

EFFECT AND IMPLICATION OF BRONCHOSCOPIC BALLOON DILATATION IN A CASE OF TOTAL LUNG COLLAPSE

Amit Srivastava, Rachit Sharma, Jay Manchanda, Charu Sadhwani, Afrah Sharif

Department of Respiratory Medicine ,

Era's Lucknow Medical College and Hospital, Era University, Lucknow, U.P., India-226003.

Received on : 23-02-2023

Accepted on : 11-05-2023

ABSTRACT

It is relatively uncommon for a young patient to have a severe airway blockage. Clinical suspicion of severe endobronchial anatomic alterations is uncommon. In certain situations, bronchoscopy results or radiographic findings are helpful in further assessment. Sarcoidosis, TB, and vasculitides cannot be diagnosed in our case because there is no clinical, radiological, or pathological evidence of these conditions. It is important to identify between benign and malignant tracheobronchial stenosis aetiologies, as well as to take into account the degree of aggression depending on the underlying condition and likelihood of cure. Additionally, it's crucial to take into account whether the obstruction is dynamic (tracheobronchomalacia) or fixed, particularly in the case of benign disease.

KEYWORDS: Bronchoscopic Balloon Dilatation, Bronchoscopy, Lung Collapse, Bronchial Stenosis.

INTRODUCTION

An uncommon clinical condition, bronchial stenosis frequently develops as a complication of other conditions such as sarcoidosis, TB, congenital lesions, traumatic injuries, foreign body obstruction, and inhalational traumas. Here, we show a case of bronchial stenosis with a bronchoscopic balloon dilatation as the primary treatment. In critically ill patients, bedside fiberoptic bronchoscopy is an invaluable tool for the identification and management of a variety of respiratory diseases. The diagnosis of benign and malignant airway lesions is facilitated by the fiberoptic bronchoscope's direct airway inspection capability. Additionally, pulmonary secretions or tissue samples may be taken using a bronchoscope and methods that permit sampling of the lower airways with little to no contamination of the upper airways.

CASE PRESENTATION

An 18-year-old female patient came in to the emergency room with worsening of wheezing, dry cough, and dyspnea symptoms. Following a physical examination, the patient's vital signs were as follows: Respiratory Rate 26 breaths per minute, SpO₂ - 90% at room air, Pulse Rate 78 per minute, Blood Pressure 126/78 millimetres of mercury, Temperature 98.1 F, Audible wheezing with harsh vesicular breath sounds on right side and left sided Rhonchi on auscultation were present. Glasgow coma scale 15/15. On further

investigation complete blood count with general blood picture, Liver functioning tests and kidney function

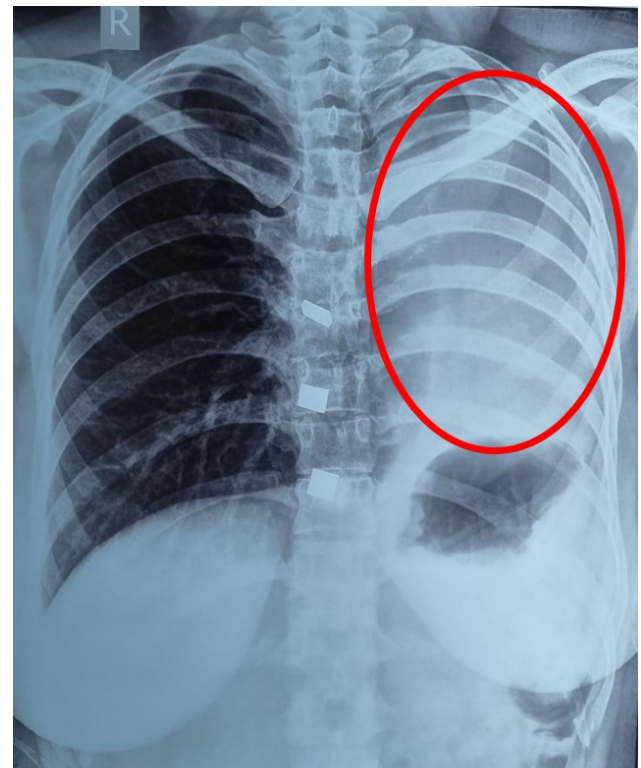


Fig. 1: Chest Skiagram Showing Complete Collapse of Left Lung

Address for correspondence

Dr. Charu Sadhwani

Department of Respiratory Medicine
Era's Lucknow Medical College and
Hospital, Era University, U.P., India-226003.
Email: sadhwanicharu@gmail.com
Contact no: +91-7518039259

