

Pneumomediastinum, a Rare Complication of Upper Gastrointestinal Fibroscopy: A Case Report

Fadoua Idrissi Zaki^{1*}, Ahmed Mougui¹, Imane El Bouchti¹

¹Rheumatology Department, ARRAZI Hospital, CHU Mohammed VI, Marrakech, Morocco

DOI: [10.36347/sjmcr.2022.v10i08.001](https://doi.org/10.36347/sjmcr.2022.v10i08.001)

| Received: 26.06.2022 | Accepted: 29.07.2022 | Published: 03.08.2022

*Corresponding author: Fadoua Idrissi Zaki

Rheumatology Department, ARRAZI Hospital, CHU Mohammed VI, Marrakech, Morocco

Abstract

Case Report

Pneumomediastinum is defined by the presence of air in the mediastinum. It can be spontaneous or secondary to a trauma, its evolution is often favorable and its management is based on symptomatic treatment. Its diagnosis is based on the cervico-thoraco-abdominal scanner. This article presents a rare case of spontaneous pneumomediastinum discovered incidentally after upper gastrointestinal endoscopy.

Keywords: Pneumomediastinum, endoscopy, chest pain, chest scanner, case report.

Copyright © 2022 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

Serious complications of upper gastrointestinal fibroscopy are probably underestimated. They should be screened and treated in a better codified way (Amornytin S, 2013). We present a case of an unusual complication that occurred after upper gastrointestinal fibroscopy.

CASE REPORT

A 31-year-old patient, with no specific pathological history, followed for an axial, peripheral joint and enthesic spondyloarthritis treated with a non-steroidal anti-inflammatory drug, was admitted for a

relapse of his disease. The biological workup showed an iron deficiency anemia that required an upper gastrointestinal exploration. No immediate complications were noted. A chest CT scan was performed one week later for suspicion of an interstitial syndrome on the chest X-ray, which revealed the presence of an isolated small size pneumomediastinum without any detectable fistula (Figure 1A and 1B), although the patient was respiratory asymptomatic. The patient was put on high-flow oxygenation, and a follow-up chest CT scan was performed 48 hours later, showing regression of the pneumomediastinum (Figure 2A and 2B).



Figure 1: Chest CT cross-section (A) and frontal section (B) revealing a small pneumomediastinum

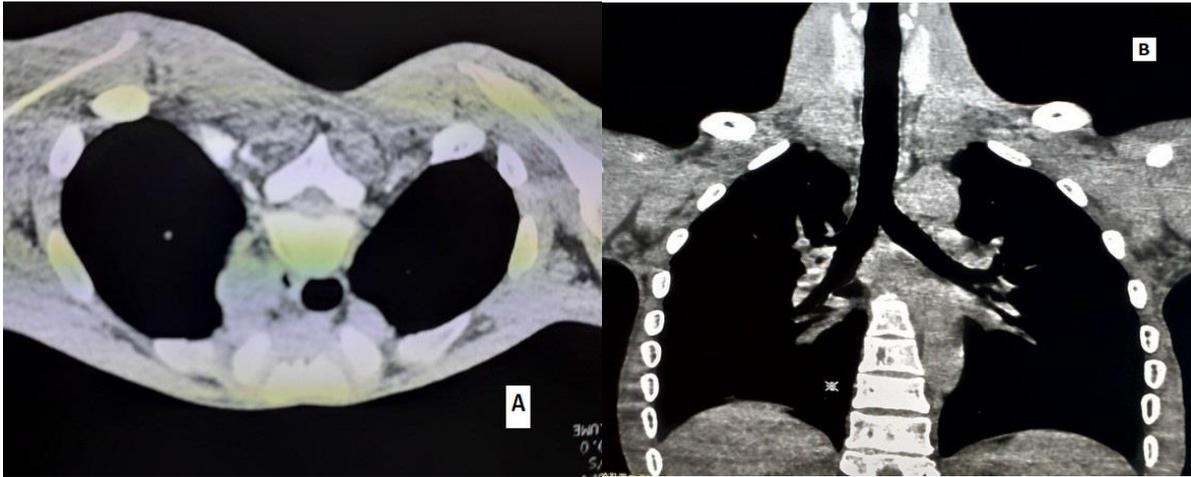


Figure 2: Control chest CT 48 hours later, revealing complete regression of the pneumomediastinum. Transverse (A) and frontal (B) sections

