

## Bilateral elastofibroma dorsi - rehabilitation of an uncommon tumor: case report

### *Elastofibroma dorsi bilateral - reabilitação num tumor incomum: relato de caso*

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#### ABSTRACT

Elastofibroma are rare, slow-growing, soft tissue benign tumors that originate from mesenchymal tissue. We report an 85-year-old male patient with the diagnosis of bilateral elastofibroma dorsi whose symptoms were bilateral chronic pain in the thoracic spine and limitation of shoulder range of motion. The proposed treatment consisted of a rehabilitation program in our department mainly focused on pain management and postural reeducation of the scapulohumeral rhythm, with great improvements namely on the anterior extension and abduction of the shoulder and with no pain at the 6-month post-treatment reevaluation. This shows an important role of Physical Medicine and Rehabilitation in the management of patients with these rare tumors.

**Keywords:** Neoplasms/Rehabilitation, Physical Therapy Modalities, Physical and Rehabilitation Medicine

#### RESUMO

Os elastofibromas são tumores raros benignos de tecidos moles, de crescimento lento, que se originam do tecido mesenquimatoso. Relatamos o caso de um paciente, do género masculino, 85 anos com diagnóstico de elastofibroma dorsi bilateral cujos sintomas apresentados eram dor crónica bilateral na coluna torácica e limitação da amplitude de movimento dos ombros. O tratamento proposto consistiu num programa de reabilitação no departamento de Medicina Física e de Reabilitação, focado principalmente no controlo da dor e na reeducação postural do ritmo escapuloumeral, com grandes melhorias, principalmente na extensão anterior e abdução do ombro e sem dor na reavaliação aos 6 meses após o tratamento. Pretendemos demonstrar o importante papel da Medicina Física e Reabilitação no manejo dos doentes acometidos por estes raros tumores.

**Palavras-chave:** Neoplasias/Reabilitação, Modalidades de Fisioterapia, Medicina Física e Reabilitação

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## INTRODUCTION

Elastofibromas are rare, slow-growing, soft tissue benign tumors that originate from mesenchymal tissue. They occur mostly in the infrascapular region between the scapula and the thoracic wall, deeply to the serratus anterior and latissimus dorsi muscles, sometimes inserting into the periosteum of the posterior ribs. It is frequently bilateral.<sup>1</sup>

These tumors are more common in women over 50 years of age,<sup>1</sup> and extremely rare in children.<sup>1</sup> Symptoms typically include local scapular swelling, pain, stiffness, scapular snapping and impingement like symptoms.<sup>1,2,3</sup> The most frequent upper limb limitation occurs in the anterior extension of the arm.<sup>4</sup>

The recurrence of this tumors is rare and malignant transformation has not been described so far which makes its excision needed only in symptomatic patients.<sup>1,3</sup>

But before a more invasive treatment is precluded the authors believe a more conservative measure must be tried and a rehabilitation program must be one of the options tried as we will illustrate with this successful case.

## CASE REPORT

We report a case of an 85-year-old, caucasian male patient, retired from construction work and agriculture, independent for his daily activities. The patient had no comorbidities or other relevant clinical background.

Six months before consultation he started with symptoms of bilateral shoulder and scapular pain and stiffness, and limitation of shoulder movement, with significant limitation in his activities of daily living without other associated symptoms.

On physical examination, a bilateral tumefaction of the scapular area was detected. The patient had bilateral limitation of the anterior extension and abduction of the shoulder (above 90° bilaterally) but with no other significant changes in the physical exam. The patient referred pain (mean VAS 4/10), that was intensified with the use of the upper limbs in his dally living activities (mean VAS 5/10) and he reported the use of NSAIDs to control the symptoms.

The patient went through blood and urine analytic check and MRI scan and the diagnose of elastofibroma dorsi was established by it's typical appearance on the MRI scan. The other tests showed no significant abnormalities.

On a multidisciplinary team (with an orthopedic surgeon, general surgeon and physiatry) it was decided a conservative treatment for the patient symptoms. The proposed treatment combined oral pain medication a needed and a rehabilitation program in the physical therapy sector of the Physical and Rehabilitation Medicine department focused on pain management and postural reeducation of the scapulohumeral rhythm, 3 times a week for 6 weeks.

At end treatment, there was a great improvement of the patient shoulder range of motion (limitation of the anterior extension and abduction above 155° on the left side and 145° on the right side), resolution of pain symptom (mean VAS 0/10) and no need of NSAID drugs use. At 2, 6 and 12 months after treatment, the clinical evaluation showed the patient kept his gains in range of motion and pain relief without tumor growth or other complications (Figure 1 and Figure 2).

## DISCUSSION

Elastofibromas are rare, slow-growing, soft tissue benign tumors that originate from mesenchymal tissue. The reported incidence is 0.23/100,000 but its prevalence is probably underestimated due to frequency of asymptomatic and radiologically undetectable cases.<sup>5</sup> They occur mostly in the infrascapular region between the scapula and the thoracic wall, deeply to the serratus anterior and



Figure 1. Patient on the resting position.