tests were within normal limits. Pulmonary function studies demonstrated moderately severe obstructive ventilatory defect. A chest skiagram was performed which revealed collapse of left lung and was confirmed on HRCT thorax scan. Bronchoscopy was performed in this patient which revealed total stenosis of left main bronchus which was treated with Bronchoscopic Balloon Dilatation. Post Dilatation chest skiagram revealed release of left lung collapse and on examination oxygen saturation of patient improved to 96% at room air with absent wheezing and bilateral air entry present on auscultation. Pulmonary function test showed improved forced expiratory volume in first minute. Patient was planned for further dilatation after 2 weeks



Fig. 2: HRCT Thorax Showing Collapse of left Lung

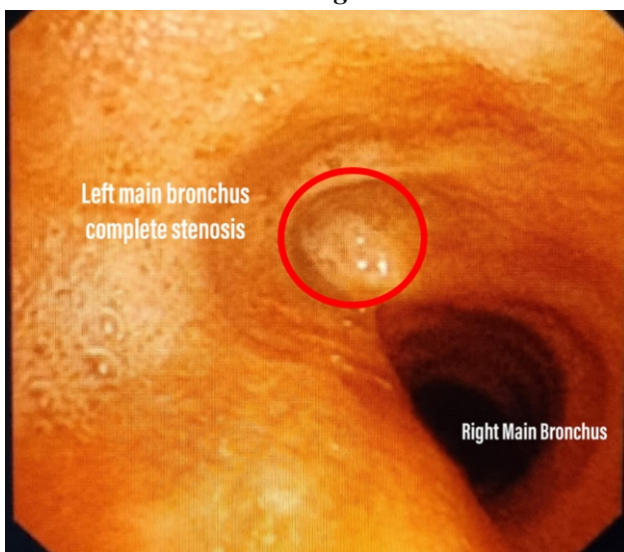


Fig. 3: Image Showing Complete Stenosis of Left Main Bronchus

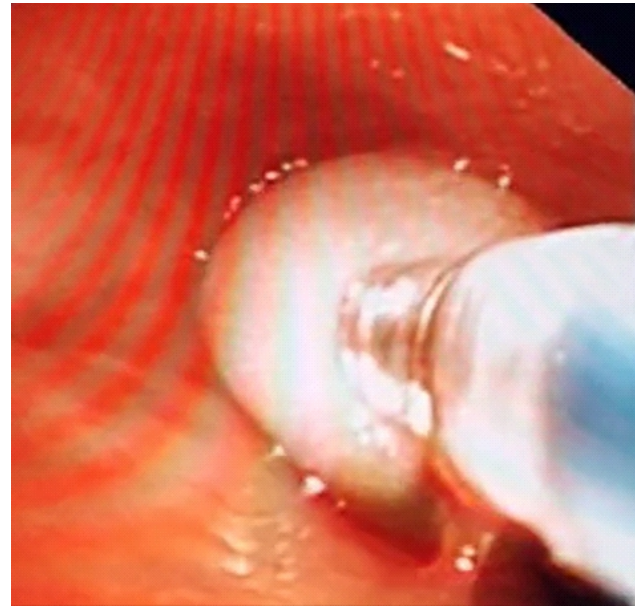


Fig. 4: Bronchoscopic Balloon Dilatation

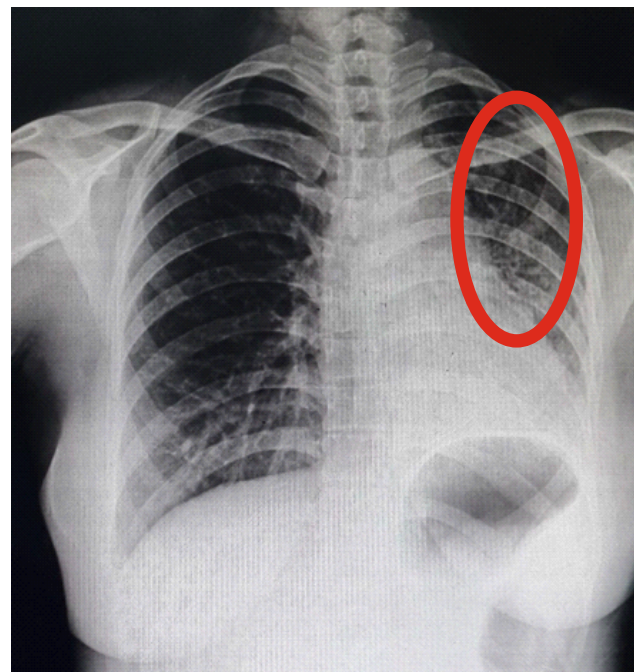


Fig. 5: Chest Skiagram Post Bronchoscopic Balloon Dilatation of Left Main Bronchus Showing no Signs of Collapse

DISCUSSION

Tracheobronchial stenosis (TBS) can be a side effect of a number of illnesses in adult patients. These can result from trauma, medical disorders including sarcoidosis, Wegener's granulomatosis, TB, or malignancy, surgical procedures like bronchial sleeve resection or lung transplantation (LTx), or congenital abnormalities. Dyspnea, coughing, wheezing, stridor, or recurring respiratory tract infections can all be

brought on by this stenosis.

When a systemic therapy is ineffective or not available, there are a number of techniques for endoscopic management of TBS, including bougie dilation, neodymium-doped yttrium aluminium garnet (Nd-Yag) laser, cryotherapy, electrocautery, stent placement, or bronchoscopic balloon dilatation (BBD).

In this case idiopathic stenosis of left primary bronchus was treated using bronchoscopic balloon dilatation.

CONCLUSION

