

Colonic Perforation Developing Due to Small Catheter Thoracostomy: Case Report

Kateter Torakostomiye Sekonder Gelişen Kolon Perforasyonu

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ABSTRACT Catheter thoracostomy is an intervention which can be used safely in selected cases and can be a good alternative to tube thoracostomy as it is easily applicable, effective and leads to less complications. In this case report, a 55-year-old patient, diagnosed with metastatic cervical cancer, who developed colonic perforation following small catheter thoracostomy was discussed. The perforation was primarily repaired, the abdomen was washed with saline solution, and ileostomy was performed. The patient was interned to the intensive care unit during the postoperative period with orotracheal intubation, and an infectious diseases consultation was performed considering the abdominal origin of septic shock. But she died on day 8 of follow up due to intra-abdominal sepsis.

Key Words: Catheterization; thoracostomy; complications

ÖZET Kateter torakostomi seçili vakalarda güvenle uygulanabilen ve tüp torakostomiye alternatif olabilecek bir yöntemdir. Kolay takılabilirliği, efektif olması ve daha az komplikasyona yol açması sık tercih edilmesinin nedenleridir. Bu olgu raporunda, 55 yaşında kateter torakostomiye sekonder kolon perforasyonu gelişen metastatik servikal kanser hastasını sunmayı planladık. Hastada perforasyon primer onarılmış, batin salin solüsyonuyla yıkanmış ve ileostomi açılmıştır. Postoperatif dönemde hasta entübe bir şekilde yoğun bakıma yatırılmış ve abdominal kaynaklı septik şok tedavisi düzenlenmiştir. Fakat hasta takibinin 8. gününde intra-abdominal sepsis tanısıyla kaybedilmiştir.

Anahtar Kelimeler: Kateterizasyon; torakostomi; komplikasyonlar

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Catheter thoracostomy is a frequently used method as it may be easily applied at bed-side, causes minimal pain, and enables easy, early mobilization. The complication rate is quite low compared to common complications of thorax drains. In this case report, we presented a patient with small catheter thoracostomy related colonic perforation after obtaining her informed consent.

CASE REPORT

A 55-year-old female patient who had been followed up for six years following cervical cancer was admitted to the Emergency Department of another university hospital. She had indications for follow up in the intensive

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care unit as pleural effusion was detected in the right lung and respiratory distress gradually increased. She was transferred to the intensive care unit of another medical center. A mass lesion beginning from her pelvic region and extending to the subhepatic region was detected on abdominal tomography performed during her follow up in the intensive care unit. A 10 F, 12 cm thoracostomy catheter was inserted into the sixth intercostal space for drainage of pleural effusion as her respiratory distress increased; however, a significant amount of material could not be drained. The patient, whose general condition deteriorated on the fourth day of thoracostomy catheterization and respiratory distress increased, was admitted to the intensive care unit of our hospital. Upon her admission, her condition was moderate. She was conscious, cooperative, anxious and agitated. She had spontaneous respiration of room air and received oxygen through a nasal mask. Upon physical examination, she had bilateral crackles. Respiratory sounds could not be heard in the right medial and inferior zones, and respiratory sounds decreased on the left. Her abdomen was extremely distended, defensive and bowel peristaltic sounds were absent. The physical examination was otherwise normal. There was a thoracostomy catheter inserted on the right at another medical center. Her blood pressure was 100/50 mmHg, heart rate was 110 bpm, and oxygen saturation was 95%. Abdominal ultrasonography, which was performed at another center 4 days ago, revealed a mass lesion measuring 13 cm in diameter, extending from pelvis to liver. The lesion had a lobulated contour, fluid collection on the left and peritoneal edema. It was considered to be peritonitis carcinomatosa. Hemogram and laboratory results were normal. Blood gas analysis revealed pH:7.39, PCO₂: 40 mmHg, PO₂: 89 mmHg, BE:-2.1, SPO₂: 97%. Chest graphy revealed infiltration in the right inferior zone, the diaphragm was elevated, and the thoracostomy catheter was observed on the right below the diaphragm, in the abdomen. There was excess free air in the abdomen. A thoracic surgery consultation was performed. Upon physical examination, there was a small thoracostomy catheter inserted from lateral at the level of the 6th intercostal