Figure 2. The mass is clearly seen on the left inferior corner of the scapula with abduction and elevation of the arm.

latissimus dorsi muscles, sometimes inserting into the periosteum of the posterior ribs.<sup>1</sup> It occurs predominantly on the right side, but, is often bilateral.<sup>4</sup>

These tumors are more common in women over 50 years of age and extremely rare in children.<sup>1</sup> They are often asymptomatic but when present, symptoms typically include local scapular swelling, pain, stiffness, scapular snapping and impingement like symptoms.<sup>1,2,3</sup> The most frequent upper limb limitation occurs in the anterior extension of the arm.<sup>4</sup>

The decreasing ROM of the shoulder is a result of the mechanical irritation and discomfort caused by the tumor. Though, some patients have a free ROM.<sup>5</sup>

Elderly patients or patients with bilateral tumors of typical localization and radiographic findings do not require biopsy, and the diagnosis of elastofibroma dorsi can be presumed. If the characteristics of the tumor are less typical it is recommended that an open biopsy or core needle biopsy is performed. A fine needle biopsy is inadequate to get a representative tissue specimen for the correct diagnosis. Elastofibroma dorsi is histologically characterized by an increased fibroblastic proliferation with an accumulation of elastic fibers. These elastic fibers are altered: eosinophilic, plump, elongated, and larger than regular ones, fragmented into disks or globules and are found in a collagenous matrix, mingled with fat cells that form islands of adipose tissue in various sizes. The lesions are

mostly hypocellular, containing fibrocystic and fibroblastic cells with a common dense core. Dense granular bodies may exist within the fibroblast cytoplasm, probably representing elastin or its precursors. No atypia or mitotic activity is found.<sup>5</sup>

Complete surgical excision in symptomatic patients remains the treatment of choice. The recurrence of these tumors is rare and malignant transformation has not been described so far which makes its excision needed only in symptomatic patients. The role of diagnostic biopsy is to exclude malignancy and to reassure the asymptomatic patient that no radical surgical treatment is necessary.<sup>1,3,6</sup>

Contrarily to Tokat et al.<sup>7</sup> conclusions the authors do not think that a rehabilitation program with an adequate physiatrist supervision would increase the risk of mass growing in an elastofibroma dorsi patient. There is a risk for an increase in blood pressure during physical therapy, that may occur most dramatically with isometric exercises. That increase must always be present in the physiatrist mind, mostly because of the intracranial hemorrhage risk, not because of the risk of tumor growth.<sup>8</sup> It is also important to keep in mind the contra-indications and the precautions of using each therapeutic physical agent in any specific rehabilitation program always considering the specificities of the patient in treatment.

For the authors best knowledge, rehabilitation of patients with tumor lesions is well known to improve specific

musculoskeletal or soft-tissue complaints, such as contractures, pain, mobility and self-care.<sup>8</sup>

Soft tissue tumors are well known for their mobility restrictions and self-care deficits. Several clinical studies about exercise performed in populations with tumors have shown gains in numerous parameters including improvements in cardiopulmonary fitness, quality of life, as well as reducing fatigue, depression and anxiety.

Nevertheless, a growing number of studies show that increased physical activity might help reducing the risk of cancer.<sup>8</sup>

Summarily, as in the case presented, the authors think a physiatrist prescribed and monitors rehabilitation program should be considered in all cases of elastofibroma dorsi, either to increase general survivor, symptoms control, increase the quality of life, improving and reducing disability from comorbidities.

## CONCLUSION

A rehabilitation program is primarily a noninvasive treatment, with very low complication rates, particularly in the elderly, and with high potential of symptom improvement or symptom resolution concerning range of motion limitation and pain as seen in this case report.

Once no malignant transformation of elastofibroma dorsi's have been described so far, and symptoms are the usual reason for

surgical treatment, a rehabilitation program should be considered as the first line of treatment leaving surgical excision only for the unsuccessful cases.

## REFERENCES

1. Parratt MT, Donaldson JR, Flanagan AM, Saifuddin A, Pollock RC, Skinner JA, et al. Elastofibroma dorsi: management, outcome and review of the literature. *J Bone Joint Surg Br.* 2010;92(2):262-6. DOI: <https://doi.org/10.1302/0301-620X.92B2.22927>
2. Nishio J, Isayama T, Iwasaki H, Naito M. Elastofibroma dorsi: diagnostic and therapeutic algorithm. *J Shoulder Elbow Surg.* 2012;21(1):77-81. DOI: <https://doi.org/10.1016/j.jse.2011.01.043>
3. Braham E, Hergli I, Boudaya MS, Ismail O, Ayadi-Kaddour A, Kilani T, et al. Elastofibroma of scapula: a case report and literature review. *Ann Transl Med.* 2013;1(3):31.
4. Pessoa J, Sasso AA, Barreto MM, Zanetti GM1, Marchiori E. Bilateral elastofibroma dorsi. *Radiol Bras.* 2016;49(1):61. DOI: <https://doi.org/10.1590/0100-3984.2015.0137>
5. Majó J, Gracia I, Doncel A, Valera M, Núñez A, Guix M. Elastofibroma dorsi as a cause of shoulder pain or snapping scapula. *Clin Orthop Relat Res.* 2001;388:200-4. DOI: <https://doi.org/10.1097/00003086-200107000-00027>
6. Sarici IS, Basbay E, Mustu M, Eskut B, Kala F, Agcaoglu O, et al. Bilateral elastofibroma dorsi: a case report. *Int J Surg Case Rep.* 2014;5(12):1139-41. DOI: <https://doi.org/10.1016/j.ijscr.2014.10.032>
7. Tokat AO, Karasu S, Turan A, Gözel S. Rapid enlargement of elastofibroma dorsi after physical therapy. *Ann Thorac Surg.* 2011;91(5):1622-4. DOI: <https://doi.org/10.1016/j.athoracsur.2010.10.089>
8. Frontera WR, Gans B, Walsh N, Robinson L. DeLisa's physical medicine and rehabilitation: principles and practice. Philadelphia: Lippincott Williams & Wilkins; 2010.