

Plombage thoracoplasty with balls performed for tuberculosis – still working after 46 years

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Abstract

Plombage thoracoplasty using different synthetic materials was a popular procedure in the management of tuberculosis (TB) in the 1940-50's, being then abandoned. We report an 81-year-old patient who underwent a plombage thoracoplasty with balls at the age of 35; at the moment of examination in our unit, the patient had no chest complaints and no complications related to the surgical procedure was noted. CT scan showed the presence of the plombage material (balls) surrounded by fibrosis and calcifications but without other significant lesions. From our knowledge, this seems to be the first detailed modern imagistic description of a plombage thoracoplasty with uncomplicated very long-time outcome (46 years after surgery).

Keywords: tuberculosis, thoracoplasty, plombage, computed tomography

Rezumat

Plombaj cu bile pentru tuberculoză funcțional după 46 de ani

Toracoplastiile cu plombaj folosind diverse materiale sintetice au fost intervenții populare în managementul tuberculozei (TB) în anii 1940-50, fiind ulterior abandonate. Prezentăm un pacient de 81 de ani la care s-a practicat un plombaj cu bile la vârsta de 31 de ani; la momentul examinării în unitatea noastră, pacientul nu prezenta acuze toracice și nici complicații legate de intervenția efectuată. Examenul CT a evidențiat materialul de plombaj (bile) înconjurat de fibroză și calcificări, dar fără alte modificări. După cunoștința autorilor, acest caz pare a fi prima descriere detaliată folosind mijloace imagistice moderne a unui plombaj cu bile cu evoluție necomplicată pe termen foarte lung (46 de ani).

Cuvinte-cheie: tuberculoză, toracoplastie, plombaj, tomografie computerizată

Introduction

Plombage thoracoplasty is a procedure designed for TB treatment based on the idea that the collapse of the underlying parenchyma favours the healing of the lesions. It was extremely popular in the 1940-60's, the main advantages being the simplicity of the procedure and the absence of an important chest mutilation, the procedure being very well tolerated by fragile patients¹.

Case report

We present an 81-year-old male patient who was diagnosed at the age of 33 years with left upper lobe fibro-cavitary TB. Medical treatment did not achieve healing and the patient was referred for surgery. At the age of 35, the patient underwent an extramusclo-periosteal plombage with balls in another unit. The patient had an excellent postoperative evolution, with negative sputum cultures for *Mycobacterium tuberculosis* and no respiratory complaints for the following 46 years, working as a general practitioner until the age of 70. He was admitted to our unit for an entero-mesenteric infarction and died on postoperative day 8 (after segmentary enterectomy) due to a myocardial infarction.

A chest computed tomography (CT) scan showed several ovoid and rounded structures with a diameter between 2 and 3.5 cm located in the upper part of the chest, corresponding to the balls placed during surgery. All the

balls seemed to be intact, with important fibrosis and calcifications surrounding them. Some of the balls were rounded and some had an ovoid shape, suggesting a certain deformation during time; some of the balls were located very near to the aorta (less than 1-2 cm). There was an obvious defect corresponding to a limited rib resection required for the introduction of the balls but no major chest wall deformity. The overall evaluation showed the healing of the previous TB lesion. The remaining parenchyma seemed normal, with only a few small nodules and minor emphysema lesions, which may be considered as normal at such an advanced age; there were no pulmonary cavities or other important TB lesions (Figure 1).

Based on the CT findings, negative sputum cultures and the clinical status, we may consider that the procedure was a very successful one, with excellent long time outcome.

