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Respiratory Disease

Unusual Intrabronchial Foreign Body

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Abstract **Case Report**

Intra-thoracic textiloma is an exceptional complication leading to misdiagnosis. It could present as hemoptysis, pulmonary abscess, pseudotumor or chronic cough. We report a rare case of a superinfected intra-bronchial textiloma, revealed by flexible bronchoscopy. A 21-year-old patient, operated for esophageal atresia at the age of 10 days, who had a right bilobectomy for bronchial dilatation at the age of 9 years, and who presented several episodes of bronchial superinfections over the 12 past years. In the light of this observation, we show that flexible bronchoscopy should be part of the systematic work-up to be considered in front of dragging abscessed pneumopathies.

Keywords: Intrathoracic textiloma, bronchial superinfections, thoracic surgery.

INTRODUCTION

Textiloma, or gossypiboma, is a foreign body composed of surgical compress(s) or field(s) found at an operated human body despite the precautions taken by the practitioner. It's common after abdominal and pelvic surgery, but rarely seen after thoracic surgery [1, 2].

We report a case of intra-thoracic textiloma revealed by abscessed pulmonary disease 12 years after thoracic surgery.

OBSERVATION

A 21-year-old patient with a history of thoracic surgery, first at 10 days of age for esophageal atresia, and the second at 9 years old for bronchial dilations (right bilobectomy); who has been presenting, since the age of 12 years, several episodes of bronchial superinfection, treated as an outpatient with antibiotic and respiratory physiotherapy. Moreover, the patient reported oral corticosteroid self-medication for one year at 100 mg/day to gain weight.

In 2019 she was diagnosed suffering from pulmonary tuberculosis, treated with 2RHZE/4RH regimen.

In February 2020, the patient was admitted for a new episode of bronchial suppuration, installed two weeks before. She was presenting a fetid vomit, without hemoptysis, chest pain or any dyspnoea. This symptomatology evolved in a context of feverish sensations and altered general condition, not improved by probabilistic antibiotic therapy.

Clinical examination revealed an altered patient, malnourished with a BMI at 15 kg/m², all the other indicators were correct (Temperature: 36.8°C, Oxygen saturation is 95%, a stable hemodynamic and respiratory.

The pleuropulmonary examination showed a right basithoracic fluid pleural effusion syndrome, and a scar of right-sided thoracotomy. The rest of the exam was unremarkable.

Chest radiography showed a right para-hilar opacity, inhomogeneous, with an ascending aspect of the homolateral diaphragmatic dome (Figure1).

Chest CT scan showed an excavated hypodense right basithoracic lesion (Figure 2B), present also on a 2O10 CT (Figure 2A).

The biological assessment revealed an hyperleucytosis at 12160/mm3 with 11160/mm3 of PMNs, an accelerated sedimentation rate at 55 mm at the 1st hour, and a CRP at 12 mg/l.

The patient was treated with a combination of third generation cephalosporins and aminoglycoside, respiratory drainage physiotherapy, rehydration and high-calorie nutrition.

Cytobacteriological examination of expectoration was sterile. Viral serology (HVC, HVB, and HIV) and fasting blood glucose were normal. The abdominal pelvic ultrasound showed no sub-phrenic focus.

The flexible bronchoscopy objectified a whitish formation corresponding macroscopically to a compress, completely obstructing the entrance of the intermediate trunk, with presence of abundant and thick purulent secretions. The foreign body has been completely removed by clamp (Figures 3 and 4), and the bronchi were washed with saline serum.

The bacteriological examination, as well as the cultivation of the compress, revealed two enterobacteria: Citrobacter freundi and Pantoea spp, sensitive to Ceftriaxone, Gentamycin, Ciprofloxacin and Cotrimoxazole.

The clinical evolution was marked by the regression of the volume of expectorations and the turning of their color to white. Biologically, we observed the normalization of white blood cells, PMNs and CRP levels. Radiologically, the chest x-ray was clean (Figure 5).

