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Global Journal of Medical and Clinical Case Reports
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GLOBAL JOURNAL OF Medical and Clinical Case Reports OPEN ACCESS JOURNAL
ISSN: 2455-5282
DOI: https://dx.doi.org/10.17352/gjmccr

Case Report

Penetrating pharynx wound reaching mediastinum. Which is the proper surgical approach?

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Received: 06 April, 2021
Accepted: 01 May, 2021
Published: 03 May, 2021

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Keywords: Penetrating wounds; Hypopharynx; Cervical; Esophagus; Transoral surgery; Cervical surgery

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Abstract

We report the case of a knife penetrating wound from the hypopharynx-cervical esophagus area to the posterior mediastinum in a 91-year-old patient. The surgical approach for this patient required a transoral examination with direct laryngoscopy and a right cervicotomy. Although it was not necessary to perform a thoracotomy, the position of the knife, stuck towards the posterior mediastinum, made the presence of an interdisciplinary team in the operating room necessary.

Introduction

Penetrating wounds in the esophagus have a very low incidence, especially those lesions in which the mechanism is not internal, as in the case of trauma after the ingestion of fishbones or bones or in the case of ingestion of sharp objects due to psychopathology [1]. These traumata are associated with a high morbidity and mortality rate, needing urgent surgical intervention.

The posterior mediastinum contains most of the vital organs, such as the thoracic aorta, vena cava, the thoracic region of the trachea and the major bronchial tube area, the azygos venous system, the thoracic duct and the sympathetic trunk [2]. Traumata which compromise this area will demand a cross-disciplinary approach, including experienced surgeons in such region.

We present the case of a 91 year old patient presenting attempted suicide by bladed weapon, and a penetrating wound from the hypopharynx-cervical esophagus area to the posterior mediastinum, which required a surgical approach combining transoral and cervical surgery.

Manuscript case

A 91-year-old man with a medical record of Human Immunodeficiency Virus (HIV) infection undergoing retroviral treatment with Triumeq®, was referred to the emergency department after attempted suicide swallowing a knife. When the patient is received, he is conscious, hemodynamically stable, with traces of blood in the oropharynx but without active bleeding.

During the physical examination, it is appreciated that the cervical region does not present signs of emphysema nor an increase in volume, swelling or other alterations in the skin.

In the pharyngoscopy, it is appreciated that there are traces of blood in the oropharynx as well as the handle of the knife resting on the base of the tongue without sight of the blade.

We proceeded to request a chest X-ray to assess damage in the affected regions, where we could see the knife following a trajectory from left to right, down to the region of the mediastinum (Figure 1).

Since the knife was metallic, we couldn't perform Computed Tomography (CT) because of the distortion this material produces when exposed to radiation, so we decided to inspect and remove the knife through direct visual inspection in the operating room under general anesthesia [3,4].

During the surgery, we first carried out an assessment of the region of the oropharynx and hypopharynx, through a transoral examination followed by a direct laryngoscopy using

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a Kleinsasser tube, which gave us a view of the knife piercing the postcricoid area of the hypopharynx [5]. Afterwards, we carried out a right cervicotomy, dissecting until we reached the retropharyngeal area. No vascular damage was appreaciated in the contiguous cervical noble structures; in that moment the blade of the knife was found to be stuck toward the posterior mediastinum [6] (Figure 2).

Due to its position, doctors from the emergency service of thoracic surgery are called, who came to assess how safe it was to remove the knife. As it is located in the posterior mediastinum, in the right upper section, we were informed that the probability of damaging the noble structures was low and we proceeded to extract the blade through the oropharynx under direct vision of the cervical structures via cervicotomy. A perforation in the hypopharynx-cervical esophagus area is appreciated and we proceeded to suture the loss of continuity in the tissue [7]. We do not appreciate any wounds in other major blood vessel or cervical structures in the trajectory of the knife.

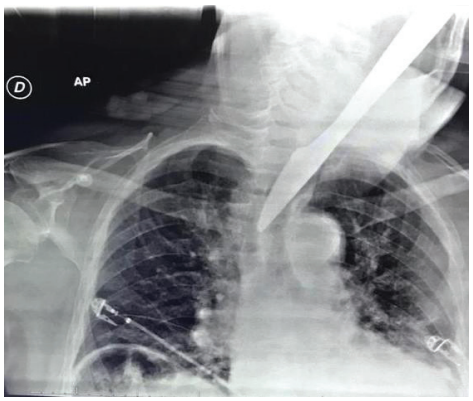

Figure 1: X-ray where we can see the knife following a trajectory from left to right, down to the region of the mediastinum.

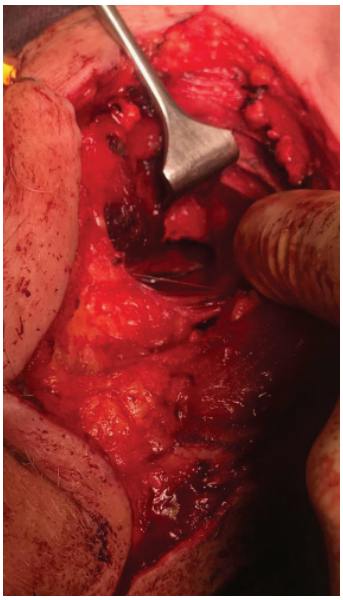

Figure 2: Cervical dissection showing the blade of the knife found to be stuck toward the posterior mediastinum.

