*Asian Journal of Case Reports in Surgery*

*Volume 6, Issue 2, Page 586-590, 2023; Article no.AJCRS.108339*

# Double Rarity Right Bochdalek's Hernia with Intrathoracic Kidney: A Case Report

**M. Anajjar [a,b*], A. Fadili [a], M. Gridda [b], W. Atmani [a], Y. Elbrahmi [a], N. Njoumi [a], M. Yakka [a], M. Elfahssi [a], A. Elhajjouji [a] and A. Aitali [a,b]**

*[a] Department of Visceral Surgery II, Mohammed V Military Teaching Hospital, Rabat, Morocco.*
*[b] Faculty of Medicine and Pharmacy, Mohammed V University of Rabat, Rabat, Morocco.*

***Authors' contributions***

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

***Article Information***

**Open Peer Review History:**
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/108339

***Case Study***

***Received: 13/09/2023***
***Accepted: 19/11/2023***
***Published: 24/11/2023***

## ABSTRACT

**Introduction:** Bochdalek diaphragmatic hernia, a rare condition typically diagnosed before adulthood, presents diagnostic and therapeutic challenges. An even rarer occurrence involves the association of an intrathoracic right kidney with Bochdalek hernia. This article explores the complexities of treating such cases, considering both operative and non-operative options.
**Aims:** This study aims to present an exceptional case of a 75-year-old woman with a developing right-sided Bochdalek hernia and an acquired intrathoracic kidney. The chosen approach was conservative, and through observation, we highlight the diagnostic and therapeutic intricacies of this entity.
**Presentation of Case:** The patient, aged 75, diabetic, and hypertensive, presented to the emergency department with influenza-like illness. Clinical examination revealed stability but with a

**Corresponding author: E-mail: Mohamed.anajjar@um5s.net.ma;*

right basithoracic mass syndrome. Imaging, including thoracic radiograph and CT scan, confirmed a Bochdalek hernia and an intrathoracic right kidney. Given the fortuitous discovery, correct renal function, age, and comorbidity, a watch-and-see strategy was employed. The patient remained complaint-free during a 6-month follow-up.

**Discussion:** Bochdalek hernia, characterized by a posterolateral diaphragmatic defect, is relatively rare but often asymptomatic. Right-sided defects, affecting 10-20% of cases, pose diagnostic challenges due to their infrequency. Surgical intervention is recommended, with options ranging from minimally invasive to open surgery. The management of an intrathoracic ectopic kidney remains debated, with some advocating for mobilization into the abdomen, while others opt for reduction without direct manipulation.

**Conclusion:** Bochdalek hernias, particularly those associated with intrathoracic right renal ectopia, present diagnostic and management challenges. A high index of suspicion is crucial for timely diagnosis and treatment, leading to low morbidity and mortality rates. Clinicians should consider this condition in the differential diagnosis of lower intrathoracic masses.

*Keywords: Bochdalek hernia; diaphragmatic hernia; intrathoracic kidney; rare congenital condition.*

## 1. INTRODUCTION

Bochdalek diaphragmatic hernia is a rare condition and is typically diagnosed prior to adulthood. Furthermore, right-sided defects are uncommon.

Intrathoracic right kidney associated with bochdalek hernia is extremely rare, and in addition to the diagnostic difficulty, this double association presents a challenge for the treatment. with the operative and non-operative options available.

However, nonoperative treatment has only been documented in a few number of patients to far, with negligible morbidity and consequences. In this article, we describe an exceptional case of an 75-year-old woman who came with a developing right-sided Bochdalek hernia and an acquired intrathoracic kidney. We used a conservative strategy to treat the patient. Through its observation, we recall the diagnostic and therapeutic particularities of this entity.

## 2. PRESENTATION OF CASE

The patient was 75 years old, diabetic, hypertensive, had never undergone surgery and denied any history of road accident or serious thoraco-abdominal trauma. admitted to the emergency department for influenza-like illness 3 days previously, the clinical examination found the patient to be hemodynamically stable with a febrile temperature of 38°C, and the pleuropulmonary examination revealed a right basithoracic mass syndrome.

Thoracic radiograph (Fig. N°1) shows an elevation of the right diaphragmatic cupola with an opacity opposite to better characterize this opacity, we performed a thoracic CT scan (Fig. N°2), which revealed a bochdalek hernia in addition to an ectopic right kidney located intrathoracically.

Apart from an inflammatory syndrome, the biological work-up was without anomaly, i.e. correct renal function with creatinemia at 10 mg/l.

In view of the fortuitous discovery, and the correct renal function in addition to the patient's advanced age and comorbidity, we opted not to operate on the patient with a watch-and-see strategy.

The patient was reviewed 6 months later with no complaints.

## 3. RESULTS AND DISCUSSION

Bochdalek hernia (BH) is named after Vincenz Alexaner Bochdalek since he originally characterised it in 1848 [1].

Bochdalek hernia (BH) is a herniation via a posterolateral diaphragmatic defect, while Morgagni hernia is a herniation over an anterior retrosternal or parasternal diaphragmatic defect [2].