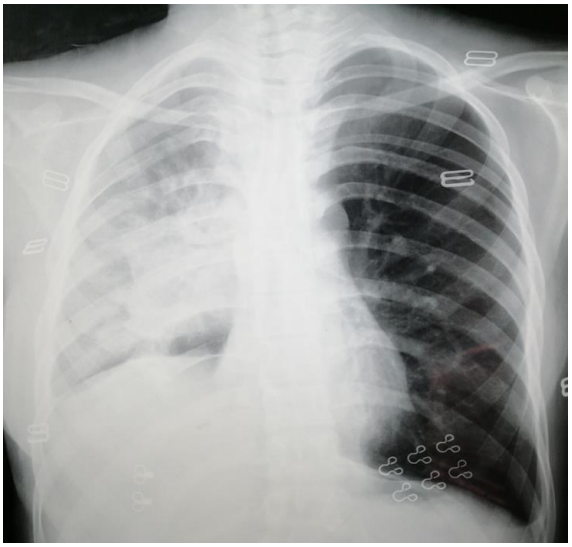

Figure 1: frontal chest X-ray:right para-hilar opacity, inhomogeneous, with an ascending aspect of the homolateral diaphragmatic dome

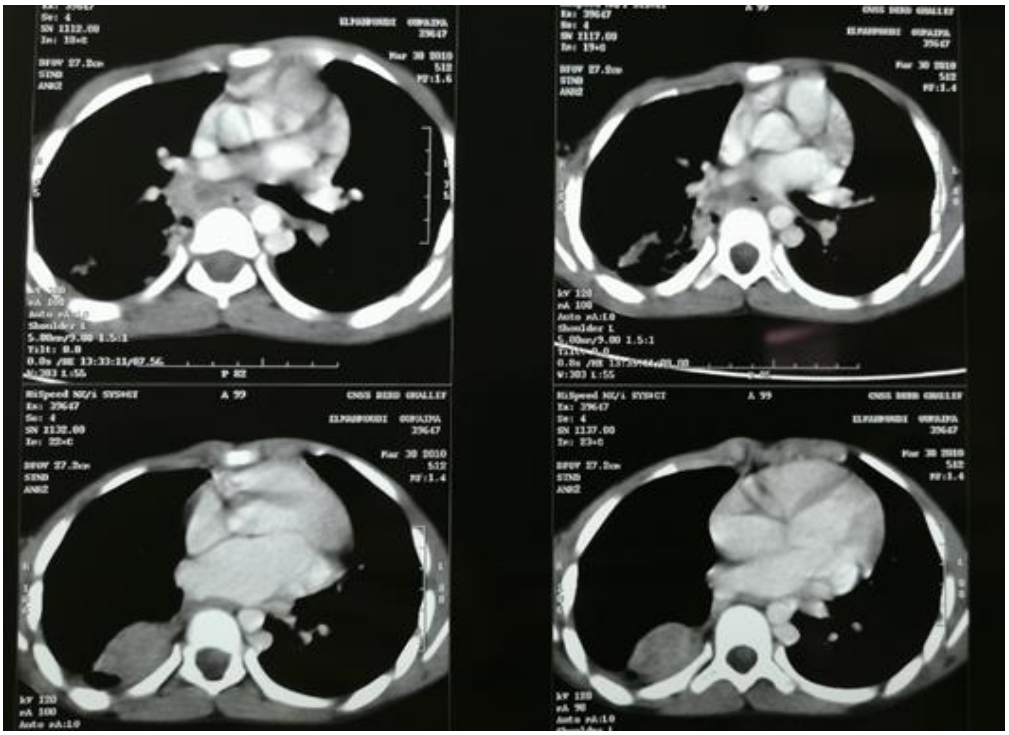

Figure 2A: Chest CT scan of 2010

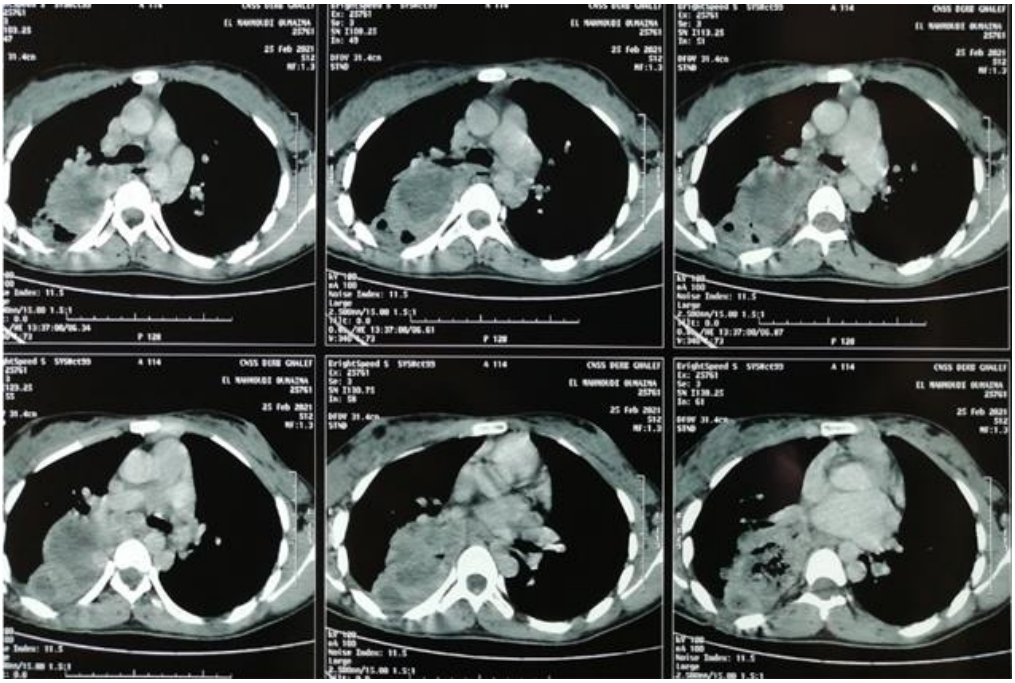

Figure 2B: Chest CT scan (2021): excavated hypodense right basithoracic lesion