Discussions

Despite some good results reported on large series¹, plombage thoracoplasty was almost completely abandoned due to the good results of the medical treatment after the introduction of modern TB drugs (which reduced the overall indications for surgery in TB patients) and due to some specific complications related to the presence of the plombage material. This acts as a foreign structure, with the possibility of developing long-time complica-

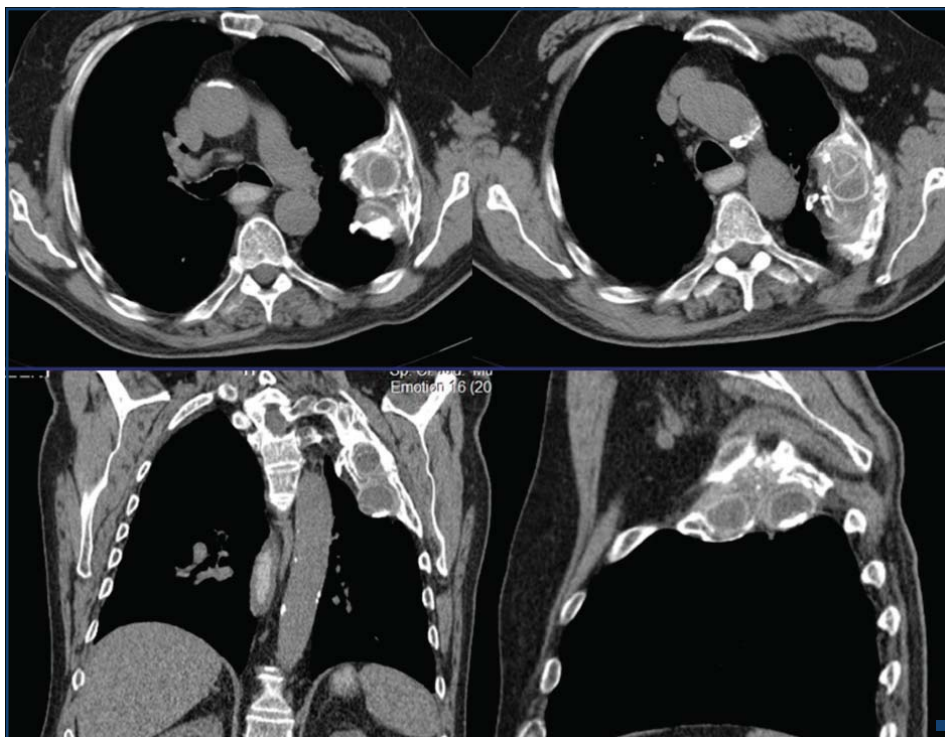


Figure 1. 81-year-old patient who underwent a plombage thoracoplasty with balls at the age of 35. CT scan performed at 46 years after the plombage thoracoplasty (see text for details).

ons such as: rejection, infection, broncho-pleural fistula, erosion of major vessels and even development of neoplastic lesions secondary to the chronic inflammation^{2,3,4}. As plombage materials a lot of substances were tried (paraffin, Lucite balls, silicone prosthesis taken from breast enlargement surgery etc.), none of them being without complications⁴. In our days, most authors prefer to perform plombage using well-vascularized flaps which act as a biologically active material without any risks for long-term complications^{5,6}; another advantage is the possibility to use them in the presence of active infection⁷.

Our case had an excellent outcome with no thoracic complaints for over 46 years after the procedure. An interesting aspect is the small distance between the balls and the aorta since one of the most feared complications of plombage thoracoplasty is the erosion of major vessels with secondary hemorrhage requiring emergency surgery⁴. In our case, despite the close neighborhood with the aorta and the subclavicular vessels, there were no such complications.

The case is interesting due to the imagistic aspects and the excellent long-time evolution after a procedure with

which the actual generation of pneumologists and thoracic surgeons is not familiar; as a matter of fact, most of the young thoracic surgeons have neither performed, nor seen such a procedure. In the recent published literature, there are some case-reports and small series presenting mainly some complicated cases^{2,3,4}. In the 1940-50's, chest imaging was based mainly on plain radiographs and radioscopy, so that there are almost no data describing the modern imagistic aspects of the uncomplicated cases. Pneumologists, surgeons and radiologists should be familiar with the imagistic aspects of the plombage thoracoplasty since late survivors may be encountered in the clinical practice requiring a differential diagnosis with other diseases of the chest⁸. Another aspect is that the actual recrudescence of TB may bring into attention some procedures that were considered abandoned at a certain time, performed with the aid of modern possibilities⁹.

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