It is believed that the pleuroperitoneal canal's incapacity to close at eight weeks of gestation is what causes it [3].

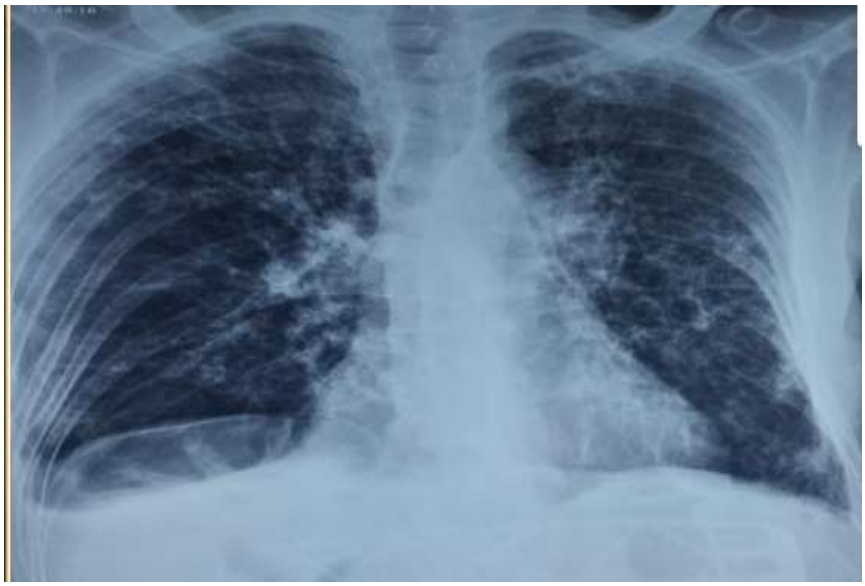

**Fig. 1. standard X-ray image showing the kidney in the thoracic cavity**

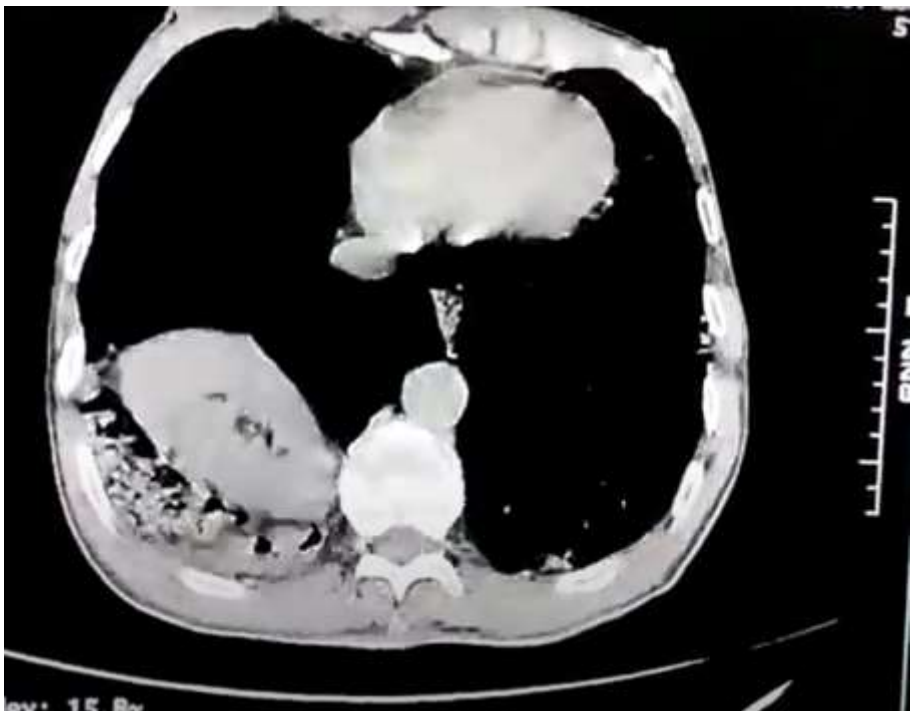

**Fig. 2. CT axial section showing the right kidney intra thoracically**

With a frequency of 0.08 to 0.45 per 1000 births, bochdalek diaphragmatic hernia is a relatively rare disorder [4]

Most often, it is discovered soon after delivery. In 5% of instances, it is discovered incidentaly during regular exams for stomach or respiratory issues, as was the case in our observation. It stays asymptomatic in many individuals [5].

Between 80 and 90% of the time it affects the left side, whereas 10 to 20 percent of the time it affects the right side [2].

Due to liver support for the right hemidiaphragm and quicker closure of the right pleuroperitoneal canal, right-sided hernias are uncommon [3]. On the left side of the body, BH can affect the omentum (92%), splenic flexure of the colon (58%), stomach (25%), and spleen. On the right

side, BH can affect the liver or the small intestine. Kidney herniation can occur in only 1% of cases [4].