The main complications in the patient that occurred during the early post-operative period were mediastinitis and secondary pleural effusion, which was treated using antibiotics and systemic antifungal agents [8-10]. After an assessment by the area of internal medicine, it was also determined that there was a depressive syndrome with suicidal ideation as a side effect of extended treatment with antiretrovirals (Triumeq®) [11,12].

Discussion

In order to remove foreign objects, it is necessary to locate the whole trajectory of the object and carry out a strict monitoring of the structures that may be affected [7]. In this particular case, we carried out a right cervicotomy and a dissection of the postcricoid and retropharyngeal space until we identified and assessed all the structures adjacent to the trajectory.

Most of these wounds are hidden while the blade remains inside the body, but become clear when it is removed, either because they have been created during the injury or because they are created by the handling during the surgery [13,14]. Ultimately, we always have to carry out a thorough inspection of the affected regions to identify injuries that may go unnoticed in plain sight but may involve any sort of postoperative complications.

In cases in which there are several affected areas, such in the case we are presenting, it will be necessary to use an interdisciplinary team. The most relevant structure in the right region of the posterior mediastinum is the azygos vein. In our case, the injury is located above its join with the superior vena cava, and therefore it is not necessary to carry out an open thoracotomy. Nevertheless, this procedure still demands the presence of surgeons with experience in this area in case any incident might occur.

Conclusion

In trauma involving several regions, it is necessary to have a broad knowledge of the anatomy and surgical experience of the area involved. In wounds that affect the hypopharynx, a damage assessment of the ENT area should be performed by direct laryngoscopy [5]. The involvement of the cervical area makes the performance of a cervicotomy necessary to rule out the presence of damage to the vital structures included in this region. This procedure is not only intended to assess the damage caused by the trauma, but also to secure the extraction of the weapon by direct visualization of the process [1]. The presence of mediastinal damage may require open thoracotomy in most cases, so the presence of an interdisciplinary team with more experience in the surgical approach of this area is recommended.

Aknowledgments

The authors have no funding, financial relationships, or conflicts of interest to disclose.

The authors wish to thank Juan Plaza for assistance with preparation of the manuscript translation.

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References

1. Soose RJ, Carrau RL (2012) Penetrating Trauma to the Hypopharynx and Cervical Esophagus. In Operative Otolaryngology: Head and Neck Surgery. Elsevier 451–457. Link: https://bit.ly/3e9Lfbh
2. Putnam JB (2012) Lung, Chest Wall, Pleura, and Mediastinum. In Sabiston Textbook of Surgery. Elsevier 1564–1610. Link: https://bit.ly/3vHdpjT
3. Conradie WJ, Gebremariam FA (2015) Can computed tomography esophagography reliably diagnose traumatic penetrating upper digestive tract injuries? Clin Imag 39: 1039–1045. https://bit.ly/336oajv
4. Spira R, Bolanos R (1988) Perforation of the hypopharynx: Demonstration by computerized tomography. Southern Medical Journal 81: 658–659. Link: https://bit.ly/2PHxKWL
5. Fetterman BL, Shindo ML, Stanley RB, Armstrong WB, Rice DH (1995) Management of traumatic hypopharyngeal injuries. Laryngoscope 105: 8-13. Link: https://bit.ly/336MVMr
6. Stanley RB, Armstrong WB, Fetterman BL, Shindo ML (1997) Management of external penetrating injuries into the hypopharyngeal- cervical esophageal funnel. In Journal of Trauma - Injury, Infection and Critical Care. Lippincott Williams and Wilkins 42: 675–679. Link: https://bit.ly/3tadScx
7. Skinner DB, Little AG, DeMesster TR (1980) Management of esophageal perforation. Am J Surg 139: 760-764. Link: https://bit.ly/2RdVget
8. Skinner DB, Little AG, DeMesster TR (1980) Management of esophageal perforation. Am J Surg 139: 760-764. Link: https://bit.ly/2RdVget
9. Athanassiadi KA (2009) Infections of the Mediastinum. Thoracic Surgery Clinics. Link: https://bit.ly/3vFva2K
10. Elia S, End A, Canalis E, Lode H, Granai AV, et al. (2013) Mediastinitis: Causes, management and outcomes. European Respiratory Monograph 61: 122–140. Link: https://bit.ly/3nLrhqn
11. Grometti N, Nwokolo N, Kershaw E, Whitelock G (2016) Adverse events of dolutegravir may be higher in real world settings. HIV Medicine 17: 22–23. Link: https://bit.ly/33bMFvs
12. (2017) Neuropsychiatric adverse events associated with integrase strand transfer inhibitors. Topics in Antiviral Medicine 25: 149s-150s.
13. Pinto FR, Durazzo MD, Cordeiro AC, Ferraz AR (2000) Cervical perforating foreign body: case report. Revista Da Associacao Medica Brasileira 46: 77–80.
14. Wall MJ, Mattox KL, DeBakey ME (2006) Injuries to the azygous venous system. Journal of Trauma - Injury, Infection and Critical Care 60: 357–362. Link: https://bit.ly/3ufFs9A

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