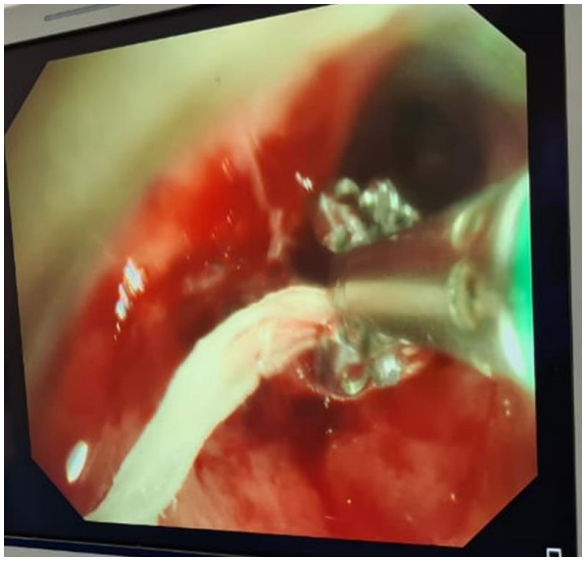

Figure 3: The foreign body removed by clamp

Figure 4: The foreign body after extraction

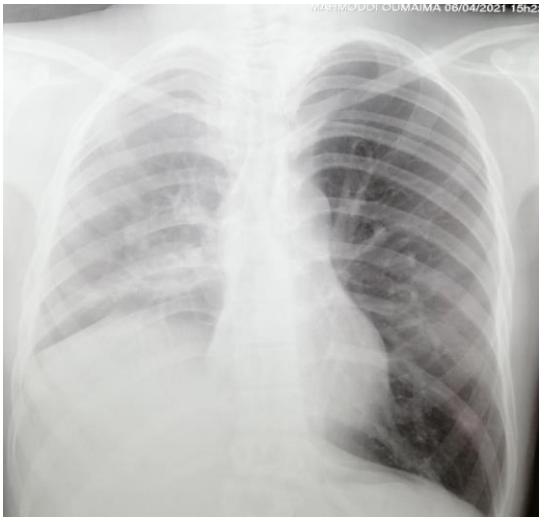

Figure 5: the chest x-ray 15 days after the extraction of the compress

DISCUSSION

Textiloma is a rare surgical complication, more common in abdominal (56%) and pelvic surgery (18%) than in thoracic surgery (11%) [1, 3].