Tracheobronchial stenosis in both children and adults has been successfully treated with Bronchoscopic balloon dilatation utilising an angioplasty balloon catheter. By extending and expanding the bronchial wall, the balloon widens the stenotic bronchus. Open surgery is far more expensive and intrusive than this method, which may be carried out without the use of specialised equipment or advanced techniques required for cryotherapy and laser therapy.

REFERENCES

1. David Shitrit, Michael Kuchuk. Bronchoscopic balloon dilatation of tracheobronchial stenosis: long-term follow-up; European Journal of Cardio-Thoracic Surgery, 2010; 38; 198–202
2. Mary Elizabeth Kreider, David A Lipson. Bronchoscopy for atelectasis in the ICU: a case report and review of the literature. Chest. 2003; 124:344-50
3. Aasim Mohammed, Nabeel Siddiqui, Mark Barash, Uzair Ghori, Muhammad Ali, Stephen Dolandoi. All that wheezes is not asthma: Bronchial stenosis in disguise. Chest. 2018; 28A
4. Janice M. Liebler, Catherine J. Markin. Fiberoptic Bronchoscopy for Diagnosis and Treatment. Critical-Care-Clinics. 2000; 16; 83-100
5. Jonathan Puchalski. Tracheal and Bronchial stenosis: etiologies, bronchoscopic interventions and outcomes. Pakistan Journal of Chest Medicine. 2012; 18; 38-46.



Orcid ID:

Amit Srivastava - <https://orcid.org/0000-0003-3248-7151>

Rachit Sharma - <https://orcid.org/0000-0002-3814-4443>

Jay Manchanda - <https://orcid.org/0000-0003-1126-8136>

Charu Sadhwani - <https://orcid.org/0009-0002-9218-6940>

Afrah Sharif - <https://orcid.org/0009-0002-9170-8145>

How to cite this article:

Srivastava A., Sharma R., Manchanda J., Sadhwani C., Sharif A. Effect and Implication of Bronchoscopic Balloon Dilatation in A Case Of Total Lung Collapse. Era J. Med. Res. 2023; 10(1): 143-145.

Licencing Information

Attribution-ShareAlike 2.0 Generic (CC BY-SA 2.0) Derived from the licencing format of creative commons & creative commons may be contacted at <https://creativecommons.org/> for further details.