

## A Radiological Opacity: Cause and Mean

Bunkar Motilal, Takhar Rajendra P\*, Arya Savita and Arif Mohd

Departments of Respiratory Medicine and Internal Medicine, Government Medical College, Kota, Rajasthan, India

### Introduction

A 35 years old female presented with streaky hemoptysis since seven days, without associated chest pain, fever, cough and expectoration. Her chest x-ray showed ill-defined rounded heterogeneous opacity, size approximately 5 × 3 cm in right para hilar region (Figure 1). A differential diagnosis of para hilar mass, cavitary lesion (tuberculosis, fungal cavity, hydatid cyst and lung abscess), arterio-venous malformation and calcified lymph node was made. Clinical examination of the patient showed no abnormality. To evaluate further, right lateral chest x-ray was advised, surprisingly which was absolutely normal (Figure 2). Retrospectively, we re-examined the patient and found a topknot over her back of chest lying in inter-scapular area, raised a suspicion of topknot as the possible cause of radiological opacity. A repeat chest x-ray with the high tie up of topknot over head with hair clips was advised, Surprisingly, which was also absolutely normal (Figure 3).

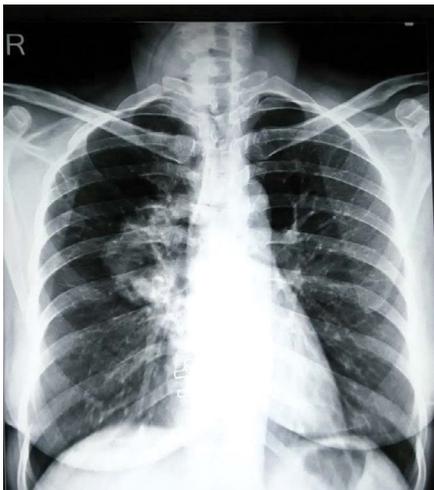


Figure 1: Chest x-ray showed ill-defined rounded heterogeneous opacity.



Figure 2: Right lateral chest x-ray.

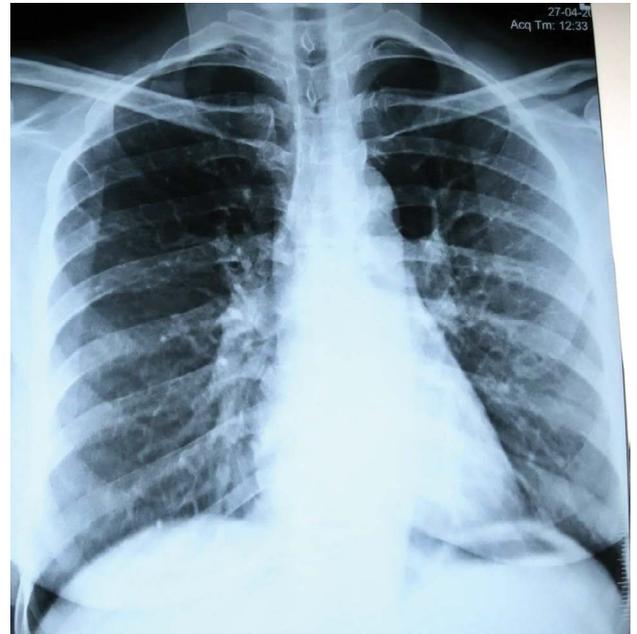


Figure 3: A repeat chest x-ray with the high tie up of topknot over head with hair clips.

On the same day, another lady presented with signs and symptoms of bronchial asthma but her X-ray chest showed right sided paratracheal homogenous opacity extending up to neck and lateral X-ray similar to previous case was normal. Repeat X-ray after high tie up of her topknot was also normal (Figure 4a-4c).

Two similar cases presented with radiological opacities which were because of the topknot, working as an artifact.

The artifacts are often unavoidable, they are seen due to technical errors by radiographers, patient's factor or the presence of external or internal non-anatomical objects. The artifacts can produce difficulties in diagnosis as well as wrong diagnosis and treatment [1]. Patient related artifacts like poor co-operation with positioning or movement, obesity, skin fold thickness and hairs can encounter pathological opacity on routine chest x-ray. These hair styles using synthetic hair braid extension create a peculiar radio-opaque pattern that varied according to hair styles [2,3]. As in our cases, topknot mimics varieties of differential diagnosis. Artifacts are acceptable only when clinical question can be answered otherwise, a thorough clinical assessment along with repeat

\*Corresponding author: Rajendra Takhar, MBBS, MD Departments of Respiratory Medicine, Qtr No 1/4, Medical college campus, Kota, Rajasthan, India, Tel: +919784006021; E-mail: [drrajtakhar@gmail.com](mailto:drrajtakhar@gmail.com)

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Figure 4 (a) (b) (c)

**Figure 4:** Repeat X-ray after high tie up of her topknot.

x-ray with proper specification is required. The physician should also remain vigilant, when clinico-radiological discrepancy found.

#### References

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