Risks factors of textiloma include: emergency surgery, unexpected change in surgical procedure, high body mass index, change in nursing staff during procedure, female sex, high volume of blood loss, high surgical risk, absence of meticulous surgical count of sponges instruments and needles, increased number of peri-operative personnel involved, increased number of specialty teams involved [4, 5].

On the first day, the textiloma triggers an exudative inflammatory reaction which can remain

aseptic on one hand, leading to a granulation tissue after one week and to a fibrous envelop two weeks later; calcifications and encystment can occur. On the other hand, that initial exudative inflammatory site can get infected and form abscess [6].

Symptoms depend on the location and the possible migration of the retained gauze and on the type of local tissue reaction (infectious or aseptic): thus we can have early chest pain, fever, or late muco-purulent expectoration and haemoptysis at the fistulisation stage in the bronchi. Pseudo-tumor forms have been reported, with compressive risk [7].

In our case, the symptoms appeared quickly after thoracic surgery and the diagnosis of certainty of textiloma was made twelve years after the surgery.

Chest radiography face is often the first examination requested: it shows heterogeneous opacities, calcified, or hydro-aeric; but these signs remain not specific to textiloma. Standard radiography can be used to detect the existence of compresses, marked with a radiopaque wire [3, 8, 9].

The chest scanner with contrast injection is considered the best examination way in detecting textiloma and its possible complications. It shows the presence of a spongiform mass with gaseous bubbles that can be the witness of a superinfection, air released by the compressor a bronchial fistula. There is a heterogeneous center that can correspond to different levels of disintegration of the foreign body. It is also possible to note ribbon calcifications [4]. In our case, the absence of a radio-opaque compress in the scanner and the importance of granulomatous inflammatory reshaping around the foreign body did not allow the scannographic recognition of the textiloma.

On magnetic resonance imaging (MRI), images correspond to a well-limited round or oval formation in T1 hyposignal and T2 hypersignal with a more or less thick wall corresponding to fibrous tissue and producing a wheel ray image. The contribution of MRI compared to CT in these difficult diagnostic situations remains to be determined [3, 4].

Flexible bronchoscopy may reveal purulent secretions, [1] or even the entire textiloma as in our patient's case.

The differential diagnosis can be made with an abscess, hematoma, pulmonary sequestration or with a hydatid cyst rupture [2].

The complications caused by textilomas are numerous, represented by infection, abscessation, compression of neighboring organs, fistulization in the bronchi, and skin fistulization [3].

The treatment of intrathoracic textilomas can only be surgical. The difficulty of their removal depends essentially on the time between the first intervention and its discovery. Intrabronchial textilomas are accessible to flexible bronchoscopy.

Prevention remains the best treatment for textilomas, by applying some simple and effective recommendations during surgery (counting pads and drapes, using pads and drapes marked with radio-opaque thread, easily detectable in the immediate postoperative period) [3].

In Morocco, textiloma is a serious fault with medico-legal consequences, leading to the condemnation of the practitioner according to Articles 78 and 79 of the civil law and which can go up to imprisonment according to Articles 432 and 433 of the criminal law [10].

CONCLUSION

The diagnosis of intrathoracic textiloma remains rare and its late presentation is non-specific. Radiological imaging with a CT-scan and/or MRI could lead to the diagnosis. Surgery remains the reference treatment for the diagnosis and cure of intrathoracic textiloma with pathological examination, essential for confirmation. A means of prevention has to be developed because swab count is not totally reliable.

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