The intrathoracic kidney is frequently asymptomatic [6]. because ectopic kidneys often function normally and show no observable symptoms [7]. However, it happens extremely infrequently for people to experience an acute emergency as a result of the herniated abdomen contents being strangled [6].

Typically, it is unintentionally discovered. These people's symptoms and X-ray images might be misconstrued for pleuritis, pneumothorax, or pulmonary tuberculosis [6].

Diaphragm abnormalities cannot be diagnosed using chest radiography; instead, a computed tomography (CT) scan or magnetic resonance imaging (MRI) is far more effective [6].

On thoracic radiographs, intrathoracic ectopic kidneys appear as lesions that resemble paravertebral masses in the posterior mediastinum. There are a number of other differential diagnoses, such as esophageal duplication cysts, bronchogenic cysts, pulmonary sequestration, and descending aortic aneurysms [4].

Despite the lack of agreement about the best strategy for action, the majority recommend a surgical approach [6].

Surgery is used to treat BH, using minimally invasive surgery or open surgery [2].

When the diaphragmatic borders may be approached effortlessly, interrupted, non-absorbable sutures are recommended; nevertheless, mesh should be utilized when the diaphragmatic defect exceeds beyond 20 to 30 cm2 [8-9].

Watchful waiting may be a suitable strategy in selected cases [6].Especially in asymptomatic patients or those with advanced age and multiple diseases, as in the case of our patient.

However, there is still debate on how to treat the ectopic kidney. While some surgeons chose to mobilize the intrathoracic kidney into the abdomen and position it in a location that was close to normal, others just reduced other contents into the abdominal cavity without touching the kidney [7].

Additionally, isolated intrathoracic ectopic kidney patients who have had long-term follow-up have not experienced any problems [10].

Nevertheless, these individuals would benefit from regular monitoring and follow-up because of the kidney's unusual location and the possibility of complications.

which makes the choice of a standard treatment derisory, the choice will have to take into account local conditions as well as the patient's free and informed consent to the benefits and risks of each therapeutic option. Individualized, multidisciplinary management should be used [6].

## 4. CONCLUSION

Bochdalek hernia are rare clinical entities that pose many diagnostic and management chalenges for clinicians. its association with intrathoracic right renal ectopia is extremely rare.

Only in cases when the treating physician has a very high level of suspicion may a diagnosis be made for both of these diseases.

It is highlighted that this condition should be taken into account while making a lower intrathoracic mass differential diagnosis. Low morbidity and death rates can be achieved with rapid detection and timely treatment when there is a high index of suspicion.

## CONSENT

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. Sutedja B, Muliani Y. Laparoscopic repair of Bochdalek hernia. Asian J Endosc Surg. 2015;8: 354-356.

Available:https://doi.org/10.1111/ases.12179

2. Kumar N, Gupta A, Rajput D. Bochdalek hernia in an adult female with intrathoracic left kidney and splenic flexure of the colon: a rare case report with literature review. Pol Przegl Chir. 2019;92(3):60–3.
3. Karaoglanoglu N, Turkyilmaz A, Eroglu A, Alici HA. Right-sided Bochdalek hernia with intrathoracic kidney. Pediatr Surg Int. 2006;22(12):1029–31.
4. Chen B, Finnerty BM, Schamberg NJ, Watkins AC, DelPizzo J, Zarnegar R. Transabdominal robotic repair of a congenital right diaphragmatic hernia containing an intrathoracic kidney: A case report. J Robot Surg. 2015;9(6):357–60.
5. Topor L, Pătrăncuş T, Caragaţa R, Moga A. Left congenital diaphragmatic hernia -- case report. Chirurgia (Bucur). 2015;110 (2):84-7.
PMID: 25800323.
6. Salcedo G, Velez F, Posada M, Barragan C, Vorwald P. Right-sided Bochdalek hernia associated with an intrathoracic kidney in an adult. Surgery. 2021;170(6): e13–4.
7. Yu M, Chen F, Wei S, Xie H. Treatment for Right-sided Intrathoracic Kidney With Congenital Diaphragmatic Hernia by Combined Thoracoscopic and Laparoscopic Approach: A Case Report and Literature Review. Urology. 2022;165: e36–8.
8. Palanivelu C, Rangarajan M, Rajapandian S. et al.: Laparoscopic repair of adult diaphragmatic hernias and eventration with primary sutured closure and pro-sthetic reinforcement: a retrospective study. Surg Endosc. 2009;23(7):978–985.
9. Kitano Y, Lally KP, Lally PA. Late-presenting congenital diaphragmatic hernia. J Pediatr Surg, 2005;40(12):1839–1843.
10. Sarac M, Bakal U, Tartar T, Canpolat S, Kara A, Kazez A. Bochdalek hernia and intrathoracic ectopic kidney: Presentation of two case reports and review of the literature. Niger J Clin Pract. 2018;21(7): 681–6.



*Peer-review history:*
*The peer review history for this paper can be accessed here:*
*https://www.sdiarticle5.com/review-history/108339*