space. The drain bag included air. A fluid, including brown micro particles and which had fecaloid odor, was aspirated from the catheter. These findings potentially suggested an intra-abdominal organ perforation. An urgent general surgery consultation was done, and operation was performed after informed consent had been obtained from the relatives. During the operation, there was free air and fluid containing fecaloid in the abdomen. Exploration revealed a cervical tumor which formed omental cake; the tumor was hemorrhagic and necrotic. There was a small thoracostomy catheter in the subhepatic region inserted from the abdominal wall. A perforation hole, approximately 1.5 cm, was detected in the colon in the hepatic flexure region. The perforation was primarily repaired, the abdomen was washed with saline solution, and a double barrel ileostomy was performed. The patient was interned to the intensive care unit during the postoperative period with orotracheal intubation, and an infectious diseases consultation was performed considering the abdominal origin of septic shock. Appropriate antibiotic therapy was started, inotropic therapy continued during her follow up in the intensive care unit, and abdominal washing was done twice by general surgeons; however, the patient did not respond to therapy and died on the 8th day of follow up.

DISCUSSION

Small catheter thoracostomy is a method which can be easily applied at bed-side in emergency rooms, outpatient clinics, and intensive care units, and which causes minimal pain and stress. It may be safely applied for old hemothorax cases which are not drained, in patients who have respiratory distress and severe pleural effusion, complicated effusions, pleural effusion that could not be drained with medical treatment or thoracentesis, reoccurring pleural effusion, in patients in whom thorax drain insertion is harmful due to localization and in patients who require insertion of small catheter because of age and general condition. Complication rates of large thoracic catheters vary between 5-35%. The most common complications are the

tube's inadequate drainage of effusion or fluid, pain at the insertion site, empyema, injury or penetration of adjacent organs or lungs, wrong or inappropriate insertion of the tube, and recurrent pneumothorax or effusion.¹ Complications of small catheters like alteration, coiling at the insertion site, dislocation or gliding of the catheter are seen more than with large catheters due to their being smaller and more flexible. When complications of large thoracic catheters and small thoracic catheters are compared, likelihood of organ injury was found to be 1.4% and 0.2%, malposition 6.5% and 0.6%, empyema 1.4% and 0.2%, and tube occlusion 5.2% and 8.2%, respectively.^{2,3}

Colonic perforation following small catheter thoracostomy is a rare and life-threatening complication. Our patient was diagnosed with advanced stage cervical cancer with peritoneal metastasis and pleural effusion. There was a mass image detected on ultrasonography. Although the catheter had been inserted from the correct site, it led to colonic perforation together with tumor tis-

sue most probably due to diaphragm elevation. Use of portable ultrasonography machines has greatly enhanced the evaluation and operative management of plural diseases.⁴ The point is that ultrasound-guidance should not only be preferred for complex pathologies.⁵ It should be gold standard for standard procedures. So this may reduce the risk of complications and costs. In this case, ultrasound-guided thoracentesis could be performed considering the clinical condition of the patient. Previous studies indicated that ultrasound-guided thoracentesis was superior in terms of detection and drainage of pleural fluid in comparison with plain graphs-guided thoracentesis.³ Pneumothorax development, the most common complication, significantly decreases in ultrasound-guided thoracentesis compared to thoracentesis done with conventional methods.⁶ In conclusion, using ultrasonography is appropriate both for correct detection and drainage of effusion and insertion at the correct site in case of the presence of any pathologies that could lead to displacement of intra-abdominal organs, as in our case.

REFERENCES

1. Mathur PN. Therapeutic local procedures: chest tubes and therapeutic thoracentesis. *Eur Respir Mon* 2002;22:297-310.
2. Havelock T, Teoh R, Laws D, Gleeson F; BTS Pleural Guideline Group. Pleural procedures and thoracic ultrasound: British Thoracic Society Pleural Disease Guideline 2010. *Thorax* 2010;65(Suppl 2):ii61-76.
3. Harris A, O'Driscoll BR, Turkington PM. Survey of major complications of intercostal chest drain insertion in the UK. *Postgrad Med J* 2010;86(1012):68-72.
4. Koenig SJ, Narasimhan M, Mayo PH. Thoracic ultrasonography for the pulmonary specialist. *Chest* 2011;140(5):1332-41.
5. Daniels CE, Ryu JH. Improving the safety of thoracentesis. *Curr Opin Pulm Med* 2011;17(4):232-6.
6. Lipscomb DJ, Flower CD, Hadfields JW. Ultrasound of the pleura: an assessment of its clinical value. *Clin Radiol* 1981;32(3):289-90.