones related to surgery are in any part of esophagus and may have multiple perforation holes of greater size in diameter. All these are important factors effecting the morbidity and mortality of the patient and closely related with prognosis. Though rare, mortality rates up to 30% make this problem an important clinic dilemma(1,2,4,8-10). Therefore, early diagnosis and treatment has vital importance. The factors affecting the treatment plan and prognosis directly, are the site and the diameter of the perforation, interval between the injury and treatment, oral nutrient intake, hemodynamic status of the patient, and use of a drain following cervical surgical procedures(1,2,8,10,13).

Non-operative treatment may be a better choice in cases with upper esophageal injury having only one perforation hole, a perforation diameter less than 1 cm, and an effective drain. The perforations in the middle and lower parts of esophagus necessiates a careful decision for non-operative treatment.

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