DISCUSSION

Upper GI endoscopy is not a trivial examination, its complications are dominated by those of anesthesia which occur in 0.5%, with a risk of minor incidents in 10 to 20% and a mortality rate of less than 0.03%. Cardio-respiratory complications are present in 50% of cases and are responsible for significant morbidity, digestive complications are those related to the act itself and are dominated by perforations, hemorrhages, infectious complications particularly hepatitis C, are often secondary to poor asepsis of the endoscope or injection equipment for anesthesia products (Pelletier A *et al.*, 2008).

The occurrence of pneumomediastinum, defined by the presence of air in the mediastinum, after upper GI fibroscopy remains rare. Its mechanism can be explained by direct trauma; air can flow into the mediastinum through the cavity of the peritoneum via the esophageal hiatus, and also the foramen of Morgagni. It should be noted that pneumomediastinum in the absence of perforation or spontaneous has been observed after gastrointestinal fibroscopy, its involvement can be explained by an increase in endobronchial pressure associated with an increase in the gradient isolating the alveoli from their environment, It is a barotrauma following excessive vomiting, coughing or any other Valsalva maneuver leading to alveolar bursting and then air leakage along the bronchovascular axes to the hilum and mediastinum (Elmoheen A *et al.*, 2020).

The clinical picture is characterized by sudden chest pain, essentially retro-sternal, coughing in 50% of patients and neck pain in 30%. The clinical examination must look for the Hammam sign, pathognomonic of pneumomediastinum, which is expressed by bullous noises synchronous with the heartbeat (Khadija C *et al.*, 2018).

Standard chest X-rays can be used to orient the diagnosis, but the thoracic or better still cervico-thoraco-abdominal CT scan remains the reference examination, which shows the presence of air in the mediastinum with a leakage of contrast medium (Le Gall C *et al.*, 2016). Management is based on symptomatic treatment: rest, oxygen therapy, analgesia, and clinical and radiological monitoring. The evolution is often favorable (Khadija C *et al.*, 2018).

CONCLUSION

Spontaneous pneumomediastinum after fibroscopy is a rare condition that should not be ignored, with an often favorable evolution, the management of which is based on symptomatic treatment. The reference examination is the cervico-thoraco-abdominal scan.

Acknowledgements: The authors declare that they have no funding and no financial support.

Author Contributions: All authors contributed to the writing of this manuscript and read and approved the final version.

REFERENCES

- Amornyotin, S. (2013). Sedation-related complications in gastrointestinal endoscopy. *World journal of gastrointestinal endoscopy*, 5(11), 527–533. <https://doi.org/10.4253/wjge.v5.i11.527>.
- Pelletier, A., & Vallot, T. (2008). Complications de l'endoscopie digestive. *EMC - Gastro-entérologie*, 3(4), 1-13. DOI :10.1016/S1155-1968(08)38831-2
- Elmoheen, A., Haddad, M., Bashir, K., & Salem, W. A. (2020). Subcutaneous emphysema, pneumothorax, pneumomediastinum and pneumoperitoneum after upper gastrointestinal endoscopy. *BMJ case reports*, 13(11), e236369. <https://doi.org/10.1136/bcr-2020-236369>.
- Khadija, C., Nahid, Z., Hanane, B., & Nabiha, Y.

(2018). Pneumomédiastin spontané: à propos de 18 cas [Spontaneous pneumomediastinum: about 18 cases]. *The Pan African medical journal*, 31, 75. <https://doi.org/10.11604/pamj.2018.31.75.15737>

- Le Gall, C., Jacob, L., Bonnet, F., & Corte, H.

(2016). Perforations traumatiques de l'œsophage. *Journal Européen des Urgences et de Réanimation*, 28(4), 162-169. DOI:10.1016/S1155-1968(08)38831-2